

# Leveraging Data for Racial Equity in Workforce Opportunity



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# FOREWORD

**On behalf of the IBM Center for The Business of Government and the Center for Open Data Enterprise (CODE), we are pleased to present this new report, *Leveraging Data for Racial Equity in Workforce Opportunity*, by Temilola Afolabi, Senior Research Associate at CODE.**

Across many decades, obstacles to gainful employment have limited the ability of Black Americans and other people of color to obtain well-paying jobs that create wealth and contribute to health and well-being. A dearth of opportunity in the job market is related to inequalities in education, bias in hiring, and other forms of systemic inequality in the U.S.

Over time, federal efforts have addressed the need to increase diversity, equity, and inclusion in the government workforce, and promoted similar changes in the broader society. While these efforts have brought progress, they have not been entirely effective. At the same time, federal action has made new kinds of data available—data that can shed light on some of the historic drivers of workforce inequity and help inform solutions to their ongoing impact.

This report explores a number of current opportunities to strengthen longstanding data-driven tools to address workforce inequity. The report shows how the effects of workforce discrimination and other historic practices are still being felt today. At the same time, it outlines opportunities to apply data to increase equity in many areas related to the workforce gap, including disparities in health and well-being, socioeconomic status, and housing insecurity.

This brief builds on the IBM Center’s recent work addressing how public administration can promote equity, which is one of the Center’s priority research areas. It is the third in a series of projects on Open Data for Racial Equity conducted in partnership with CODE. The first report in that series, [Using Data to Advance Racial Equity in Healthcare](#), was published in August 2022. The second report, [Leveraging Data to Improve Racial Equity in Fair Housing](#), was published in November 2022.



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We hope that this report provides helpful perspectives for government leaders and their stakeholders in designing effective strategies and programs that promote more equitable workforce opportunities across government and for all Americans.

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# EXECUTIVE SUMMARY

**This report addresses issues of equity in workforce opportunity, examines the current state of workforce opportunity for racial and ethnic minorities, describes issues that lead to inequity in workforce opportunity, and identifies data-driven opportunities to address them.**

Black, Latino, and Indigenous populations in the United States have faced a long history of discrimination, particularly in the workforce sector. This paper begins by providing an overview of racial and ethnic inequality in the federal workforce. It then explores notable legislation, passed by the federal government to improve racial equity and combat the discriminative systems driving unequal outcomes in the workforce.

To achieve equity across all workforce facets, agencies will need more and better quality, highly accessible data to identify and analyze inequalities, develop solutions, and track progress. This report summarizes research on the workforce data landscape and includes information on the overall state of this data, gaps in information, nationwide workforce initiatives to serve as models, and primary sources of data on relevant topics like education and economic opportunity.

The paper draws on research about the primary drivers of inequity affecting the U.S. workforce. The report identifies three major issues in inequitable outcomes, and opportunities to find solutions using data and technology. Those are:

- Unconscious bias in recruitment processes and discriminative job requirements
- Limited access to education and training to qualify for good jobs
- Ineffective communication of employee skills and records of learning

As this analysis shows, data can drive improvements in achieving racial equity in the U.S. workforce and bolster economic potential.

## Open Data for Racial Equity

This brief is a part of the Center for Open Data Enterprise's [Open Data for Racial Equity](#) program. To aid federal efforts to measure and advance equity, and support the overall advancement of racial equity, CODE is conducting this project to find ways the federal government can partner with groups outside of government to develop data-driven solutions. There is a need to apply data for equity in the areas of criminal justice, health care, environmental justice, housing, and the workforce. As part of this project, the IBM Center for The Business of Government is partnering with CODE to publish issue briefs [leveraging data to advance health](#), [housing](#), and workforce opportunity. These papers examine issues that systemically have caused inequity in these areas, and identify data- and technology-driven solutions.

# INTRODUCTION

## Access to good jobs and the education and training needed to qualify for them are keys to reducing racial economic disparities.

This report addresses inequities in workforce opportunity, describes data-driven equitable opportunities for positive change for individuals and communities of color, and presents recommendations for reform. Identifying and taking advantage of these opportunities depends on data about job skills, education, and hiring and employment practices.

A more equitable and inclusive workforce system can provide better opportunities for people and businesses. As the country works to improve the economy in an increasingly digital age, data can help government to understand the changing workforce landscape. A growing [skills gap](#) threatens the success of the economy and workforce.

The majority of jobs require skills training beyond high school, but too few workers can access the skills training and education needed to fill in-demand jobs. Ensuring that states and the federal government have quality data systems in place to measure how well education curriculums and training programs prepare skilled workers will be essential to a thriving twenty-first century economy.

### Inequity in the Workforce

Certain historical and systematic discriminatory practices can help us understand the legacy of inequity in the workforce.

In 1913, for example, President Woodrow Wilson authorized racial discrimination in the federal workforce by [allowing segregation](#) in federal departments. By the end of 1913, Black workers throughout the government were relegated to separate work areas, lavatories, and lunchrooms. They were also appointed to menial roles and reassigned to divisions set for termination.

Later, in 1929 when the stock market crashed, the [National Industrial Recovery Act \(NIRA\)](#) provided federal funds to support local public relief project employment. The Act barred [pre-dominantly Black](#) agriculture and domestic workers from receiving public relief work. Likewise, the American Federation of Labor (AFL), a national federation of labor unions in the U.S., upheld racial discrimination in unions. In the early 1900s, Black workers were denied admission to affiliated unions, and were instead allocated to separate local, or affiliated federal labor unions made up exclusively of 'colored' workers.

During this time, the [Social Security Act](#) also provided a means for unemployment insurance, pensions, and support for the disabled, widows and orphans. Yet, Southern states were able to create rules that [excluded](#) Black Americans from participation.

The [Biden administration](#) today has committed to advancing diversity, equity, inclusion, and accessibility in government hiring practices, given recent data showing that people of color still face structural inequality in the federal workforce. Despite the nine-principle merit system used by the federal government to ensure fairness and equity in their hiring processes, there is still evidence of bias within the system. For instance, Black and other people of color makeup [33 percent](#) of senior-level federal positions, yet 47 percent of all full-time entry level positions reflect a lack of employee promotions from underrepresented groups.

The [Civil Service](#) in particular—the body of government officials who are employed in civil occupations that are neither political nor judicial—appears to be racially unbiased, as data on the [ratio of people of color](#) (POC) demonstrates. Yet, this group holds a disproportionately smaller share of [senior-level positions](#).

## Addressing a Legacy of Discrimination

Today, the federal government can do more to promote equitable workforce opportunity, and to continue to reverse a legacy of discrimination that goes back more than a century. (The [History of Systemic Workforce Inequities](#) takes a closer look at the roots for discrimination in the workforce that continue to impact us.)

Quality data systems can play a key role in helping to address inequities across the workforce and in its own ranks.





## Issues and Protections for Workplace Equity

### Direct vs. Indirect Discrimination

To understand the working mechanisms behind unequal workforce opportunity in the U.S., one must first understand the contextual relationship between discrimination and inequitable outcomes. Discrimination pervades the everyday life of racial and ethnic minorities in the U.S. to varying degrees and in many forms. It can be felt through [direct or indirect](#) discrimination, which operate in different ways and can have different legal consequences.

Direct discrimination occurs when an employer makes inequitable employment decisions based on a person's race, color, national origin, or other demographic factors. This form of discrimination [implies intention](#), which is easier to establish when an employer is explicitly or implicitly unwilling to hire people from a protected class.

Indirect discrimination, on the other hand, occurs when institutional policies or practices systematically exclude members of certain groups from employment opportunities. This can include height and weight restrictions, or diploma or other formal requirements unrelated to a specific job's duty. Indirect discrimination can also include individual passive behaviors that are extremely difficult to demonstrate with [direct evidence](#). For example, an employee may claim discrimination due to a manager consistently commenting on their appearance, barring them from in-person meetings, and asking inappropriate questions about ethnic customs.

A claimant can also accuse an employer of discriminative behavior in the form of the lack of promotions and raises. This may occur if the employer of a predominantly White company repeatedly gives formal recognition to White employees, but denies the same advances to employees of color despite comparatively higher performance in a similar time period. Also, if an employer requires greater outcomes from their employees of color for the same promotion. Due to the lack of direct evidence—evidence that supports the truth of an assertion directly with no intervening inferences—it can be nearly impossible to prove a connection.

### Employee Protections

#### ***Historic Federal Legislation***

Policymakers have taken multiple executive and legislative actions to combat employment discrimination and improve equity in the workplace, beginning with several critical steps in the 1960s.

Congress has shown a continued interest in improving equitable workforce conditions through the [Paycheck Fairness Act](#). The Act is intended to close the pay gap and address loopholes in the Equal Pay Act. The bill would require employers to prove why a pay disparity exists within their organization, prevent employers from asking employees about their salary history, and allow employees to take action if they feel they're paid unfairly.

<p><a href="#">Executive Order 10925</a> (1963)</p>	<p>Established the President's Committee on Equal Employment Opportunity. Required government contractors to "take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, creed, color, or national origin."</p>
<p><a href="#">Equal Pay Act</a> (1963)</p>	<p>Makes it illegal to pay men and women working in the same place different salaries for similar work.</p>
<p><a href="#">Civil Rights Act (CRA)</a> (1964)</p>	<p>Counters racial employment discrimination and introduces Title VII. Title VII prohibits employment discrimination against employees and applicants based on race, color, religion, national origin, and sex (including gender, pregnancy, sexual orientation, and gender identity).</p>
<p><a href="#">Executive Order 11246</a> (1965)</p>	<p>Prohibits federal contractors and federally assisted construction contractors and subcontractors, who exceed \$10,000 in government business in one year, from discriminating in employment decisions on the basis of race, color, religion, sex, or national origin.</p>
<p><a href="#">Lilly Ledbetter Fair Pay Act</a> (2009)</p>	<p>Overtured the Supreme Court's decision in <i>Ledbetter v. Goodyear Tire &amp; Rubber Co., Inc.</i>, 550 U.S. 618 (2007), which severely restricted the time period for filing complaints of employment discrimination concerning compensation.</p>

**Employee Rights**

The following rights stem from the various laws and actions described above.

<p>Not be harassed or discriminated against (treated less favorably) because of race, color, religion, sex (including pregnancy, sexual orientation, or gender identity), national origin, disability, age (40 or older) or genetic information (including family medical history).</p>
<p>Receive equal pay for equal work.</p>
<p>Receive reasonable accommodations (changes to the way things are normally done at work) that are needed because of their medical condition or religious beliefs, if required by law.</p>
<p>Expect that any medical information or genetic information that they share with their employer will be kept confidential.</p>
<p>Report discrimination, participate in a discrimination investigation or lawsuit, or oppose discrimination (for example, threaten to file a discrimination complaint), without being retaliated against (punished) for doing so.</p>

***Title VII of the Civil Rights Act of 1964: Scope and Limits***

Title VII of the [Civil Rights Act](#) (CRA) is one of the most important pieces of legislation passed in the pursuit of equal workforce opportunity in the U.S. It was successfully [advocated for by](#) Dr. Martin Luther King Jr. and many other civic, congressional, religious, and labor leaders. The purpose of Title VII of the act was essentially to “[level the playing field](#)” by making employers consider only objective, job-related criteria when making employment decisions. It deems classes such as race and ethnicity as “protected” after demonstrating a history of unequal treatment. In practice, Title VII must be considered when:

- Reviewing applications or resumes (i.e., by not eliminating candidates on the basis of a “foreign” last name)
- Interviewing candidates (i.e., by asking only job-related questions)
- Testing job applicants (i.e., treating all candidates equally and ensuring tests are not unfairly weighted against any group of people)
- Considering employees for promotions, transfers, or any other employment-related benefit or condition

Although Title VII led to great strides in the fight for equality in the American workforce, it still has certain limitations. For example, the law has been criticized for being too broad in scope and easy to deny in practice. It is extremely difficult to prove [disparate/discriminative](#) treatment, as the current process requires direct proof and passive forms of discrimination are commonly deemed [circumstantial](#).

Some critics have argued that Title VII was not intended to eradicate discrimination, but to balance the prohibition of the most obvious forms of discrimination, while maintaining the [status quo](#). Although the CRA explicitly states, “Title VII tolerates no racial discrimination, subtle or otherwise,” there is no [clear definition](#) of the term ‘discrimination.’ A working definition could help to account for actual human behavior and implicit biases.



## The State of Workforce and Education Data

Data is essential to assess workforce equity, whether at the federal, state, or local level. Workforce data can also provide a clear picture of a region or state's workforce needs and resources, while better aligning individuals with the needs of employers and high-quality jobs. This data is especially important to create a more equitable workforce, specifically by increasing opportunities for racial and ethnic minority populations and closing skills and digital literacy [gaps](#).

Workforce data can come from a variety of sources and encompasses many types of information. Recent years have seen progress in [breaking down data silos](#) around various types of workforce information systems, as well as greater transparency and accessibility among stakeholders. Relevant [information](#) can include education data from school and colleges, job training programs, skills, state unemployment records, real-time information from job posting sites, and more.

There is an ongoing push to improve the collection and quality of skills data. New forms of digital learning and employment records have the potential to improve education and hiring outcomes in the same way that electronic health records have improved healthcare delivery. [Labor market information](#) (LMI) provides regional context and reveals all sorts of information on the economy. LMI can include information on industry and occupations that drive local economies, historical and expected job counts, industry clusters and staffing patterns, and more. Analyzing this information alongside skills data can reveal where an individual can best succeed within that regional market.

Despite progress, there is still a need for greater education data on K-12 curricula and workforce development training in order to assess their usefulness in improving access to good jobs and job readiness. Additional data needed to improve workforce opportunities for underserved communities include workforce program data on government programs that have reporting requirements, and public benefits data.

There is a growing interest in state, regional, and national alignment on initiatives and policies to share data collected across agencies and longitudinal data systems. Collecting data from early childhood education to adult workforce performance has the power to reveal disparities and deficiencies, and develop new standards and data systems for a better, more equitable and thriving workforce.

## Federal Data Landscape

The federal government is a primary source of national labor, economic, and education data. Agencies such as the Bureau of Labor Statistics, the Census Bureau, and the Department of Education collect various types of information regarding the nation's workforce and education. However, systemic data-sharing obstacles create significant barriers to interagency collaboration, and thus corrective action to improve workforce equity.

The current process for sharing data across and within government agencies is generally slow and cumbersome. Data agreements are typically prepared and executed on a case-by-case basis, making getting approval a lengthy and painstaking process. This process stems from a [complex myriad](#) of legal, oversight, policy, and compliance regimes, as well as bureaucratic obstacles constraining the finalization of agreements. Some government agencies spend months negotiating with other agencies to obtain access to data, only to have to renegotiate at the beginning of the [next fiscal year](#), wasting significant time and resources.

Restrictions on certain high-value data with potentially sensitive information also have a significant impact on data use. For example, it is extremely difficult to access data on K-12 education, like the number of enrolled students and budget breakdowns. This is in part due to [privacy concerns](#) around students' personal information, outdated and misinterpreted federal laws, strict education department policies, and an abundance of state rules. Privacy requirements, coupled with a [lack of disaggregated data](#) provided by schools, makes obtaining and using such information even more of a challenge.

Another issue of equal importance is the need for [equitable data](#), that is, data “that allows for rigorous assessment of the extent to which government programs and policies yield consistently fair, just, and impartial treatment of all individuals.” Equitable data illuminates opportunities for targeted actions that can result in demonstrably improved outcomes for underserved communities. Such data is needed to [improve equity](#) in the workforce by uncovering gaps in workforce outcomes, identify opportunities to advance equity across workforce systems, and inform high-impact strategies for future employees to prosper.

For data to be considered equitable it must first be sufficiently disaggregated by race, ethnicity, gender, disability, income, veteran status, age, and other key demographic variables. For example, the right data can reveal trends such as whether Black women in different age cohorts receive appropriate salary adjustments or promotions. Unfortunately, providing disaggregated data is often a challenge, because demographic data is not widely collected when gathering certain types of workforce and education information.

Furthermore, bias can exist in the collection of demographic information. For example, while surveys are a direct way to collect demographic information from individuals, survey data can be biased if the people who choose to participate do not represent a population. Moreover, some individuals that are part of [communities subject to discrimination](#), such as immigrants or the LGBTQ+ community, can hesitate to report in surveys for fear that their data may be misused or create harm.

Adding to the challenge of federal data sharing and usage is the inconsistent adoption of data standards. Many efforts are being made at the federal level to develop data sharing agreements and standards, such as by the Chief Data Officer Council's Data Sharing Working Group. Nonetheless, many agencies have yet to integrate their use into data sharing practices, prolonging the misuse of data to improve government efficiency and equity.



Despite these numerous challenges, work is actively being done to bridge data-sharing gaps and improve the collection of high quality, non-biased data that represents the country's workforce and education system. For instance, the Department of Education Office for Civil Rights is currently in the process of [seeking approval](#) from the U.S. Office of Management and Budget (OMB) to mandate [Civil Rights Data Collection](#) (CRDC) for the 2023-24 school year. The purpose of CRDC is to ensure that all public local educational agencies and schools provide [equal education opportunity](#). If passed, all schools in U.S. public school districts will be required to participate. Given approval, CRDC will incorporate improvements from past CRDCs on how to refine and improve data elements for the collection.

## Federal Efforts to Improve Data

Current and recent administrations have acknowledged the need for improved [open data access](#) and its use to improve equitable policymaking. Over the past ten years, the federal government has supported making government-held data more accessible to agencies, the public, and entrepreneurs, while safeguarding the privacy of individuals. Congress has passed legislation affirming this focus on access and openness.

The Obama administration committed to opening government data to spur innovation, opportunity, and economic growth, starting with hiring [U.S. Chief Information and Chief Technology Officers](#). In May 2013, the president signed an [Executive Order](#) (EO) making open and machine-readable data the new default for government information. This EO was the first in a series of targeted efforts to improve the efficiency, effectiveness, and transparency of the federal government. The administration implemented a number of additional actions and initiatives, including launching [data.gov](#) and publishing the [U.S. Open Data Action Plan](#), to scale open data efforts for education, finance, and other sectors essential to the country's success.

These efforts helped lead to the [Foundations for Evidence-Based Policymaking Act](#), which directs federal agencies to make their data more open, accessible, and usable. Passed in 2019, the law requires the federal government to modernize its data management practices. The Act established a [Chief Data Officer \(CDO\) Council](#) to establish governmentwide best practices for the use, protection, dissemination, and generation of data. It aims to promote data-sharing agreements among agencies. The CDO Council specifically has a [Data Sharing working group](#) focused on data sharing across federal agencies, and disseminating well-written and diverse use cases and best practices for legal approaches to interagency data sharing. The knowledge garnered by these efforts, such as the guidelines laid out in the 2021 [Data Sharing Working Group report](#), can be leveraged by federal workforce and education entities as a model to improve methods to access data and facilitate interagency and intra-agency data sharing.



The Federal Data Strategy (FDS) is another useful guide for best practices on government data use. Established in 2019 by the OMB under the Trump administration, this framework provides a governmentwide vision for how agencies should manage and use federal data by 2030. [Memorandum M-19-18](#) calls for annual governmentwide action plans to guide federal agency implementation of the FDS, and aims to identify and prioritize actionable steps on an annual basis, with timeframes and responsible entities. Among the steps outlined by the [2021 Action Plan](#) is to “increase the sharing and use of data for federal decision making and operational needs.” This is being done by promoting information sharing through interagency councils, including the CDO Council, to identify and share what practices work best for different use cases. As a model, the [CDO Council's COVID-19 Data Coordination](#) Working Group identified opportunities to improve federal data access and data infrastructure, and processes to enhance data modeling and dashboard sharing across agencies.

A slate of executive orders from the Biden administration with the intention of promoting racial and gender equality, and equitable data-driven policymaking. The [Executive Order](#) on Advancing Racial Equity and Support for Underserved Communities through the federal government committed the government to actively pursuing equitable outcomes and interagency engagement across all policy areas. The Order describes the role data must play in tracking racial and social equity progress, while increasing government accountability. It also stood up the Equitable Data Working Group to examine existing federal data infrastructures and provide recommendations for their improvement. The Working Group [released a report](#) in early 2022 outlining needs and recommendations for equitable data use by the federal government. The recommendations include:

- Make disaggregated data the norm while protecting privacy
- Catalyze existing federal infrastructure to leverage underused data
- Build capacity for robust equity assessment for policymaking and program implementation
- Galvanize diverse partnerships across levels of government and the research community
- Be accountable to the American public

The recommendations developed by the Working Group serve as a guide for agencies, including workforce and education departments, as they work to diversify their data for equitable outcomes.

## Federal Data Sources

These efforts will help bolster and improve the many sources of federal data that now give insight into education and workforce opportunities. The most widely used sources include the following.

***Longitudinal Employer-Household Dynamics (LEHD).*** The [LEHD program](#) is part of the Center for Economic Studies at the Census Bureau. The LEHD program produces cost effective, public-use information combining federal, state, and Census Bureau data on employers and employees under the Local Employment Dynamics (LED) Partnership. State and local authorities increasingly need detailed local information about their economies to make informed decisions. The LED Partnership works to fill critical data gaps and provide indicators needed by state and local authorities.

***Minority Business Development Agency (MBDA).*** The [MBDA](#), within the U.S. Department of Commerce, is the only federal agency tasked with promoting the growth and competitiveness of minority-owned businesses. The Agency hosts a number of programs with MBDA grantees, business and specialty centers, offering customized business development and industry-focused

services to provide greater access to capital, contracts and markets. MBDA provides a repository of [racial and ethnic data](#) on minority businesses, including number of firms, annual revenue, number of jobs, entrepreneurial parity gaps, and more. It also provides publications, reports, technologies, and compiled statistical data helpful to minority business enterprises.

**National Center for Education Statistics (NCES).** The [NCES](#), within the U.S. Department of Education, collects, analyzes and makes available data related to education in the U.S. and other nations. The Center fulfills a congressional mandate to collect, collate, analyze, and report complete statistics on the condition of American education; conduct and publish reports; and review and report on education activities internationally. NCES also hosts the [Fast Facts](#) tool, which provides users with concise information on a range of educational issues, from early childhood to adult learning. Fast Facts draw from various published sources and are updated as new data become available.

**O\*NET.** The [O\\*NET](#) program, overseen by the U.S. Department of Labor, is the nation's primary source of occupational information. The O\*NET database is central to the program, containing hundreds of standardized and occupation-specific descriptors on nearly 1,000 occupations across the U.S. economy. The database is continually updated by surveying a broad range of workers from each occupation, and is publicly available at no cost.

The O\*NET [Content Model](#) provides a framework for identifying the most important types of workforce information and integrates them into workforce systems. The model includes in-depth indicators on worker and workforce characteristics, worker, experience, and occupational requirements, and occupation-specific information. These indicators are integrated into various O\*NET [datasets](#), including knowledge, skills and ability; education, experience, and training; interests, work values, work styles; and more.

While O\*NET is a comprehensive and valuable resource, it has not been updated often or rapidly enough to keep pace with new and emerging job categories, particularly in the tech sector. Improvements are being made to update the database on a more [regular basis](#).

**Small Businesses Administration (SBA).** The SBA connects entrepreneurs with lenders and funding to help them plan, start and grow their business. The administration provides data, reports, and tools via [Data.SBA.gov](#). These resources make information resources accessible, discoverable, and usable by the public to help fuel entrepreneurship, innovation, and scientific discovery, with the aim of improving Americans' lives and contributing to job creation.

**U.S. Bureau of Economic Analysis (BEA).** The BEA, part of the U.S. Department of Commerce, is the principal federal statistical agency providing accurate and objective data about the nation's economy. The Bureau also provides comprehensive [state employment data](#). The employment tables are released annually showing total full-time and part-time employment by industry, and wage and salary employment by industry.

**U.S. Census Bureau.** The [U.S. Census](#) has disaggregated information on employment and labor related data. The [Statistics of U.S. Businesses](#) series by the Census Bureau provides annual and static data including number of firms, number of establishments, employment, and annual payroll for most U.S. business establishments, tabulated by geographic area, industry, and enterprise employment size. Census also provides labor force statistics through the [American Community Survey \(ACS\)](#). The ACS collects information on employment and unemployment levels, weeks and hours worked, commuting information such as means of transportation, industry and occupation, and more. This data is collected by age, race, gender, and household composition, among other demographic factors. The [Survey of Income and Program Participation](#) provides labor force information as well but from fewer respondents.

This information includes weekly employment status for a period of 2-5 years, providing insight on how long individuals remain unemployed, how long workers remain with their employers, and why jobs or self-employed businesses end.

**U.S. Department of Labor (DOL).** DOL provides labor force participation rate maps, including state and county data on labor force participation rates for men and women and by presence and age of children. The Department also provides data in multiple categories: Labor Force Participation Rate by Sex, State and County; Women's Labor Force Participation Rate by Presence and Age of Children; Employment; and Earnings by Sex and Race: Exploring Equal Employment Opportunity Data Map.

**U.S. Bureau of Labor Statistics (BLS).** The BLS, which is part of DOL, has provided critical data for more than a century. The Current Employment Statistics (CES) program produces detailed industry estimates of employment, hours, and earnings of workers on nonfarm payrolls. CES' State and Metro Area program produces data for all fifty States, the District of Columbia, Puerto Rico, the Virgin Islands, and about 450 metropolitan areas and divisions. CES [National Estimates](#) produces estimates for the nation.

**U.S. Office of Personnel Management (OPM).** The U.S. Office of Personnel Management (OPM) serves as the chief human resources agency and personnel policy manager for the federal government. The Office administers the biennial Federal Employee Viewpoint Survey to assess how employees experience policies, practices, and procedures characteristic of their agency and its leadership. The results of this survey offer insights on successful workplace conditions and to what extent they are present in federal agencies. This data is further leveraged to allow managers to make improvements within their work units, measure the success of improvement initiatives, and identify aspects of the workplace where improvements should be made.

## Workforce Data Initiatives

In addition to federal programs and data sources, a number of state-level, intergovernmental, and nonprofit organizations have launched their own efforts to provide better data on education and the workforce.

**Black Wealth Data Center.** The [Black Wealth Data Center](#) was established to provide public and private sector leaders with actionable data intended to grow Black wealth. The Center's objective is to make relevant data available to help experts and policymakers address racial wealth disparities. This information can help inform them to develop and implement effective programs and policies to increase racial wealth equity. The Center provides data and resources on assets and debt, business ownership, education, employment, homeownership, and population demographics at local geographic levels.

**National Information Center for State Higher Education Policymaking and Analysis.** The [National Information Center for Higher Education Policymaking and Analysis](#) (NCHEMS) provides state policymakers and analysts with timely and accurate data and information for making sound, highly educated policy decisions. The Center provides comparative data for states and counties, and other useful contextual information on workforce and education. The NCHEMS allows users to generate [state profiles](#) and customized reports across different performance measures available on the website. Users can also [generate maps](#) and scatter plots at the county, state, and national levels using pre-built templates.

**OECD World Indicators of Skills for Employment (WISE) Database.** The [WISE database](#) provides a statistical snapshot of skills development in 214 countries. It contains 64 indicators in five broad areas: contextual factors, skill acquisition, skill requirements, skill mismatch, and

economic and social outcomes. WISE specifically has a wide range of U.S. focused indicators on agriculture, development, economy, education, energy, environment, finance, government, health, innovation and technology, jobs and society.

**T3 Innovation Network.** The U.S. Chamber of Commerce Foundation's [T3 Innovation Network](#) supports the digital transformation of the talent marketplace to make all learning count, enable competencies and skills to function like currency, and empower learners and workers with data.

The T3 Jobs and Workforce Data Network launched its Skills-Based Hiring and Advancement (SBHA) project to develop success metrics and a comprehensive set of end-to-end use cases for skills-based hiring and advancement. The project also explores the implications for members of the T3 Network, workgroups, projects, and the work of its other workforce partners and stakeholders. The project will promote open access to structured data on skills, jobs, job openings, and related industry data.

The Network also created the [Future of Data in K-12 Education](#) initiative, a three-phase, multiyear effort exploring the effectiveness of data and assessments in America's K-12 public schools. The pandemic provided an opportunity to reevaluate K-12 education data at a systems level to provide more meaningful, actionable data for educators, students, parents, and policymakers. The initiative is working to reassess the policies that provide crucial information for parents, policymakers, educators, and the business community. The Network will also help implement changes to policy and practice around data needed to ensure the K-12 system creates a qualified, equitable, and diverse workforce. This will support integration of new technologies and methodologies that could make assessment of student learning more efficient and effective.

**State Workforce and Education Alignment Project.** The [National Skills Coalition](#) created the [State Workforce and Education Alignment Project](#) (SWEAP) in 2015. The project aims to provide state leaders with systemwide information and data on workforce education and training programs. The initiative seeks to make it easier for state elected officials to see a comprehensive picture of how public workforce training programs perform in each state, including federal and state workforce and training programs, as well as traditional pathways from college to a career.

SWEAP assesses training programs that may fall under the Workforce Innovation and Opportunity Act (WIOA)—such as training for dislocated workers, adult basic education, and corrections employment and training programs, among others—to evaluate their efficiency and effectiveness at preparing a skilled workforce. The project is currently active in four states—[California](#), [Mississippi](#), [Ohio](#), and [Rhode Island](#)—all tasked with creating statewide workforce development systems in accordance with the WIOA.

**Workforce Data Quality Initiative.** The U.S. Department of Labor created the [Workforce Data Quality Initiative](#) (WDQI) to support development and enhancements to longitudinal administrative databases that integrate workforce data and education data. WDQI also emphasizes promoting improvements and the level of quality of these systems, in addition to increasing the accessibility of performance data (i.e., data reported by employment services and training providers). The [Statewide Longitudinal Data Systems](#) (SLDS) initiative, funded by the U.S. Department of Education, runs parallel to the WDQI and emphasizes the collection of workforce data alongside longitudinal education data. The WDQI and SLDS can use their longitudinal data systems to track the progress of individuals through school and into their work lives. They can also draw on such information to improve or expand upon state workforce longitudinal databases, and analyze their state of workforce opportunity.





## Issues, Data-Driven Opportunities, and Models

Even after the progress of recent years, people of color continue to face adversity in the workforce. Discrimination is still prevalent against protected classes of people. Although the CRA outlawed employment discrimination based on identity group, discrimination has persisted and become more difficult to eliminate. Indirect discrimination is increasingly replacing historically more aggressive forms. This sort of bias is especially pervasive in the workplace today. It can take the form of microaggressions and incivility, and can result in unfair treatment by colleagues and management. These forms of racism are difficult to prove and eliminate.

One of the biggest barriers to understanding the state of our workforce and achieving equal workforce opportunity is the lack of accurate, timely, and trusted data that represents the United States' dynamic economy and labor market. There is a need for improved labor market information, employment data for evidence-based equitable decision making, quality education and skills data, and information on the administration of government programs related to the workforce and economy. Furthermore, [data standards](#) need to be developed for use by sectors and individual companies to produce and collect timely data on jobs and employment. Data gaps can impede understanding and improvement of workforce opportunity. These gaps include the following.

**Demographics in labor data.** Demographic data involves information about groups of people according to certain attributes such as age, gender, or place of residence, and can include socioeconomic factors such as occupation, family status, or income. This information is vital in constructing a representative picture of a population, and more specifically, schools and their districts. Unfortunately, many federal sources have critical gaps in their data for this sort of information.

**Skills data.** The data used for [matching skills](#) to job opportunities still lacks accuracy. The labor market is changing rapidly and becoming more dynamic. Up-to-date skills data helps employees understand their skills and competencies help employers understand their hiring needs, and helps educators better align and understand how their curriculum prepares students for the real world. Workforce data will require better standardization of skills and training information to improve the understanding of such knowledge and experience.

New technologies like AI can leverage skills data in the structured matching of job requirements with the candidates' skills and competencies. This development can allow employers to find candidates best suited for roles and provide better opportunities for nontraditional talent in the labor market.

**Longitudinal education data.** The government lacks a clear picture of how the K-12 curriculum and college coursework is correlated with successful job outcomes. This is due to the lack of a standardized process of longitudinal data collection on individuals throughout their educational career. Information on local demographics and socioeconomic outcomes is also essential to assess disparities in education quality and equity.

**Quality comprehensive data on state high school curriculums.** Misalignment can occur between the coursework necessary to receive a high school diploma and courses to be eligible for college admissions and postsecondary education. Despite receiving a diploma, many students who complete high school are not college ready.

Despite these and other data challenges, many opportunities exist to use data in addressing key issues that make it difficult to achieve equity in workforce opportunity. These include bias, education and training access, use of skills records, and making federal data more useful and accessible.



#### Issue 1:

#### Unconscious bias in recruitment process and discriminative job requirements

Though they may not be conscious, attitudes and behaviors from implicit biases can lead to discriminatory workplace behaviors and actions. Implicit biases have a harmful impact on the recruitment, hiring, promotion, and treatment of minorities. Some indirect forms of employment discrimination include requiring academic degrees or formal training not necessary for a job function, specifying access to specific types of transportation (e.g. car ownership or access), height and weight requirements, and unclear job descriptions. Current [indirect indicators](#) of skills, such as traditional college degrees and work experience which lack sufficiently detailed information, prevent employers from tapping into broader and more diverse candidate pools, forcing them to pursue alternative paths.

**Opportunity.** New and emerging [technology](#) should be implemented in the job recruitment process to systematically decrease discriminatory consequences of unconscious bias. For instance, a company should be concerned about possible bias in their recruitment process if there are large drops in minority candidates from the initial screening stage to onsite interviews and skills assessment. Technology such as [machine learning](#) algorithms can be leveraged to identify these trends and help management make appropriate changes.

Diverse [open source recruitment](#) platforms are another tool that employers can use to promote equitable hiring practices. Some websites and job boards, such as [Jopwell](#), allow recruiters to advertise available roles to large diverse talent pools from a variety of different sources.

Organizations can also partner with leaders of minority communities and minority serving institutions to improve their hiring practices. For example, companies and agencies who are intentional about increasing diversity among their employees can look to Historically Black Colleges and Universities (HBCUs), which produce [nearly 20 percent](#) of all the Black college graduates. [HBCU Connect](#) tracks companies that make a particular effort to hire from HBCUs, and recognizes them in an annual Top 50 list.

### Case Study: Jopwell

Jopwell allows recruiters to advertise open roles to a talent pool that is full of racially and ethnically diverse candidates. Jopwell's aim is to represent and advance the careers of Black, Latino, and Native American students and professionals, and empower employers to build more diverse, equitable, and inclusive workplaces. The platform also hosts a [digital magazine](#) where employers can gain perspectives, resources, and advice from community leaders regarding equitable workforce practices, perspectives, and experiences.



#### Issue 2:

#### Access to education and training to qualify for good jobs

Education and labor market outcomes remain inequitable despite federal efforts to improve education and workforce training. High schools with high proportions of students from [low-income families](#) and students of color are less likely to offer advanced mathematics and science courses. A [report](#) by the Center for American Progress found that the high school curriculum necessary to receive a diploma is often not sufficient for admission to college.

This is especially true when high schools lack advanced coursework such as high-level math courses, laboratory science, and foreign languages, requiring students who wish to attend college to seek such knowledge elsewhere. Currently, only [52 percent of schools](#) with high student populations of color offer calculus, compared to 76 percent of schools with low student of color enrollment. Additionally, only [45 percent of high schools](#) with a high enrollment of students from low-income families offer calculus curricula. Under-resourced schools in low-income areas have a much more difficult time addressing these disparities, making this a matter of equity and accessibility.

Additionally, there is insufficient evidence that public workforce [training programs](#) are effective at improving wages and increasing access to good jobs. Businesses, the [primary source of funding](#) for workforce training, are investing less in such programs. Furthermore, there is an extreme lack of government funding for [workforce training](#) and there is high variance in quality, necessitating a new model for workforce training. Better data on employment and wage outcomes for people with [nondegree credentials](#) at the state level can also help governments to determine the value of credentials to workers and businesses.

**Opportunity.** Collaboration and coordination of high school and state college systems is essential to [better align](#) the requirements for high school graduation with the admissions requirements for state public university systems. States have already begun forming high school-to-college transition interventions. For example, many public university systems require completion of a [15-credit college-ready](#) coursework curriculum to receive a standard high school diploma.

States like Kentucky are also seeing positive outcomes from [statewide transition intervention](#) programs. The program, [Targeted Interventions](#) (TI), uses the [American College Test](#) (ACT) system as a universal screener for high school juniors, and uses scoring benchmarks to identify students who may not be on track to be college-ready after high school graduation. TI was found to [reduce student enrollment](#) in non-credit bearing remedial math courses in college, and increased the enrollment and number of passing students in gatekeeper math courses within the first year of college. Investment in longitudinal data collection and analysis of the effectiveness of such programs can strengthen, develop, and spread such interventions.

Substantial investment into skills and workforce training can also improve outcomes for disadvantaged people, non-degree holders, and the economy. This can be done through leveraging workforce data on [career and technical education](#) at community colleges, apprenticeships and work-based learning on job sites, job training at community organizations, and more. For example, businesses, educators, and trainers can use data on the long-term employment and wage outcomes of their students to measure program effectiveness and make improvements. Such data can also help to develop sector-based data standards on sector-based training. Data about all [postsecondary programs](#) is essential to understand the effectiveness of programs and determine whether they meet state criteria for quality. This data will increase accountability for businesses and other entities to provide quality and equitable training programs.

### Case Study: Quality Postsecondary Credentials of Value

The Louisiana Board of Regents adopted a standard definition for quality non-degree credentials in 2020 to support its [Master Plan for Higher Education](#). Proprietary and licensed institutions—institutions that are licensed by the Board of Regents and adhere to rules and regulations of state Proprietary School Advisory Commissions—must ensure their programs lead to successful equitable outcomes like better wages and attainment of good quality jobs. The requirements for a credential to be considered are:

- The provision of valid, reliable and transparent evidence of the competencies mastered, and conferment by a business, industry, and/or State of Louisiana entity
- Alignment to in-demand occupations as defined by the Louisiana Workforce Commission based on job demand, projected job growth and earnings
- Attainment of an occupation with a 20 percent wage premium over a high school diploma in Louisiana.
- Provision of evidence for employment and wage outcomes
- Above criteria attainment as a standalone credential, independent of another credentials



### Issue 3:

### Ineffective communication of employee skills and learning records

Skills and competencies are the most essential requirements for success in the labor market. They represent an individual's capabilities and thus are observed, measured, or otherwise assessed. The need for cognitive, technological, and interpersonal skills and competencies is [expected to increase](#) through the next decade, replacing many manual labor and basic skills. However, a [dual difficulty](#) exists in communicating and understanding employee skills and competencies in different contexts, such as industry or seniority of a position. Many who have skills sought by employers cannot communicate them effectively, or could represent them more clearly to employers. This is in part due to a lack of standards around skills and competencies. Such information can be effectively communicated via data and digital processes, like tagging where one can label data or information with key terms for easy analysis and identification.

**Opportunity.** Structured skill and competency data can drive progress on this issue. Such transferable data can be used to train [learning algorithms](#) to analyze text in ways that can help match applicants' skills to employers' needs. A recent [panel hosted by the Gates Foundation](#) highlighted this opportunity, but noted that better data is still needed to make this kind of skills-matching more accurate.

One solution may be the development of equity-driven [Learning and Employment Records](#) (LERs). LERs are digital records of an individual's skills, credentials, diplomas, and employment history. Government, employers, and employees should all work to employ LERs in practice, as they have the potential to strengthen and transform traditional resumes. Leveraging LERs in resumes adds verifiable data about an individual's achievements in real time. The federal government can play a vital role in codesigning and communicating the value of LERs to federal and state employers, and eventually to employers throughout the nation.

Artificial intelligence (AI) and machine learning tools can also be leveraged to prevent bias and inequity across systems and in decision-making processes. Both the Consumer Finance Protection Bureau and Federal Housing Finance Agency are [employing AI](#) to eliminate potential discrimination in their property valuations. Federal agencies can employ similar practices to identify where to strengthen fairness and equity in their own teams and practices. Agencies should also start to develop decentralized platforms of interagency data to improve accessibility and awareness of existing data.

### Model: [Competency Framework Extraction Module](#)

The T3 Innovation Network works to digitally transform the talent marketplace via workforce and education data. T3's Competency Framework Extraction Module (CFEM) is an open-source tool that can convert skill and competency data into a variety of common, digital, machine-actionable formats used by learning, training, and credentialing software. Additionally, the Open Competency Framework Collaborative (OCF Collab) is an open member trust network focused on making competency and skill frameworks readily available to people and machines through agreed-upon search, retrieval, and retention rules.



#### Issue 4: [Equitable data within federal sources](#)

Demographic data are often missing or incomplete due to the voluntary manner in which it is primarily collected. Respondents may feel hesitant to provide this information due to mistrust of what collectors will do with this information (e.g., denying of a role, unsuccessful application to a school, or withholding of public services). Some also have fears about data confidentiality. Demographic information is needed to garner an accurate representation of a community, school district, and workforce population. This information is essential when analyzing racial disparities in employment or school district funding. It is also necessary when assessing a change in outcomes from interventions to improve fairness and equity. Without demographic information, it is much more difficult to uncover bias within an institution.

**Opportunity.** The Equitable Data Working Group was tasked with prioritizing equitable data within federal data sources, and provides guidance in a [recent report](#) on how the government can go about this. The report outlines high-priority goals for equitable data. These include generating disaggregated statistical data to characterize the experiences of historically underserved groups using survey data; increasing nonfederal research and community access to disaggregated data for the evidence-building that supports equity efforts; and conducting robust equity assessments of federal programs to identify areas for improvement. The Working Group also provides case studies to identify what progress could be made with existing program data to answer equity-centered questions around economic recovery and other key areas. This report provides guidance for all federal workforce and education offices to improve equity in their data sources and policy decisions.





## Issue 5: Federal data sharing

Interagency and intra-agency data sharing is essential for individual agencies to develop data-driven policy that can improve equitable workforce outcomes. However, the lack of interoperable data, legal barriers, and legacy data systems make it extremely difficult for this sharing to take place in an efficient manner. Standardized methods for sharing high-value data and data request templates across federal agencies can streamline this process and can drive new information technology solutions to enable data sharing.

**Opportunity.** Standards development and widespread dissemination are essential to improving data sharing across and within federal agencies. A core collection of agency templates and [standard clauses](#) can be used to draft data use agreements (DUA). Many DUAs already use similar formats, clauses, and language. A collection of templates and standard clauses that agencies can access when building their own agreements would enable chief data officers and other federal data users to draft new agreements more quickly, with already approved language. Maintaining flexibility and customization of these templates is vital to maximizing their application to various agreements. Both the [Centers for Disease Control and Prevention](#) and [U.S. Geological Survey](#) have developed their own sample data sharing agreements. These documents can be used as templates by other federal entities to create their own agreements.

# CONCLUSION

A long history of discrimination and systemic inequity in the U.S. has resulted in major disparities in workforce opportunities for racial and ethnic minorities. Key legislative decisions such as the Civil Rights Act and Lilly Ledbetter Fair Pay Act have led to great strides towards closing gaps in workforce outcomes; standardized, high quality, and timely data will be essential to identifying disparities and making targeted solutions.

A number of government programs and organizations are investing in infrastructure to support longitudinal data collection on education, employment statistics, and skills information. Despite such progress, further initiatives can coordinate efforts and bring lasting change. Current data and technology-driven opportunities include the following.

**Technology**, such as machine learning, can create more diverse hiring pools and identify bias in hiring trends. This can help decrease the impact of unconscious bias in hiring decisions and indirect discrimination. Companies including Humana and Capital One currently use AI and machine learning in their hiring processes to navigate through thousands of applications, organize interviews, and conduct initial screenings.

**Greater data collection** can guide the development and improvement of existing school-to-college transition programs and improve data on postsecondary training outcomes; better data collection will support improved access to quality education and training to qualify for good jobs. States such as [Kentucky and New York](#) have implemented data programs in their public schools, and are already seeing improved student outcomes.

**Targeted investment** can support the collection and use of learning and employment records, and can leverage supervised learning algorithms to strengthen effective communication of employee skills and records of learning. The T3 Innovation Network demonstrates a successful model for the collection and use of LERs for better educational and employment opportunities. T3's [LER Resource Hub](#) documents data standards that support interoperability across stakeholder systems, technical protocols for linking data to individuals, and competency data for populating content in the LER.

Inequities in the workforce for Black, Indigenous, and Latino Americans are rooted in a long history of racial discrimination. To learn more about the history of systemic workforce Inequities, go to <http://reports.opendataenterprise.org/Workforce-Data-Equity-Appendix.pdf>.

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**Temilola Afolabi** is a Senior Research Associate at the Center for Open Data Enterprise (CODE). In this role, Temi is responsible for leading research efforts on how open data can be applied for various social good efforts, writing reports with actionable recommendations for the federal government, and supporting Roundtable logistics and stakeholder engagement. She also co-leads CODE's Open Data for Racial Equity program, where she works to identify ways to advance racial equity in fair housing, criminal justice, environmental justice, health care, and the workforce using open data. Temi received her Bachelor's degree at the University of Maryland College Park, where she studied International Government and Politics, with a Minor certificate in International Development and Conflict Management.



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