



AN ANALYSIS OF NEVADA'S PRE- AND POST-PANDEMIC LABOR FORCE PARTICIPATION RATE

Trends Analysis

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Table of Contents

Introduction.....	1
Labor Force Participation Rate Explained.....	2
Explaining the Drop in Nevada’s Labor Force Participation Rate—A Methodology.....	3
Key Findings.....	4
Unemployment, Employment, and Wages in Nevada’s Leisure and Hospitality Sector	5
An Analysis of Nevada Department of Employment, Training and Rehabilitation Wage Data	9
Education, Migration, and Age of Nevada’s Labor Force.....	15
Overview of Nevada’s Population and Labor Force	15
Education and Labor Force Participation	17
Education, Migration, and Labor Force Participation	19
Labor Force Participation of Nevada’s Older Population	22
Nevada’s Older Population, Migration, and Labor Force Participation.....	24
Conclusion	25
Further Research Questions to Explore	27
Additional Future Analysis.....	28
Appendix A. Abbreviated Terms and Definitions	30
Appendix B. Nevada P-20 to Workforce Research Data System (NPWR).....	31
Appendix C. Further Explanation of Missing Data from NPWR System	33

INTRODUCTION

The COVID-19 pandemic sent shocks through the global economy, inducing a recession that not only was felt unevenly across different geographies, but also for which certain effects have persisted well after the initial crisis waned. The contrast between the unemployment rate and the labor force participation rate (sometimes referred to as LFPR) in Nevada exemplifies this tension. In April 2020, Nevada recorded an unemployment rate of **30.6 percent**.¹

As of February 2023, however, the unemployment rate had fallen to **5.5 percent** and the state had more than recovered the total number of jobs lost during the pandemic, but not uniformly across sectors. For example, as recently as February 2023, leisure and hospitality employment had not yet returned to its pre-pandemic peak of 360,400.²

Conversely, Nevada's labor force participation rate—the number of individuals employed or seeking employment divided by the number of individuals ages 16 and over (excluding certain populations, such as those in the military or incarcerated)—decreased by **2.9 percentage points**, from **64.3 percent** in February 2020 to **61.4 percent** in February 2023.³ According to the U.S. Bureau of Labor Statistics (BLS), this represented the third-largest drop among all states following the COVID-19 pandemic (after seasonally adjusting the labor force participation rate).

When ranked against other states, Nevada's labor force participation rate worsened, ranking **20th** in February 2020 and **32nd** in February 2023, as shown in **Figure 1** below. Over the same time period, the labor force participation rate increased in eight states: Alaska, Illinois, Louisiana, New Jersey, North Dakota, Oklahoma, Oregon, and Utah.⁴ As of October 2023, Nevada's LFPR was **62.1 percent**, still below its pre-pandemic level.⁵

In equal partnership, the University of Nevada, Las Vegas (UNLV) Lee Business School's Center for Business and Economic Research (CBER) and the Kenny Guinn Center for Policy Priorities used the Nevada P-20 to Workforce Research Data System (NPWR) to attempt to answer in this report the question as to why Nevada experienced a significant drop in the labor force participation rate after the COVID-19 pandemic.

¹ U.S. Bureau of Labor Statistics, "Unemployment Rate in Nevada [NVUR]," retrieved from FRED, Federal Reserve Bank of St. Louis, accessed April 2023, <https://fred.stlouisfed.org/series/NVUR>.

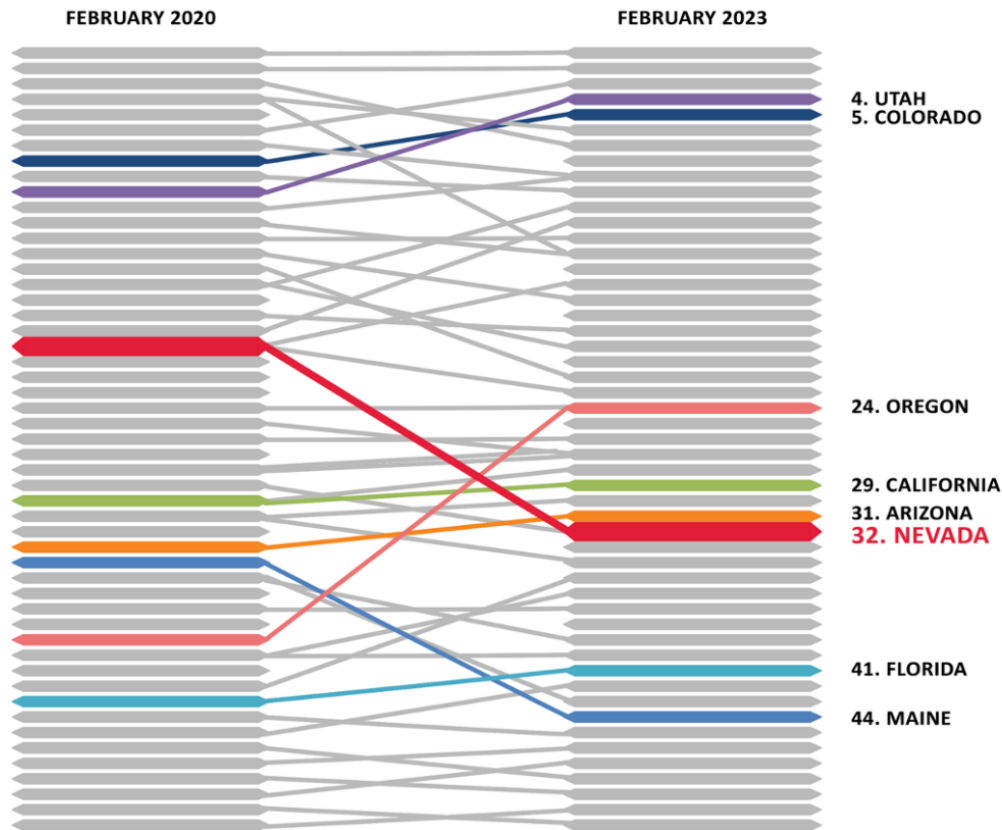
² U.S. Bureau of Labor Statistics, "Quarterly Census of Employment and Wages," accessed November 2023, https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables.

³ U.S. Bureau of Labor Statistics, "Release Tables: Labor Force Participation Rate," retrieved from FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/release/tables?eid=784070&rid=446>.

⁴ U.S. Bureau of Labor Statistics, Release Tables: Labor Force Participation Rate, retrieved from FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/release/tables?eid=784070&rid=446>. Seasonally adjusted.

⁵ U.S. Bureau of Labor Statistics, "Labor Force Participation Rate for Nevada [LBSSA32]," retrieved from FRED, Federal Reserve Bank of St. Louis, accessed August 2023, <https://fred.stlouisfed.org/series/LBSSA32>.

Figure 1. Labor Force Participation Rate Overall Ranking for Nevada and Selected States (February 2020 – February 2023)



Source: U.S. Bureau of Labor Statistics

Labor Force Participation Rate Explained

The labor force participation rate represents the fraction of the civilian noninstitutional population, ages 16 and older, that is working or looking for work. Moreover, the LFPR captures people beyond those counted in the civilian labor force, or those individuals who do not meet the strict criteria for classification as employed or unemployed. In theory, these individuals could be working, but they are not (or are not counted as part of the labor force). Labor force exits may be a result of family responsibilities—such as if someone becomes a stay-at-home parent—or conditions based on health or disability. These exits also can occur when someone would like to work but has given up looking for a job.⁶ Such a person—defined as a “discouraged worker”—is neither unemployed nor part of the labor force.⁷ Depending on the survey, there may be some gaps in those counted, as “1099 contract workers” may not be captured fully in the data.

⁶ Kaitlyn Hoevelmann, “The Labor Force Participation Rate, Explained,” *Federal Reserve Bank of St. Louis: Open Vault Blog*, May 5, 2023 (updated), <https://www.stlouisfed.org/en/open-vault/2020/august/labor-force-participation-rate-explained>.

⁷ Kaitlyn Hoevelmann, “The Labor Force Participation Rate, Explained,” *Federal Reserve Bank of St. Louis: Open Vault Blog*, May 5, 2023 (updated), <https://www.stlouisfed.org/en/open-vault/2020/august/labor-force-participation-rate-explained>.

By considering those individuals who are not in the labor force (or were prior to the pandemic but are no longer), the labor force participation rate can be useful in isolating structural changes that shape labor force dynamics. Long-term declines may indicate that workers have exited the workforce, the contributors of which may be retirements and aging workers, among others. Under these conditions, families that count on a worker's wages may face financial insecurity and uncertainty, while employers may not be able to fill positions and, therefore, may increase wages. Collectively, this may result in diminished aggregate economic activity in the form of a reduction in gross domestic product (GDP) compared to an economy's long-run potential. That is, a lower LFPR means that an economy's potential output is lower than it should be (absent an increase in productivity).

Nevada's decline in its labor force participation rate between February 2020 and February 2023 merits sustained attention particularly given that its civilian labor force decreased by **245 individuals**, while the state population grew by an additional **87,001 residents** over approximately the same time period (between 2019 and 2022).⁸ In other words, from the pre-pandemic period to the post-pandemic period, Nevada netted just over **three new workers** for every **100 new residents**.

Explaining the Drop in Nevada's Labor Force Participation Rate—A Methodology

In conducting the analysis, CBER and the Guinn Center sought explanations that may or may not have contributed to this observed decline. Our teams used the following NPWR data:

- Quarterly employer wage reporting by county for 2019 through 2022; and
- North American Industry Classification System (NAICS) sectoral information (quarter and year).

CBER and the Guinn Center supplemented the NPWR data with that from the following publicly available sources:

- U.S. Census Bureau, American Community Survey (ACS) 1-year estimates, 2019 and 2021;⁹
- U.S. Census Bureau, ACS 1-year Public Use Microdata Sample (PUMS), 2019 and 2021;¹⁰ and
- U.S. Bureau of Labor Statistics, Quarterly and Monthly Census of Employment and Wages, February 2019 through February 2023.^{11, 12}

⁸ U.S. Bureau of Labor Statistics, "Civilian Labor Force in Nevada [NVLFN]," retrieved from FRED, Federal Reserve Bank of St. Louis, accessed November 2023, <https://fred.stlouisfed.org/series/NVLFN>; and U.S. Census Bureau, "Resident Population in Nevada [NVPOP]," retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/NVPOP>.

⁹ U.S. Census Bureau, "American Community Survey 1-Year Estimates: 2019 and 2021," accessed April 2023, <https://www.census.gov/programs-surveys/acs>.

¹⁰ U.S. Census Bureau, "American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021," accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

¹¹ U.S. Bureau of Labor Statistics, "Civilian Labor Force in Nevada [NVLF]," retrieved from FRED, Federal Reserve Bank of St. Louis, accessed April 2023, <https://fred.stlouisfed.org/series/NVLF>.

¹² Note: We chose February 2019 through February 2023 to standardize the observation period of BLS data to 4 years.

Our teams compared the size of the leisure and hospitality employment sector to that of the overall civilian labor force (individuals ages 16 and older who are employed or unemployed, excluding certain populations—such as those in the military or incarcerated) from 2020 to 2022. We also compared the unemployment rate for leisure and hospitality to the overall statewide unemployment rate. Where data were available, we evaluated specific trends in Nevada’s two largest counties—Clark County and Washoe County—in 2019 and 2021. In addition, using Census Bureau data, we identified the characteristics of in- and out-migration for Nevada between 2019 and 2021 by age, gender, education, and industry. This allowed us to examine the relationship between labor force participation and the in-state and out-of-state migration demographics, as well as education data for domestic migrants ages 21 to 64. We additionally tested the relationship between the share of state population who are 65 years and over and labor force participation, and we considered more closely the decline in labor force participation rates in Nevada for those ages 55 to 64.

Key Findings

- Nevada’s and Clark County’s reductions in labor force participation post-pandemic appear tied to both the economy and education. That is, the decrease in Nevada’s labor force participation rate may be a function of the interplay between comparatively low levels of educational attainment and the mix of economic concentration in leisure and hospitality and underdevelopment in other sectors.
- Post-pandemic, over **one in five jobs** in Nevada and **one in four jobs** in Clark County are still tied to leisure and hospitality, the latter of which exceeds its tourism-dependent peers, such as Orlando, Florida, and New Orleans, Louisiana.
- The leisure and hospitality sector, which accounts for over **22.7 percent** of employment in Nevada, recorded the largest decrease in labor force participation rates (for those ages 16 and over), from **88.3 percent** in 2019 to **82.4 percent** in 2021.
- Nevada’s labor force participation for those with less than a bachelor’s degree (ages 21 to 64) declined from **75.4 percent** in 2019 to **74.3 percent** in 2021. Labor force participation for those with a bachelor’s degree or higher, however, increased slightly during this time— from **83.8 percent** in 2019 to **83.9 percent** in 2021.
- In 2021, while **38.5 percent** of domestic in-migrants to Nevada ages 21 to 64 held a bachelor’s degree or higher (an increase from 2019), this rate placed Nevada in the **bottom 10 states** for attracting college-educated workers. That is, Nevada attracts relatively less educated in-migrants when compared to other states. In 2021, among those who moved to other states in the United States (ages 21 to 64), more than half (**50.2 percent**) held a bachelor’s degree or higher.
- Nevada’s lower labor force participation rate in 2021 partly reflected a slightly larger share of the population ages 65 and over compared to 2019. Nevada’s share of the population ages 65 and over was **16.5 percent** in 2021, as compared to the 2019 share of **16.2 percent**. This is an increase of **4.3 percent (21,224 people)** and, specifically, **497,450** in 2019 versus **518,674** in 2021.

- Of this older population, about **16,000 people** were new residents from other states or Washington D.C., which explains **12.2 percent** of total domestic in-migrants in 2021. Nevada attracted a larger proportion of the population ages 65 and over in 2021 compared to its **11.0 percent** of total new residents for 2019.
- Increases in the population ages 65 and over are associated with decreases in the LFPR. Simple regression results for 2021 indicate that the proportion of the population ages 65 and over can explain **18.0 percent** of the variation in Nevada’s LFPR.
- In addition, Nevada has reported some of the lowest labor force participation rates among those between the ages of 55 and 64. Looking at this indicator, Nevada ranked **41st** and **42nd** out of the 50 states and Washington D.C., respectively, in 2019 and 2021.
 - The labor force participation rate for individuals between the ages of 55 and 64 declined from **62.2 percent** in 2019 to **61.8 percent** in 2021.
 - Nevada ranked among the lowest labor force participation rates for educated workers between the ages of 55 and 64 from 2019 to 2021.
 - Nevada also experienced a decrease in the LFPR among less educated workers (non-college degree holders) between the ages of 55 and 64, from **60.5 percent** in 2019 to **59.6 percent** in 2021.
 - This decline is comparable to that for individuals between the ages of 21 and 54, with the LFPR of non-college degree holders declining from **79.5 percent** in 2019 to **78.5 percent** in 2021. This may suggest that the decline in the LFPR among persons between the ages of 55 and 64 could have been influenced by their education levels. These levels of educational attainment may have limited their job-seeking opportunities during the pandemic and resulted in exits (in the form of early retirements) from the labor force temporarily or permanently.

UNEMPLOYMENT, EMPLOYMENT, AND WAGES IN NEVADA’S LEISURE AND HOSPITALITY SECTOR

Nevada’s dependence on face-to-face jobs, such as casino gaming, food and retail service, accommodation, and entertainment, left it particularly vulnerable to the economic shocks of the COVID-19 pandemic—which prompted the temporary closure of many businesses within these industries. Three years after the start of the pandemic in 2020, over **one in five jobs** in Nevada and **one in four jobs** in Clark County are still tied to leisure and hospitality. This reliance exceeds job concentrations recorded by Nevada’s tourism-dependent peers, such as Orlando, Florida, and New Orleans, Louisiana.¹³ Nearly **thirty percent (29.0 percent)** of personal consumption expenditure, a component of GDP, is generated from recreational services in Clark County.¹⁴ This

¹³ U.S. Bureau of Labor Statistics, “Quarterly Census of Employment and Wages: Clark County (NV), Orange County (CA), and Orleans Parish (LA),” accessed April 2023. https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables.

¹⁴ UNLV Center for Business and Economic Research, “Southern Nevada Population Forecast, 2023,” May 2023, <https://cber.unlv.edu/wp-content/uploads/2023/05/2023-CBER-Population-Forecasts.pdf>.

concentration in one or two industries is unique in comparison to Las Vegas’s tourism-driven metropolitan counterparts in Florida and Louisiana.

Statewide, the negative economic impacts from the pandemic were perhaps most pronounced in Clark County. During the peak of pandemic closures, the U-3 unemployment rate (those unemployed and seeking work) in Clark County reached **34.0 percent**, which is more than **one in three workers**.¹⁵ Statewide, the U-3 unemployment rate peaked at a historic high of **30.6 percent** in April 2020.¹⁶ Three years later, Nevada’s leisure and hospitality industry has struggled to fully recover from the initial and lingering impacts of the pandemic. For instance, the number of those employed in leisure and hospitality in Nevada and Clark County only recently surpassed their pre-pandemic peaks of **360,400 workers** and **297,300 workers**, respectively, in June 2023.¹⁷

National data reflect struggles within the leisure and hospitality sector occurring not just within Nevada, but also more broadly throughout the United States. For instance, in April 2020 the U-3 unemployment rate in the United States for leisure and hospitality workers was **39.3 percent**, similar to Nevada and Clark County’s record high unemployment rates at that time.¹⁸ As of February 2023, the United States’ unemployment rate for this industry sector had declined to **5.2 percent** (not seasonally adjusted). For further comparison, **Figure 2** below displays the unemployment rates for Nevada, Clark County, and leisure and hospitality workers nationwide.¹⁹

In addition to unemployment rates, our analysis of the number of employed individuals provides additional insights on the trajectory of Nevada’s path to economic recovery post-pandemic. Statewide, **94,400 more people** were employed (nonfarm) in Nevada in February 2023 than February 2020. The Reno-Sparks Metropolitan Statistical Area (MSA) employed **20,600 more people** and Las Vegas-Henderson-Paradise MSA saw an employment increase of **62,400 more people** over the same time period (seasonally adjusted).²⁰

¹⁵ U.S. Bureau of Labor Statistics, “Unemployment Rate in Clark County, NV [NVCLAR3URN],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed August 2023, <https://fred.stlouisfed.org/series/NVCLAR3URN>. Not seasonally adjusted.

¹⁶ U.S. Bureau of Labor Statistics, “Unemployment Rate in Nevada [NVUR],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed April 2023, <https://fred.stlouisfed.org/series/NVUR>. Seasonally adjusted.

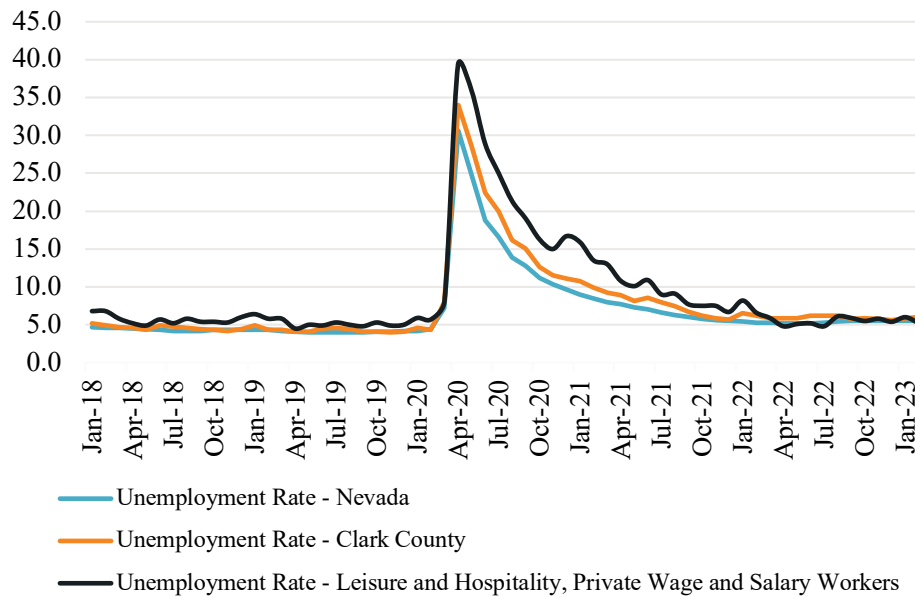
¹⁷ U.S. Bureau of Labor Statistics, “All Employees: Leisure and Hospitality in Nevada [NVLEIHN],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed November 2023, <https://fred.stlouisfed.org/series/NVLEIHN>. Not seasonally adjusted; U.S. Bureau of Labor Statistics, “All Employees: Leisure and Hospitality in Las Vegas-Henderson-Paradise, NV (MSA) [LASV832LEIHN],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed November 2023, <https://fred.stlouisfed.org/series/LASV832LEIHN>. Not seasonally adjusted.

¹⁸ U.S. Bureau of Labor Statistics, “Unemployment Rate - Leisure and Hospitality, Private Wage and Salary Workers [LNU04032241],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed August 2023, <https://fred.stlouisfed.org/series/LNU04032241>

¹⁹ Note: The unemployment rates for Nevada are seasonally adjusted. The unemployment rate for Clark County and U.S., leisure and hospitality, private wage and salary workers, is not seasonally adjusted.

²⁰ U.S. Bureau of Labor Statistics, “All Employees: Total Nonfarm in Nevada [NVNA],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/NVNA>; U.S. Bureau of Labor Statistics, “All Employees: Total Nonfarm in Reno, NV (MSA) [RENO932NA],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/RENO932NA>; and U.S. Bureau of Labor Statistics, “All Employees: Total Nonfarm in Las Vegas-Henderson-Paradise, NV (MSA) [LASV832NA],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/LASV832NA>.

Figure 2. Unemployment Rates for Nevada, Clark County, and United States' Leisure and Hospitality, Private Wage and Salary Workers (January 2018 – January 2023)



Source: U.S. Bureau of Labor Statistics

Certain sectors in Nevada have fared better (or worse) in their post-pandemic recoveries. For instance, government employment in Clark County, which includes those who work in public education, grew by **2,100 individuals** between February 2020 and February 2023. Nevada’s trade, transportation, and utilities sector initially dipped then quickly rebounded, exceeding its pre-pandemic peak with **18,000 more jobs** in February 2023 than it had in February 2020.²¹ Contrasting this growth, the number of those employed in the leisure and hospitality sector in Nevada and Clark County only just recently surpassed their pre-pandemic peaks of **360,400 workers** and **297,300 workers**, respectively, in June 2023.²²

The comparatively slower growth seen in the recovery of Nevada’s leisure and hospitality sector could be attributable to several factors. One consideration we briefly explore in this report is the possibility that lower wages in the leisure and hospitality sector may encourage potential employees to look elsewhere for jobs earning higher pay. These comparatively lower earnings are displayed on a national scale in **Table 1** below.

Despite having comparatively lower wages, the leisure and hospitality sector is one of the few industry categories in which wages have kept pace with inflation during recent years. Average hourly earnings for leisure and hospitality workers nationally increased between February 2020 to

²¹ Nevada Department of Employment, Training and Rehabilitation, “All Employees, Clark County Nevada; Education and Healthcare, Government, and Trade, Transportation, and Utilities,” accessed July 2023, <https://cber.unlv.edu/> (see graphs on homepage).

²² Nevada labor force participation rate is not seasonally adjusted.

February 2023 from **\$16.85** to **\$20.79** or **23.4 percent**.²³ This increase in wages may reflect demand for workers in this industry. Nationally, job openings for all nonfarm job seekers in February 2023 equaled **1.7 job openings** per job seeker.²⁴ In the same reporting month, the ratio of leisure and hospitality job openings per job seeker was higher, at **2.1 job openings** per job seeker.²⁵

Table 1. U.S. Average Hourly Earnings (February 2020 and February 2023)

Industry	Average Hourly Earnings (SA)	
	February	February
	2020	2023
Total private	\$28.52	\$33.11
Mining and logging	\$34.72	\$37.11
Construction	\$31.31	\$35.84
Manufacturing	\$28.24	\$31.68
Trade, transportation, and utilities	\$24.68	\$28.61
Information	\$43.03	\$47.91
Financial activities	\$36.85	\$42.55
Professional and business services	\$34.41	\$39.77
Education and health services (private)	\$27.49	\$32.63
Leisure and hospitality	\$16.85	\$20.79
Other services	\$25.09	\$29.55

Source: U.S. Bureau of Labor Statistics²⁶

²³ Headline consumer price index (CPI) of 16.4 percent since February 2020. U.S. Bureau of Labor Statistics, “Consumer Price Index for All Urban Consumers: All Items in U.S. City Average [CPIAUCSL],” retrieved from FRED, Federal Reserve Bank of St. Louis, Accessed August, 31, 2023, <https://fred.stlouisfed.org/series/CPIAUCSL>.

²⁴ U.S. Bureau of Labor Statistics, “Job Openings: Total Nonfarm [JTSJOL],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/JTSJOL>; and U.S. Bureau of Labor Statistics, “Unemployment Level, Thousands of Persons, Monthly, Seasonally Adjusted [UNEMPLOY],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/UNEMPLOY>.

²⁵ U.S. Bureau of Labor Statistics, “Job Openings: Leisure and Hospitality [JTS7000JOL],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/JTS7000JOL>; and U.S. Bureau of Labor Statistics, “Unemployment Level - Leisure and Hospitality, Private Wage and Salary Workers [LNU03032241],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/LNU03032241>.

²⁶ U.S. Bureau of Labor Statistics, “Table B-3. Average Hourly and Weekly Earnings of All Employees on Private Nonfarm Payrolls by Industry Sector, Seasonally Adjusted,” February 2020, accessed July 2023, https://www.bls.gov/news.release/archives/empsit_05082020.htm & U.S. Bureau of Labor Statistics, “Table B-3. Average Hourly and Weekly Earnings of All Employees on Private Nonfarm Payrolls by Industry Sector, Seasonally Adjusted,” February 2023, accessed July 2023, https://www.bls.gov/news.release/archives/empsit_03102023.htm.

In summary, our analyses of unemployment rates, employment numbers, and wages illuminate the role Nevada’s reliance on its leisure and hospitality sector has played in the state’s post-pandemic labor force. In the next section, we complete additional wage analyses to further contextualize the role this indicator may have played on Nevada’s path to post-pandemic economic recovery.

AN ANALYSIS OF NEVADA DEPARTMENT OF EMPLOYMENT, TRAINING AND REHABILITATION WAGE DATA

To examine whether Nevada’s total wages were driven by the leisure and hospitality sector, we analyzed raw Quarterly Census of Employment and Wage (QCEW) data for Nevada from the Nevada Department of Employment, Training and Rehabilitation (DETR). The Center for Business and Economic Research at UNLV receives the quarterly raw data for Nevada from DETR via a secure file exchange site. Data utilized in our analyses includes all establishments in Nevada and detailed information related to these establishments, such as their unemployment insurance account number, reporting unit number, company name, address, 6-digit North American Industry Classification System (NAICS) code, ownership, number of employees, total wages, et cetera.

Nevada’s top private sectors for employment are leisure and hospitality, healthcare and social assistance, retail trade, administrative services, construction, and transportation and warehousing. Except for construction, healthcare, and social assistance, annualized average wages for the top sectors were below the average wage for total nonfarm payrolls of **\$64,677** in the fourth quarter of 2022, which is the last quarter of data we obtained.²⁷ Therefore, the top sectors only accounted for **52.6 percent** of total wages, despite their contribution to **64.6 percent** of total employment in the fourth quarter of 2022.

These sectors—leisure and hospitality, healthcare and social assistance, retail trade, administrative services, construction, and transportation and warehousing—explained **52.9 percent** of the total wage and **64.7 percent** of total employment in the first quarter of 2010, which was similar to the fourth quarter of 2022. Leisure and hospitality’s employment share declined from **28.0 percent** of total employment to **22.7 percent**, but other low-paying sectors grew substantially, mostly replacing the declined share of the leisure and hospitality sector.²⁸

The proportions of employment contributed by leisure and hospitality and retail trade have declined over time, but they remain among the top sectors for employment in Nevada. Employment in leisure and hospitality and retail trade explains **22.7** and **10.2 percent**, respectively, of total Nevada employment in the fourth quarter of 2022 (**Figure 3**).²⁹

²⁷ U.S. Bureau of Labor Statistics, “Average Hourly Earnings of All Employees: Total Private in Nevada [SMU32000000500000003],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed August 2023, <https://fred.stlouisfed.org/series/SMU32000000500000003>.

²⁸ Nevada Department of Employment, Training and Rehabilitation, “Quarterly Census of Employment and Wage (QCEW), 2010Q1 – 2022Q4,” accessed June 2023. Note: CBER receives the quarterly raw data for Nevada from the Department of Employment, Training and Rehabilitation (DETR) via a secure file exchange site.

²⁹ Raw Quarterly Census of Employment and Wage (QCEW) data for Nevada which CBER receives directly from the Department of Employment, Training and Rehabilitation (DETR) via a secure file exchange site.

Due to lower industry average wages, however, the proportion of wages contributed by leisure and hospitality and retail trade only accounted for **15.3** and **6.5 percent**, respectively, of total wages in Nevada. The proportions of employment in administrative services and transportation and warehousing, however, increased over time, from **6.2 percent** and **4.5 percent** in the first quarter of 2010 to **7.5 percent** and **6.7 percent** in the fourth quarter of 2022, respectively. The proportion of administrative wages increased from **4.3 percent** to **5.3 percent** over the same period.

As of the third quarter of 2022, the wage proportion for transportation and warehousing remained below its employment proportion, as shown in **Figure 3**. We identify two possible explanations for this trend. First, a larger population of lower-wage workers (especially workers in the leisure and hospitality industry) initially lost their jobs due to the pandemic. This may have resulted in the wage proportion for transportation and warehousing (another sector on the lower end of the wage scale) rising less than its employment share.

Second, the transportation and warehousing sector may have experienced a large influx of workers from layoffs in the lower-paying sectors. This may have resulted in transportation and warehousing wages being lowered. That is, if employees moved from employment in the leisure and hospitality sector to jobs in the retail trade and transportation and warehousing industries, they may have accepted lower wages than otherwise is typical in their new jobs. For additional information on sector wages in Nevada, please see **Table 1** on page 8.

Figure 3. Nevada Proportions of Employment and Wage (to Total Employment and Wage) for the Leisure and Hospitality, Retail Trade, Administrative Services, and Transportation and Warehousing Sectors (Q1 2010 – Q4 2022)

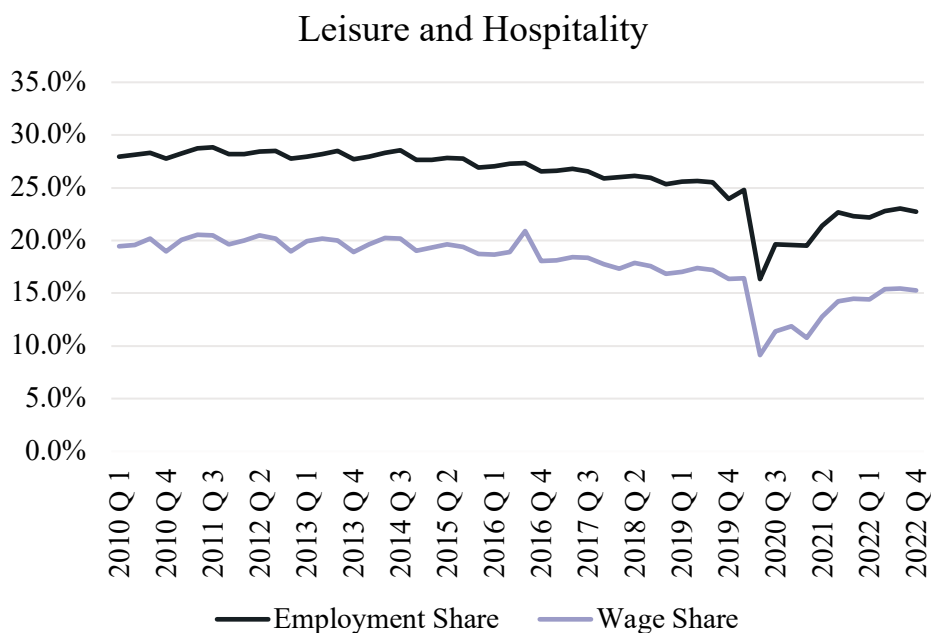


Figure 3 (cont.). Nevada Proportions of Employment and Wage (to Total Employment and Wage) for the Leisure and Hospitality, Retail Trade, Administrative Services, and Transportation and Warehousing Sectors (Q1 2010 – Q4 2022)

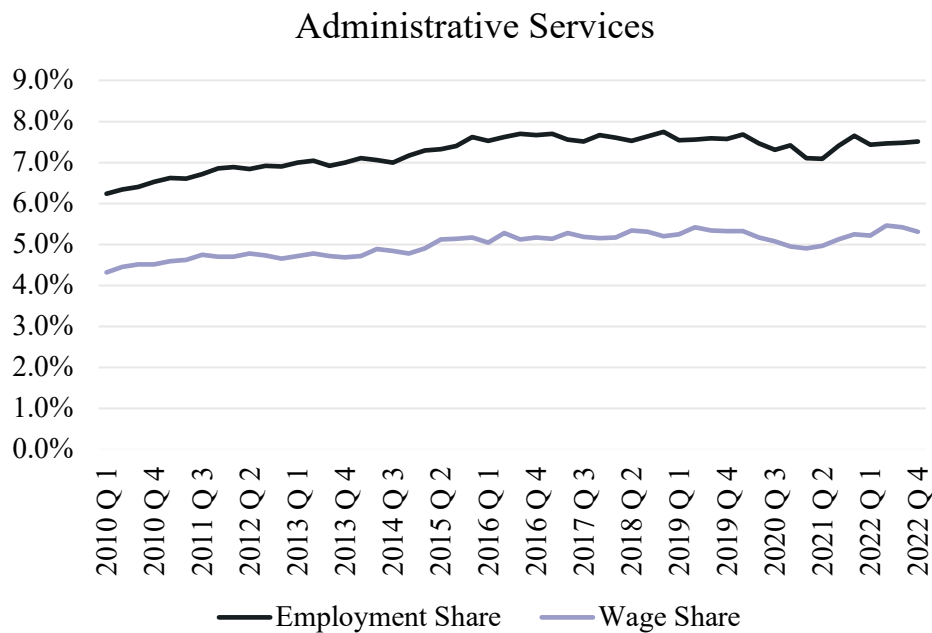
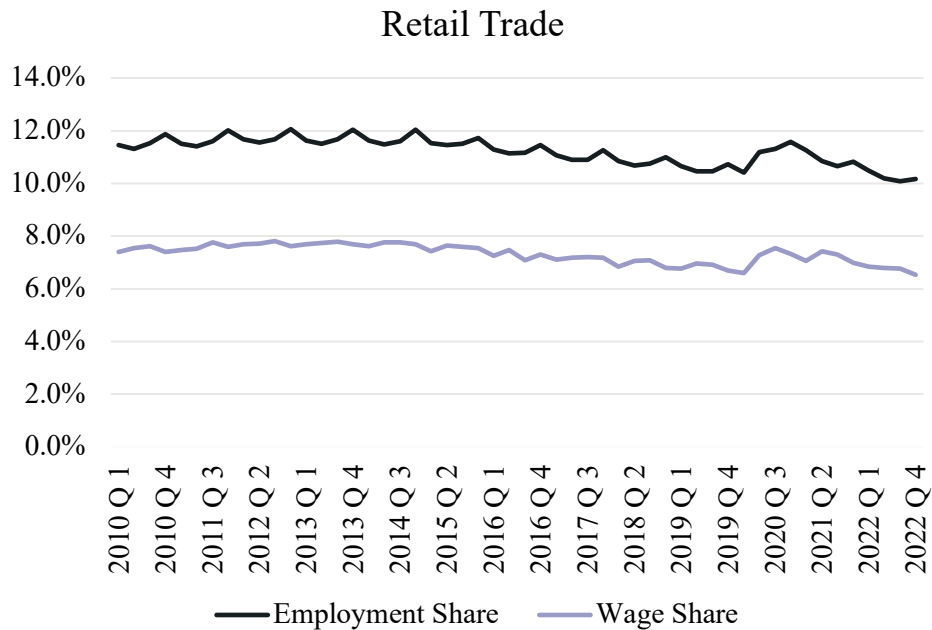
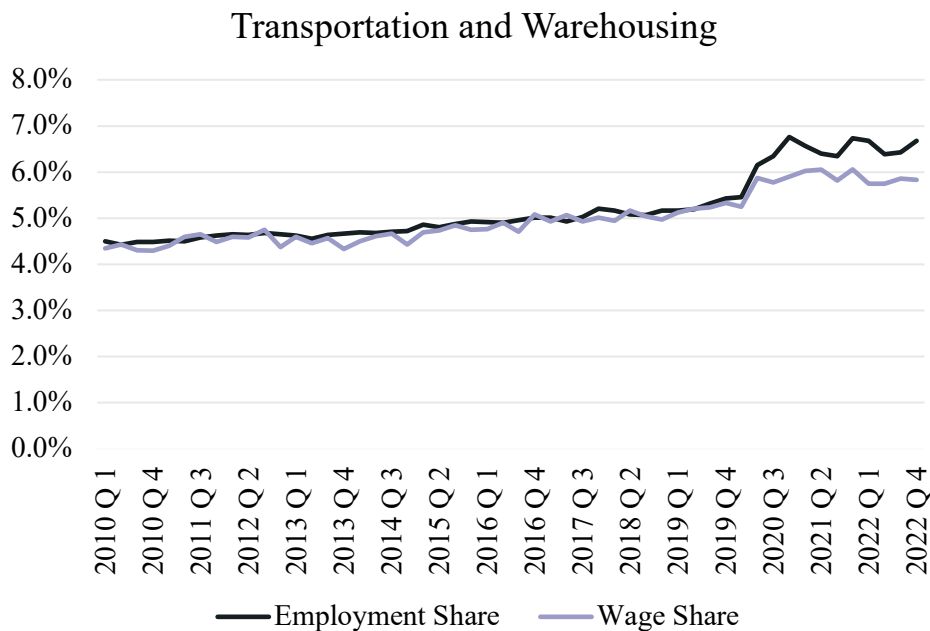


Figure 3 (cont.). Nevada Proportions of Employment and Wage (to Total Employment and Wage) for the Leisure and Hospitality, Retail Trade, Administrative Services, and Transportation and Warehousing Sectors (Q1 2010 – Q4 2022)

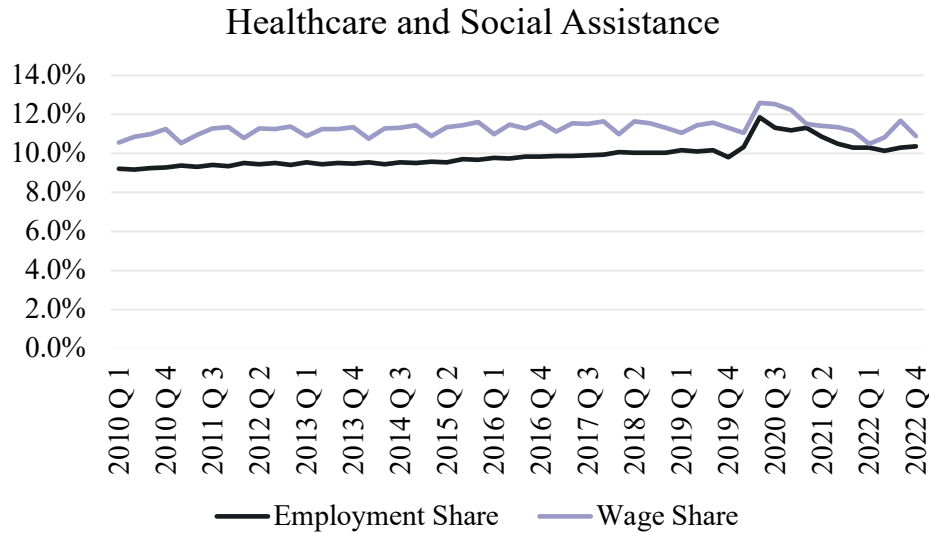


Source (Figure 3): Nevada Department of Employment, Training and Rehabilitation

Looking at other sectors, we note that the proportion of employment and wages for healthcare and social assistance to total employment and wages in Nevada increased from **9.2** and **10.6 percent** in the first quarter of 2010 to **10.4** and **10.9 percent** in the fourth quarter of 2022, respectively (Figure 4).³⁰ The gap between the proportions of employment and wages for healthcare and social assistance fell after the pandemic, which may have resulted from layoffs in sectors with lower-paying jobs during the pandemic and subsequent rehiring later.

³⁰ Raw Quarterly Census of Employment and Wage (QCEW) data for Nevada that CBER receives directly from the Department of Employment, Training and Rehabilitation (DETR) via a secure file exchange site.

Figure 4. Nevada Proportions of Employment and Wage (to Total Employment and Wage) for Healthcare and Social Assistance (Q1 2010 – Q4 2022)



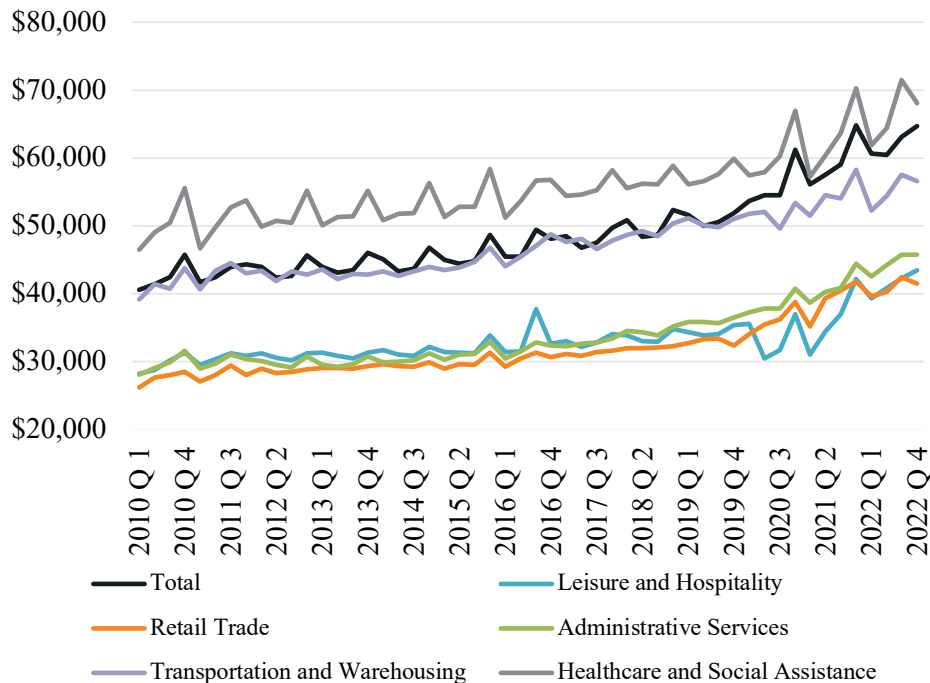
Source: Nevada Department of Employment, Training and Rehabilitation; and UNLV Center for Business and Economic Research

Continuing our analysis, **Figure 5** displays the annualized average wages for the leisure and hospitality, retail trade, administrative services, transportation and warehousing, and healthcare and social assistance sectors—as well as total employment—from the first quarter of 2010 to the fourth quarter of 2022.³¹ The annualized average wages for total employment grew by **59.4 percent** from **\$40,578** in the first quarter of 2010 to **\$64,677** in fourth quarter of 2022, while the annualized average wage for leisure and hospitality employment increased by a smaller amount—specifically, **53.9 percent** from **\$28,229** in the first quarter of 2010 to **\$43,451** in the fourth quarter of 2022.

The annualized average wages for the retail sales and administrative services sectors increased by **58.5** and **62.9 percent**, respectively, from the first quarter of 2010 to the fourth quarter of 2022. The annualized average wages for the transportation and warehousing and healthcare and social assistance sectors only increased by **44.5** and **46.3 percent**, respectively, over the same period.

³¹ Raw Quarterly Census of Employment and Wage (QCEW) data for Nevada which CBER receives directly from the Department of Employment, Training and Rehabilitation (DETR) via a secure file exchange site.

Figure 5. Nevada Annualized Average Wages for Selected Sectors (Q1 2010 – Q4 2022)



Source: Nevada Department of Employment, Training and Rehabilitation

The annualized average quarterly wage growth of total employment as well as leisure and hospitality employment seem to exhibit a similar trend and cycle as shown for wage growth in **Figure 6**.³² To further our analysis, we completed a simple regression of total employment quarter-over-quarter growth rate on the leisure and hospitality employment quarter-over-quarter growth rate from the first quarter of 2010 to the fourth quarter of 2022. Regression analyses are statistical methods used to determine the relationship between variables. This regression showed that a **one-percentage point** growth in leisure and hospitality employment can increase total employment by **0.4 percent**.³³

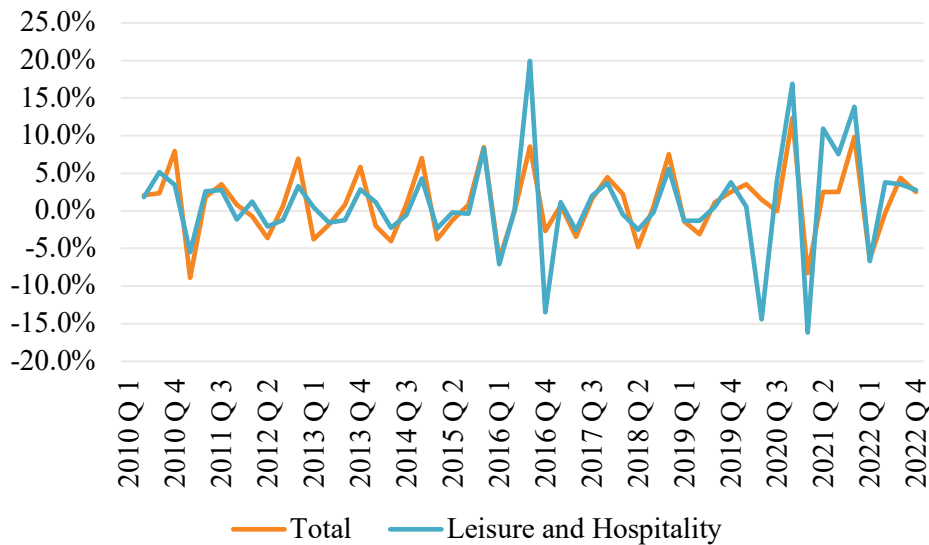
An additional simple regression of total wage growth on leisure and hospitality wage growth also indicated that a **1.0 percent** quarterly wage growth in the leisure and hospitality sector results in **0.4 percent** total quarterly wage growth, but the correlation was not as strong as results from our simple regression of employment.³⁴ These regression results suggest that leisure and hospitality employment and wages correlate with other sectors in Nevada. For more comprehensive information, however, further analysis using more sophisticated models are needed.

³² Raw Quarterly Census of Employment and Wage data for Nevada which CBER receives directly from the Department of Employment, Training and Rehabilitation via a secure file exchange site.

³³ The R-squared was **0.812**, meaning that leisure and hospitality employment growth explains **81.2 percent** of the variation of total employment growth.

³⁴ The R-squared was **0.579**.

Figure 6. Nevada Annualized Average Wage Quarter-Over-Quarter Growth Rate for Total Employment and Leisure and Hospitality Employment (Q1 2010 – Q4 2022)



Source: Nevada Department of Employment, Training and Rehabilitation; and UNLV Center for Business and Economic Research

EDUCATION, MIGRATION, AND AGE OF NEVADA’S LABOR FORCE

In addition to Nevada’s leisure and hospitality sector (and its corresponding employment levels and wages), we also analyzed other components of Nevada’s labor force for our analysis. This includes education levels of Nevada’s overall labor force as well as Nevada’s older population (primarily those who are near, at, or above retirement age). Additionally, we further contextualize our analyses of these two components through consideration of how they are reflected in in-migration and out-migration patterns (i.e., we consider the educational attainment and ages of those migrating into or out of Nevada). A brief overview of Nevada’s population and labor force (pre- and post- pandemic) provides some background for analyses included within this section.

Overview of Nevada’s Population and Labor Force

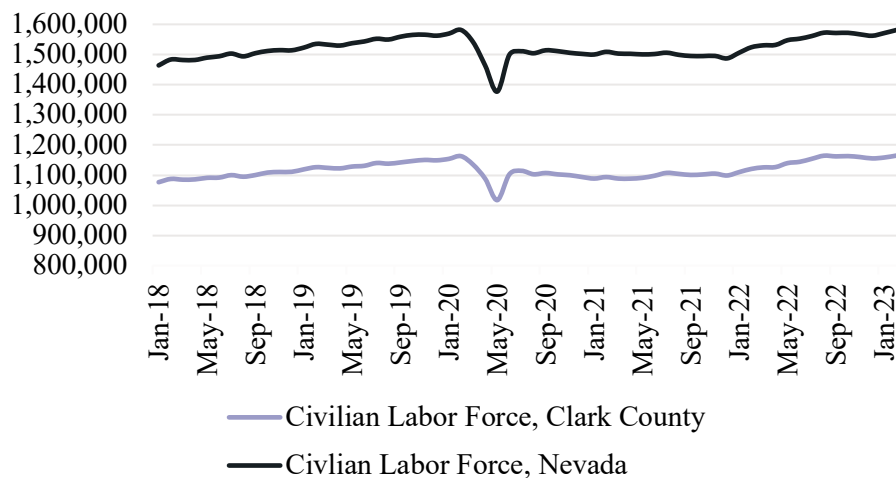
Between 2019 and 2022, Nevada added **87,001 additional residents**, and the individual populations of both Clark County and Washoe County—Nevada’s largest and second-largest counties, respectively—grew in size, despite effects from the pandemic.³⁵ It is worth noting that,

³⁵ U.S. Census Bureau, “Resident Population in Nevada [NVPOP],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/NVPOP>.

between 2019 and 2020, Clark County’s population declined by **1,150 residents** before later rebounding.³⁶ Clark County accounts for nearly **75 percent** of the state’s total population.³⁷

During this same time period, however, Nevada’s civilian labor force (defined as all persons ages 16 and older in the civilian non-institutional population classified as either employed or unemployed, with certain exceptions) decreased by **245 individuals** (not seasonally adjusted) from February 2020 (just prior to the start of the pandemic recession) to February 2023.³⁸ As of February 2023, there were only **1,882 more individuals** (not seasonally adjusted) in Clark County’s labor force than in February 2020.³⁹ **Figure 7** below displays changes in both Nevada’s and Clark County’s civilian labor forces from January 2018 to February 2023.

Figure 7. Civilian Labor Force in Nevada and Clark County (January 2018 – January 2023)



Source: U.S. Bureau of Labor Statistics. Note: This figure is scaled for display purposes. The minimum y-axis limit is 800,000.

Additionally, **Figure 8** below displays Nevada’s population, civilian labor force, and labor force participation rate over a similar time period—from November 2019 to March 2023. While both Nevada’s population and labor force have recovered beyond their pre-pandemic levels (as of March 2023), Nevada’s labor force participation rate has not. At its lowest point during this time period, Nevada’s labor force participation rate dropped from its pre-pandemic high of **64.5 percent** to **56.6 percent** (as recorded in May of 2020).

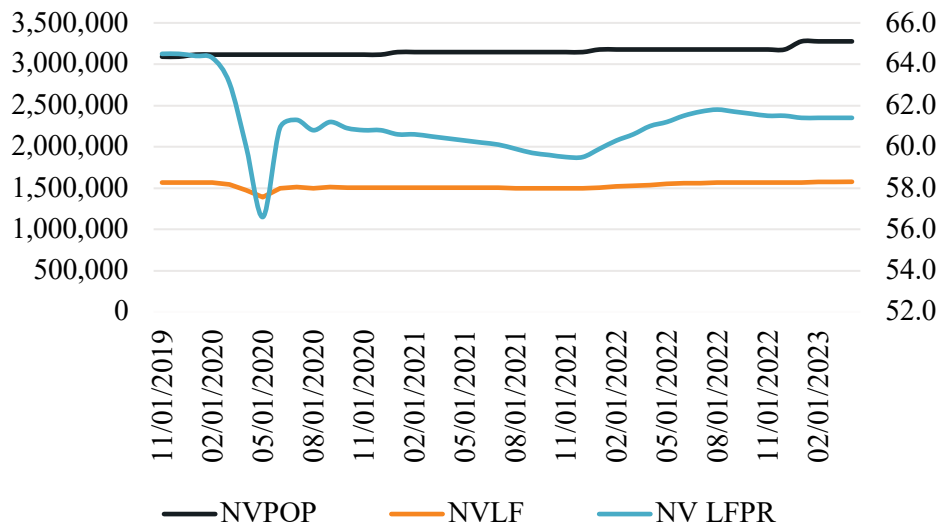
³⁶ U.S. Census Bureau, “Resident Population in Nevada [NVPOP],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/NVPOP>.

³⁷ U.S. Census Bureau, “Resident Population in Clark County, NV [NVCLAR3POP],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/NVCLAR3POP>.

³⁸ U.S. Bureau of Labor Statistics, “Civilian Labor Force in Nevada [NVLFN],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed November 2023, <https://fred.stlouisfed.org/series/NVLFN>.

³⁹ U.S. Bureau of Labor Statistics, “Civilian Labor Force in Clark County [NVCLAR3LFN],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/NVCLAR3LFN>. Data is not seasonally adjusted.

Figure 8. Population (NVPOP), Civilian Labor Force (NVLF), and Labor Force Participation Rate (NV LFPR) for Nevada (Y Axis) (November 2019 – February 2023)



Source: U.S. Census Bureau

Education and Labor Force Participation

This portion of our analysis examines the possibility that the decrease seen in Nevada’s labor force participation rate in recent years may be a function of Nevada’s comparatively low levels of educational attainment. To support our research, we completed regressions analyzing the potential relationship between the percentage of individuals with a bachelor’s degree or higher and the labor force participation rate.

For these regressions, we utilized data from the U.S. Census American Community Survey for the years 2019 and 2021 on individuals between the ages of 21 and 64 for all U.S. states and Washington D.C. The results of these regressions are displayed in **Figures 9** and **10** below. These figures show a significant linear relationship between the percentage of those who hold a bachelor’s degree or higher and the labor force participation rate.

In 2019, the percentage of individuals with a bachelor’s degree or higher for those ages 21 to 64 in Nevada was **24.2 percent**, which ranked it **fourth lowest** in the nation (with Arkansas, West Virginia, and Mississippi ranking lower).⁴⁰ In 2021, Nevada’s percentage improved to **26.5 percent**, but this only improved its rankings from being **fourth lowest** to **fifth lowest** nationally (with Louisiana, Arkansas, West Virginia, and Mississippi ranking lower).⁴¹

⁴⁰ U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

⁴¹ U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

As explored later in this report, this improvement may, in part, be attributable to changes in migration patterns over this time period.

Figure 9. Relationship Between the Percentage of Individuals with a Bachelor’s Degree or Higher and the Labor Force Participation Rate (2019)

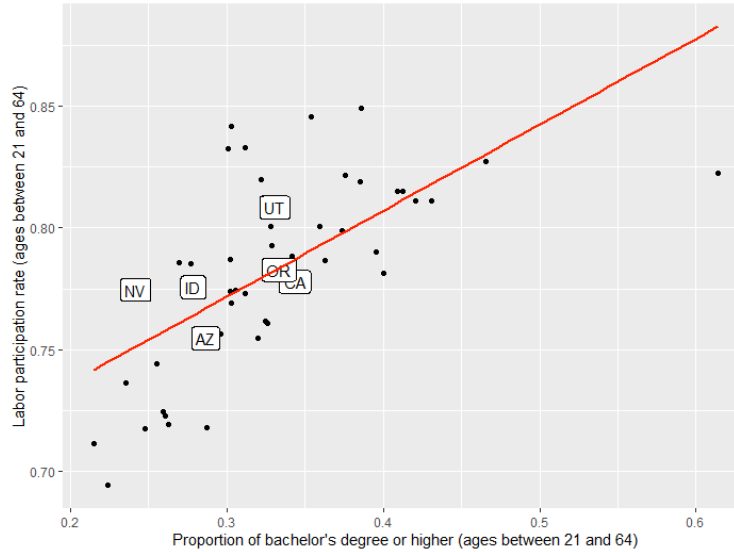
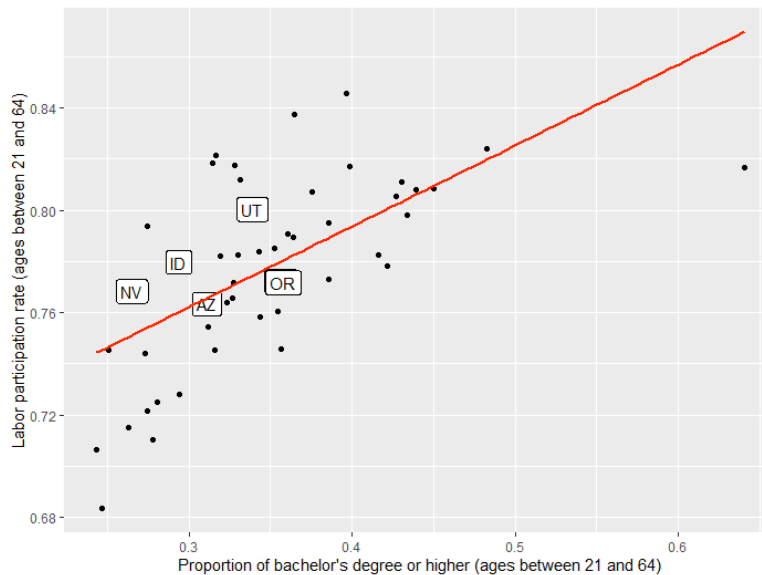


Figure 10. Relationship Between the Percentage of Individuals with a Bachelor’s Degree or Higher and the Labor Force Participation Rate (2021)



Source (Figures 9 and 10): U.S. Census Bureau

Note: The simple regression models for labor force participation rates show that the coefficients for the percentage of individuals with a bachelor’s degree or higher are **0.35** and **0.32**, respectively, for 2019 and 2021. Although the coefficient is lower for 2021, the results imply that people with higher education degrees are more likely to participate in the labor force. Adjusted R-Squared for the models are **0.41** and **0.38**, respectively, for 2019 and 2021.

Nevada’s educational attainment by individuals with a bachelor’s degree or higher improved slightly from 2019 to 2021. During this time, the LFPR for these individuals also improved. In contrast, labor force participation for individuals with less than a bachelor’s degree (ages 21 to 64) declined from **75.4 percent** in 2019 to **74.3 percent** in 2021.⁴² Labor force participation for individuals with a bachelor’s degree or higher, however, increased slightly during this time—from **83.8 percent** in 2019 to **83.9 percent** in 2021.⁴³

More specifically, from 2019 to 2021, multiple sectors in Nevada whose workers were less likely to hold a bachelor’s degree or higher experienced decreases in labor force participation rates. This includes the leisure and hospitality, manufacturing, and retail sectors.⁴⁴ The leisure and hospitality sector—which accounts for over **22.7 percent** of employment in Nevada—recorded the largest decrease in labor force participation rate from **88.3 percent** in 2019 to **82.4 percent** in 2021. In 2021, **18.4 percent** of workers in the leisure and hospitality sector in Nevada held a bachelor’s degree or higher.

Education, Migration, and Labor Force Participation

Domestic in-migration to Nevada from other states also may have contributed to the decline in its labor force participation rate in 2021. Nevada’s and Clark County’s population growth in recent decades has largely been driven by this type of in-migration. As displayed in **Figure 11** below, net domestic in-migration accounts for roughly **60 percent** of the population growth in Clark County since 2015.⁴⁵

Data from the 2019 American Community Survey 1-year Public Use Microdata Sample show that **29.7 percent** of all in-domestic migrants to Nevada (ages 21 and over) held a bachelor’s degree or higher. Comparatively, **31.2 percent** of out-migrants from Nevada to other states that year held a bachelor’s degree or higher. Despite this recorded percentage of domestic in-migrants with higher educational attainment in 2019, Nevada still proportionally attracted a larger number of individuals without a bachelor’s degree or higher. That year, Nevada’s proportion of in-migrants with less than a bachelor’s degree ranked **seventh highest** nationally.⁴⁶ In-migration, however, (**30,373 migrants**) outnumbered out-migration (**24,861 migrants**) that year. As such, in 2019, Nevada still gained an additional **5,512 residents** that held a bachelor’s degree or higher.

⁴² U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

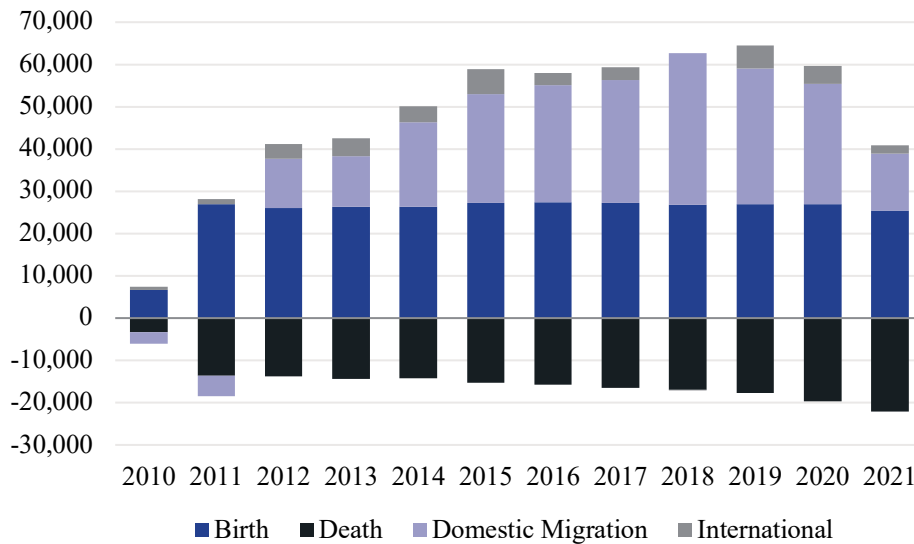
⁴³ U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

⁴⁴ U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

⁴⁵ UNLV Center for Business and Economic Research, “Southern Nevada Population Forecast, 2023,” May 2023, accessed July 2023, <https://cber.unlv.edu/wp-content/uploads/2023/05/2023-CBER-Population-Forecasts.pdf>.

⁴⁶ Et. All. U.S. Census Bureau, “American Community Survey 1-Year Estimates: 2019,” accessed April 2023, <https://www.census.gov/programs-surveys/acs>.

Figure 11. Components of Population Change in Clark County (2010 – 2021)



Source: UNLV Center for Business and Economic Research

Note: Estimates for 2010 to 2019 come from the 2019 Vintage series, which was released before the 2020 decennial estimates were available.⁴⁷ The U.S. Census Bureau expects to publish the 2010-2020 postcensal estimates sometime this year, meaning that the estimates for 2010 to 2019 would be revised. The 2020 and 2021 estimates use the 2021 Vintage series.⁴⁸

To provide further background on the composition of in-migrants nationally in 2021, **Table 2** below displays domestic in-migration statistics by state for that year. As noted in the table, Nevada attracted a proportionally larger percentage of domestic in-migrants in 2021 with less than a bachelor’s degree (as was the case—previously noted—for Nevada in 2019) than some of its neighboring states, such as Arizona and Colorado.⁴⁹

While Nevada did experience an increase from 2019 to 2021 in its percentage of in-migrants with higher educational attainment, these percentages still remain comparatively low when compared to the attainment of in-migrants to other states. Additionally, Nevada’s percentage of in-migrants ages 21 to 64 with a bachelor’s degree or higher remained comparatively low during this time—specifically, **38.5 percent** in 2021, placing Nevada in the **bottom 10 states** for attracting college-educated workers—despite the typically greater mobility individuals with higher educational attainment tend to have. This may, in part, be attributable to the availability of jobs in Nevada that

⁴⁷ U.S. Census Bureau, “County Population Totals and Components of Change: 2010-2019,” accessed February 2023, <https://www.census.gov/data/datasets/time-series/demo/popest/2010s-counties-total.html>.

⁴⁸ U.S. Census Bureau. “County Population Totals and Components of Change: 2020-2021,” accessed February 2023, <https://www.census.gov/data/tables/time-series/demo/popest/2020s-counties-total.html>.

⁴⁹ Authors’ calculations, using 2021 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS) data. U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

Table 2. Domestic In-Migration Statistics by State (2021)

State	Proportion of Individuals Working Remotely	Proportion of Individuals ages 21 to 64 with College Degrees	Proportion of Individuals ages 21 to 64 with Non-College Degrees
District of Columbia/DC	46.6%	69.0%	31.0%
Massachusetts/MA	35.3%	68.4%	31.6%
Rhode Island/RI	33.8%	61.2%	38.8%
Maine/ME	33.6%	59.7%	40.3%
California/CA	33.6%	61.8%	38.2%
New Jersey/NJ	33.5%	60.3%	39.7%
Maryland/MD	33.4%	64.3%	35.7%
New York/NY	32.9%	66.1%	33.9%
Oregon/OR	32.8%	47.6%	52.4%
New Hampshire/NH	32.6%	52.7%	47.3%
Colorado/CO	31.7%	57.4%	42.6%
Vermont/VT	31.1%	64.3%	35.7%
Washington/WA	31.1%	54.9%	45.1%
Connecticut/CT	30.2%	58.9%	41.1%
North Carolina/NC	29.8%	49.5%	50.5%
Texas/TX	29.4%	48.3%	51.7%
Illinois/IL	28.7%	59.9%	40.1%
Virginia/VA	28.4%	55.9%	44.1%
Delaware/DE	28.2%	48.4%	51.6%
Pennsylvania/PA	28.2%	56.7%	43.3%
Florida/FL	27.6%	46.3%	53.7%
Minnesota/MN	27.5%	60.3%	39.7%
Georgia/GA	27.2%	44.9%	55.1%
Nevada/NV	27.0%	38.5%	61.5%
Arizona/AZ	25.4%	42.0%	58.0%
Utah/UT	24.8%	49.8%	50.2%
South Carolina/SC	24.6%	43.0%	57.0%
Missouri/MO	23.7%	44.9%	55.1%
Nebraska/NE	23.6%	42.5%	57.5%
Tennessee/TN	23.2%	42.1%	57.9%
Idaho/ID	23.0%	32.5%	67.5%
Michigan/MI	22.0%	49.3%	50.7%
Montana/MT	20.9%	47.4%	52.6%
New Mexico/NM	20.8%	46.2%	53.8%
Ohio/OH	20.6%	50.2%	49.8%
Kansas/KS	19.1%	45.4%	54.6%
Wisconsin/WI	18.5%	48.4%	51.6%
Iowa/IA	17.2%	38.8%	61.2%
North Dakota/ND	17.0%	42.6%	57.4%
Louisiana/LA	16.4%	31.3%	68.7%
Indiana/IN	15.9%	36.2%	63.8%
Oklahoma/OK	15.1%	32.6%	67.4%
Hawaii/HI	15.0%	48.6%	51.4%
Kentucky/KY	13.4%	39.7%	60.3%
Mississippi/MS	12.8%	36.8%	63.2%
Alabama/AL	12.4%	39.0%	61.0%
Wyoming/WY	12.3%	26.0%	74.0%
West Virginia/WV	12.2%	28.5%	71.5%
Arkansas/AR	10.7%	32.3%	67.7%
Alaska/AK	5.8%	29.3%	70.7%

Source: U.S. Census Bureau

do not require a bachelor’s degree or higher.⁵⁰ Additionally, individuals with the ability to work remotely (often those with higher educational attainment) may also have greater mobility.⁵¹

Notably, even individuals already residing in Nevada (ages 21 to 64) who held a bachelor’s degree or higher in Nevada during this time period experienced slightly comparatively lower labor force participation rates nationally—**84.5 percent** in 2019, and **84.3 percent** in 2021. These rankings placed Nevada in **45th** and **44th** nationally (for labor force participation rates among these individuals) in 2019 and 2021, respectively. Labor force participation rates for individuals with less than a bachelor’s degree already residing in Nevada for ages 21 to 64 decreased from **75.7 percent** in 2019 and **74.6 percent** in 2021—yet this rate was comparatively higher than the rates recorded over this time period for individuals with less educational attainment in other states.⁵²

In 2021, among those ages 21 to 64 who moved between states in the United States, more than half (**50.2 percent**) held a bachelor’s degree or higher. Those with a bachelor’s degree or higher in this age range who migrated to Nevada during this time period likely worked in one of the following sectors: professional services, healthcare, and education. These sectors, however, also lost comparatively more workers to out-migration from Nevada during this time period (although overall in-migration was greater than out-migration, so Nevada still netted positive for workers in these industries). Individuals with less than a bachelor’s degree who in-migrated during this time period were concentrated in the following sectors: leisure and hospitality, warehousing, retail, and finance.⁵³

In conclusion, lower levels of educational attainment may be linked to lower LFPRs, and Nevada attracts comparatively less educated domestic in-migrants from out-of-state. Additionally, certain sectors—such as leisure and hospitality—tend to have higher concentrations of workers with less than a bachelor’s degree, adding further complexity to Nevada’s workforce landscape.

Labor Force Participation of Nevada’s Older Population

In addition to educational attainment, our analysis includes consideration of how Nevada’s older population may play a role in its labor force participation rate. Additional regression analyses note that Nevada’s lower LFPR in 2021 may be partly explained by the larger share of its population in the 65 and over category compared to 2019. **Figures 12** and **13** below summarize our regression results and display the relationship between the share of the population ages 65 and over and labor

⁵⁰ U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

⁵¹ U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

⁵² U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

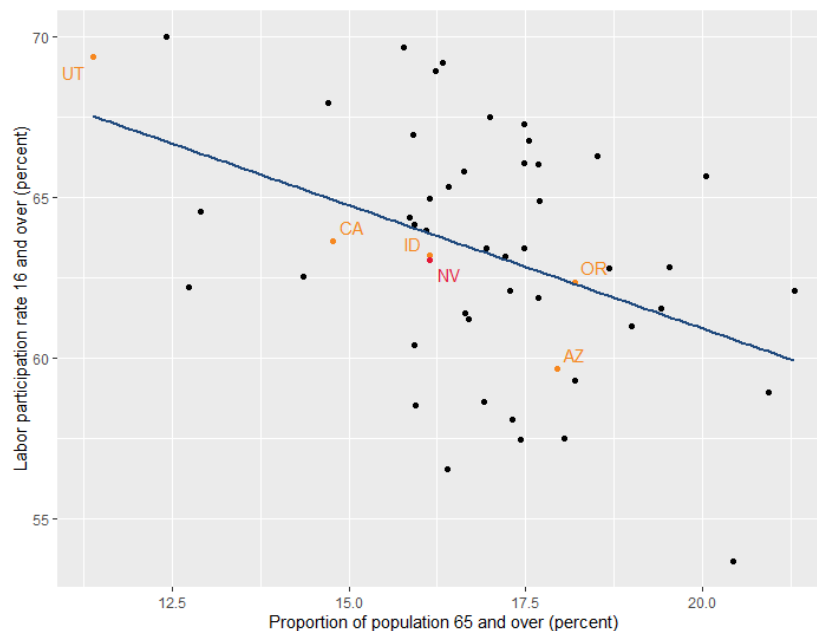
⁵³ U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

force participation rates nationally. Our initial regression results indicate a stronger relationship between the share of population ages 65 and over and the LFPR in 2021 compared to 2019.⁵⁴

The linear relationship between the two variables is negative, meaning that an increase in the proportion of the population ages 65 and over likely negatively affects the LFPR. These results imply that a **one-percent** increase in the proportion of the population ages 65 and over (e.g., **16 percent to 17 percent**) will likely cause a **0.79 percent** decline in the labor force participation rate, on average, in 2021, compared to a **0.77 percent** decline in 2019.⁵⁵

In 2019 and 2021, Nevada’s share of its population ages 65 and over—**16.2 percent** and **16.5 percent**, respectively—was comparatively lower than other states. Among Nevada’s neighboring states, only California and Utah had lower population shares for this age range in 2021—**15.2 percent** and **11.6 percent**, respectively.⁵⁶ We expand on this in the next section.

Figure 12. Relationship Between the Labor Force Participation Rate and Proportion of the Population Ages 65 and Over (2019)

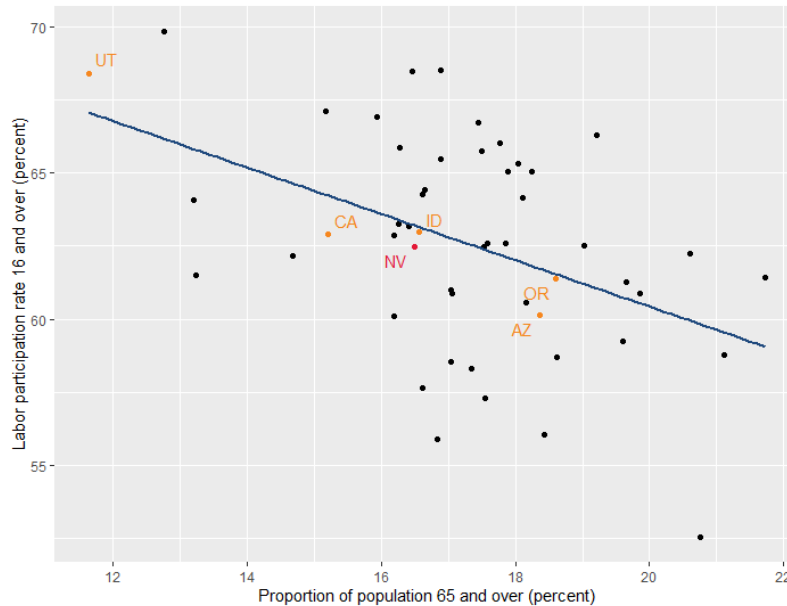


⁵⁴ The coefficients are **-0.77** and **-0.79**, respectively, for 2019 and 2021, and the adjusted R-squared values are **0.16** and **0.18**, respectively, for 2019 and 2021.

⁵⁵ The adjusted R-squared for 2021 indicates that the proportion of the population ages 65 and over can explain **18.0 percent** of the variation in the labor force participation rate.

⁵⁶ U.S. Census Bureau. “American Community Survey 1-year Public Use Microdata Sample (PUMS).”

Figure 13. Relationship Between the Labor Force Participation Rate and Proportion of the Population Ages 65 and Over (2021)



Source (Figures 12 and 13): U.S. Census Bureau

Note: The simple regression models for labor force participation rates show that the coefficients for the proportion of the population ages 65 and over are **-0.77** and **-0.79**, respectively, for 2019 and 2021. The coefficients are statistically significant at the **1 percent** level. Adjusted R-Squared for the models are **0.16** and **0.18**, respectively, for 2019 and 2021. The intercept is **0.76** for both 2019 and 2021 models. Labor force participation rates and proportions of the population ages 65 and over were calculated using the PUMS data from the Census.

Nevada’s Older Population, Migration, and Labor Force Participation

Nevada appears to be one of the more attractive states for retirees considering its comparatively higher proportion of in-migrants over the age of 65. From 2019 to 2021, Nevada’s share of its population ages 65 and older grew from **16.2 percent** to **16.5 percent**, representing an increase of **4.3 percent** (an increase of **21,224 people** from **497,450** in 2019 to **518,674** in 2021). About **16,000** of this total were new in-migrants from other states, representing **12.2 percent** of total in-migrants to Nevada in 2021 (an increase from **11.0 percent** in 2019).⁵⁷

In 2021, Nevada ranked **fifth highest** nationally for its high proportion of new residents from other states ages 65 and over. Approximately **11,500 people** ages 65 and over, however, out-migrated from Nevada to other states in 2021, representing **13.4 percent** of out-migrants that year. Nevada

⁵⁷ U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

ranked **fourth highest** nationally that year for this high proportion of out-migrants over the age of 65. As in-migrants in this age group outnumbered out-migrants, Nevada overall added net migrants ages 65 and above during this time period.

Additionally, Nevada’s decline in labor force participation among individuals immediately preceding this age (specifically, ages 55 to 64) may be attributable, in part, to the attraction of early retirees from other states to Nevada. In recent years, Nevada has posted the comparatively lowest labor force participation rates for those between the ages of 55 and 64.⁵⁸ In 2019 and 2021, Nevada’s labor force participation rates for individuals ages 55 to 64 ranked **41st** and **42nd** nationally, respectively (declining from **62.2 percent** in 2019 to **61.8 percent** in 2021).

This comparatively low labor force participation rate may be partly attributable to considerations related to educational attainment and marital status among individuals within this age group. According to our analysis, education and marital status positively affected labor force participation rates in 2021. Among those ages 55 to 64, Nevada ranked **42nd** and **46th** nationally for educational attainment (the proportion of individuals with a bachelor’s degree or higher) as well as **48th** and **47th** for marital status (the percentage of those who were married) in 2019 and 2021, respectively.⁵⁹

Nevadans within this age range and with less than a bachelor’s degree experienced a decrease in labor force participation from **60.5 percent** in 2019 to **59.6 percent** in 2021. This decline was comparable to those between the ages of 21 and 54 with the same educational attainment, who experienced a decrease in LFPR from **79.5 percent** in 2019 to **78.5 percent** in 2021. This may suggest that the decline in labor force participation among persons between the ages of 55 and 64 may have been influenced by their educational levels, which may have limited their job-seeking opportunities during the pandemic.

In conclusion, the labor force patterns of individuals ages 65 and older and those within the 55 to 64 age range—i.e. retirees and early retirees—may have played a role in the overall decline Nevada saw in labor force participation during recent years. Additional factors, such as rates of educational attainment, marital status, and migration patterns, may have generated an additional impact on the labor force participation rates among these ages.

CONCLUSION

Nevada’s labor force participation rate decreased by **2.9 percentage points**, from **64.3 percent** in February 2020 to **61.4 percent** in February 2023, which was the third-largest drop among all states following the COVID-19 pandemic. While Nevada added **87,001** additional residents between 2019 and 2022, employing **94,400 more people** in February 2023 than in February 2020, the state’s civilian labor force decreased by **245 individuals** over the same time frame.

⁵⁸ The authors analyzed 2019 and 2021 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS) data. U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

⁵⁹ U.S. Census Bureau, “American Community Survey 1-Year Public Use Microdata Sample (PUMS): 2019 and 2021,” accessed April 2023, <https://www.census.gov/programs-surveys/acs/microdata.html>.

Nevada’s and Clark County’s reductions in labor force participation primarily appear to be tied to both the economy and education. The economic hyper-dependence on one industry gives the state and its largest county a boom or bust pattern. When leisure and hospitality perform well, so does Nevada’s economy. When the leisure and hospitality sector is affected by a global pandemic or a financial crisis, the effects ripple not only through southern Nevada but the state as a whole. In both Nevada and the United States, the leisure and hospitality industry has struggled to return to its pre-pandemic employment peak, despite ostensibly strong labor demand.

As of February 2023, over **one in four jobs** in Clark County are still tied to leisure and hospitality, which exceeds its tourism-dependent peers, such as Orlando, Florida, and New Orleans, Louisiana. A concentration in one to two industries is unique in comparison with Las Vegas’s large metropolitan peers and its tourism-driven counterparts. The number of those employed in leisure and hospitality in Nevada and Clark County still has only recently surpassed their respective pre-pandemic peaks of **360,400** and **297,300 workers**.

The decrease in Nevada’s labor force participation rate may be a function of the interplay between comparatively low levels of educational attainment and economic concentration in leisure and hospitality. Nevada’s LFPR for those with less than a bachelor’s degree (ages 21 to 64) declined from **75.4 percent** in 2019 to **74.3 percent** in 2021. Labor force participation for those with a bachelor’s degree or higher, however, experienced a smaller increase, from **83.8 percent** in 2019 to **83.9 percent** in 2021. The leisure and hospitality sector, which accounts for **22.7 percent** of employment in Nevada, recorded the largest decrease in labor force participation rates (for those ages 16 and over) from **88.3 percent** in 2019 to **82.4 percent** in 2021.

Nevada’s sectoral dependence, along with ongoing underinvestment in a skilled and educated workforce, appears to have reduced the job opportunities for workers during economic downturns. In so doing, Nevada continues to see a depletion in its pool of workers, who either permanently leave the job market in frustration, move to another state (which is more likely to occur with college-educated workers), or “sit on the sidelines” until jobs and wages improve enough to a point that they return to the labor force. This loss is also a loss of workers for employers who have experienced a difficult time finding not only employees, but also qualified employees. Despite raising pay and increasing other workplace perks, such as scheduling and workplace flexibility, career training, and—in some cases—childcare, labor demand still outstrips labor supply across the United States, with nearly **1.7 job openings** for every worker seeking employment (according to February 2023 job numbers).⁶⁰ This shortage is even more acute in leisure and hospitality

⁶⁰ U.S. Bureau of Labor Statistics, “Job Openings: Total Nonfarm [JTSJOL],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/JTSJOL> & U.S. Bureau of Labor Statistics, “Unemployment Level [UNEMPLOY],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July, 2023, <https://fred.stlouisfed.org/series/UNEMPLOY>.

nationally, where the ratio of job openings to job seekers is higher, at **2.1** to **1**.⁶¹ Recent numbers have shown both ratios declining, yet they are both well above the long-run average of **0.6**.

This can be harmful to the local, state, and national economies, as a lack of workforce means a reduction in real GDP, absent gains in productivity. By our estimates, Nevada lost nearly **\$19 billion** in real GDP as a result of the pandemic (2023).⁶² Continued labor shortages would mean further reductions in both short- and long-run GDP, lowering the state’s potential real GDP from its pre-pandemic level, which spills over into everything from lost productivity to less jobs and spending in the economy.

In theory, this could lead to a self-reinforcing cycle, where the reduction in productivity reduces tax collection while increasing the demand for government expenditures. Over time, society’s standard of living could decrease as services deteriorate and economic gains lessen. To help curb demand for qualified employees, employers eventually may switch to more automation and technological innovations. Technology can increase overall productivity, by allowing each worker to produce more output in the same given time period (examples are email or text messages in lieu of mailing a letter or note). Meanwhile, technology could contribute to an increase in wages for workers in the technological fields due to the scarcity of the skills necessary to make automation work.⁶³ Technological innovation, however, comes at the expense of fewer jobs for certain workers who may lack the in-demand skills and education—a problem that already plagues our state economy.

Our preliminary findings suggest that the considerable decrease in labor force participation pre- and post-pandemic in Nevada reflects an economy that remains dependent on one industry, and, as many subject matter experts contend, characterized by underinvestment in education and workforce training.

Further Research Questions to Explore

Questions remain, and further research will allow for more in-depth examination that is beyond the scope of this analysis. We outline these below:

- 1) Why did Nevada’s labor force participation rate fall so sharply as compared to other states or communities with a high concentration in one or a set of industries, such as oil in North Dakota or healthcare in Cleveland, Ohio?
- 2) What commonalities did Nevada share with other states that also saw a significant decrease in labor force participation, such as Vermont and Maine?

⁶¹ U.S. Bureau of Labor Statistics, “Job Openings: Leisure and Hospitality [JTS7000JOL],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/JTS7000JOL>; and U.S. Bureau of Labor Statistics, “Unemployment Level - Leisure and Hospitality, Private Wage and Salary Workers [LNU03032241],” retrieved from FRED, Federal Reserve Bank of St. Louis, accessed July 2023, <https://fred.stlouisfed.org/series/LNU03032241>.

⁶² UNLV Center for Business and Economic Research, “2023 Spring Outlook Report,” April 26, 2023, <https://cber.unlv.edu/economic-forecasts-and-research/>.

⁶³ Ashley Nunes, “Automation Doesn’t Just Create or Destroy Jobs — It Transforms Them,” *Harvard Business Review*, November 2, 2021, <https://hbr.org/2021/11/automation-doesnt-just-create-or-destroy-jobs-it-transforms-them>.

- 3) What were the driving forces behind the increases in the labor force participation of eight states (Alaska, Illinois, Louisiana, New Jersey, North Dakota, Oklahoma, Oregon, and Utah) between February 2020 and February 2023? Are there any “lessons learned” for Nevada?
- 4) Did Reno’s (Washoe County’s) larger share of college educated workers (and proportionally higher inflow of college educated workers) help it withstand the pandemic shock better than Clark County? Or did Reno’s pre-pandemic progress on economic diversification preemptively allow for a faster recovery?
- 5) To what extent did increases in part-time work and remote work, along with their definitions and treatment in the economic data, affect Nevada’s LFPR? What about self-employment and “gig work”?
- 6) Our results show that labor force participation is decreasing in the share of the population for different age groups. How and why is this occurring? For example:
 - Are younger workers discouraged or only marginally attached to the workforce, perhaps as a result of pandemic disruptions?
 - What are the implications of childcare costs and the decision to work or stay at home for those just becoming established in their jobs or careers?
- 7) How do other demographic considerations, such as gender or race/ethnicity, interact with age, in-migration, and educational attainment? Are they drivers of labor force participation in Nevada, particularly within leisure and hospitality?
- 8) Does the lack of career opportunities outside of the dominant industries in Nevada—leisure and hospitality and mining—deter workers from migrating to Nevada or increase net out-migration of workers?
- 9) Given the intersection between educational attainment and labor force participation, what are the enrollment trends at Nevada System of Higher Education (NSHE) two- and four-year degree-granting institutions? What are their preliminary effects on the state’s workforce?

Additional Future Analysis

There is no shortage of evidence-based strategies to improve workforce development and labor force participation, including, among others, training, cross-skilling, upskilling, career matching, credentialing, apprenticeships, and skills-based hiring. The extent to which Nevada has implemented these interventions remains an open question, though its commitment to understanding workforce development and economic development as complementarities is a durable one. Formulating a robust set of policy recommendations requires the fulfillment of the research agenda delineated above, though our preliminary findings reveal avenues of inquiry. These include:

- Landscape analyses that inventory Nevada’s workforce development policies and programs implemented or operationalized by states, local governments, and nonprofits;
- Examinations of existing statutory and regulatory/administrative authorities with respect to workforce development policies for Nevada;
- Assessments of state and federal funding dedicated to workforce development in Nevada;

- Summaries of policy interventions considered and/or implemented by other states and discussion of their impacts in comparison with Nevada; and
- Surveys of individual groups referenced in this report to better identify impediments to their entry into the labor market.

APPENDIX A. ABBREVIATED TERMS AND DEFINITIONS

Civilian Labor Force: All persons in the civilian non-institutional population classified as either employed or unemployed, with the exception of populations who are involuntarily incapacitated, serving in the military, incarcerated, or in an assisted living home.

Domestic Migrant: Residents of the United States who move to another state. In our analysis, we focus on migrants moving to Nevada.

Economic Migrant: Residents of the United States who move to another state for economic reasons related to employment. In our analysis, we focus on migrants moving to Nevada.

Gross Domestic Product (GDP): The monetary value of all final goods and services produced in a country, state, county, or municipality in a given period of time.

In-State Migration: Individuals who move within a state from one county to another. In our analysis, we focus on migrants moving between counties in Nevada.

In-Migration: Individuals who recently moved to Nevada (for the purposes of our analysis) from another state identified at the time or period of time of the population survey.

Labor Force Participation Rate (LFPR): The number of individuals employed or seeking employment divided by the civilian non-institutional population, which consists of individuals 16 and older (with the exception of those who are involuntarily incapacitated, serving in the military, incarcerated, or in an assisted living home).

Leisure and Hospitality Sector: Used by the U.S. Bureau of Labor Statistics (BLS) to define service-providing industries related to lodging, food establishments, gambling, arts, entertainment, and other recreation industries. It includes two North American Industry Classification System (NAICS) subgroups: arts, entertainment, and recreation (NAICS 71) and accommodation and food services (NAICS 72).

Out-Migration: Individuals who moved out of Nevada (for the purposes of our analysis) to another state identified at the time or period of time of the population survey.

Personal Consumption Expenditures: A measure of consumer spending that includes all final goods and services bought by households. It is a component of GDP.

Real GDP: The monetary value of all final goods and services produced in a country, state, county, or municipality in a given period of time, adjusted for changes in the implicit deflator (price level).

Remote Workers: Individuals who identified in the U.S. Census or American Community Survey (ACS) as having performed work duties from home, rather than traveling to a separate workplace.

U-3 Unemployment Rate: The number of individuals unemployed divided by the number of those employed plus those unemployed.

U-6 Unemployment Rate: The number of individuals unemployed, plus all marginally attached workers, plus those employed part time for economic reasons, divided by all workers employed plus those unemployed, plus all marginally attached workers, plus those employed part time for economic reasons.

APPENDIX B. NEVADA P-20 TO WORKFORCE RESEARCH DATA SYSTEM (NPWR)

Conceptually, the Nevada P-20 to Workforce Research Data System (NPWR) has the potential to strengthen the bridge between state data and information and academic research that in time would improve decision-making capabilities for our public, community, and business leaders. Unfortunately, NPWR, in its current iteration, faces two major drawbacks:

1. The amount of data available, as it relates to labor force, wages, employment, unemployment, and business reporting, is severely limited; and
2. Ease and simplicity of use of the data portal and access to the data requested is thwarted by administrative obstacles.

First, the only time-series variable currently available from the Nevada Department of Employment, Training and Rehabilitation (DETR) is quarterly wage data from 2010 to 2022. Why this is the only data series available through the portal even though this public agency is the state's chief employment and unemployment agency is unclear. Since employment and unemployment data are the closest information Nevada has on the well-being of its working age population, it means we face challenges not only in identifying problems that are costing the taxpayer money, but also in our ability to fix them.

Examples of additional data that would be helpful for Nevada's chief employment agency to provide would be firm size, sector size, or overall summary statistics on unemployment. Moreover, providing data beyond the number of individuals by county (i.e., instead of by sector) and including summary statistics on age, race, ethnicity, and gender whenever possible would also be beneficial. As the second most diverse state in the nation, it is imperative to assess the employment situation as it differs by demographic group as much as it does by county.

Another limitation of the quarterly wage data provided by DETR is that much of what ostensibly was available in NPWR was actually missing in practice, such as the North American Industry Classification System (NAICS) subsector or county. This meant that we were unable to include a substantial portion of data in the analysis, given that **56.8 percent** of the data did not show the county and **22.7 percent** did not include NAICS code. For example, when only looking at the 2022 data, **57.4** and **32.2 percent** of the data did not display the county and NAICS codes, respectively. If we are to provide a rigorous analysis of labor force participation trends in Nevada, this data is necessary to the endeavor.

Second, the current NPWR interface is not intuitive. A 12-step process to request, certify, and receive government data—albeit sensitive—poses a challenge. If these data are to be accessible to academic researchers, the process needs to be streamlined. Since none of the information has identifiable markers—and the research does not require Institutional Review Board approval, as it does not use human subjects—the lengthiness of the process is puzzling. A similar database by the federal government, the Integrated Public Use Microdata Series (IPUMS) (which is also used in academia), uses a much more simplified process to sign up, certify, and request similar workforce data. Privacy consent forms should be completed during the sign-up process and not

while requesting the data. Similarly, certifying managers of the data and justifications for why each data series is being pulled should be streamlined.

As noted above, NPWR has great potential to enhance business and academic research that can inform policymakers and improve decision-making capabilities for our public, community, and business leaders. Without further changes to ease of access and additional non-public information from state agencies, however, NPWR will be limited in its use for academic research on workforce, despite its potential to enhance Nevada's research and policy process.

APPENDIX C. FURTHER EXPLANATION OF MISSING DATA FROM NPWR SYSTEM

We also received quarterly wage data from the NPWR system, which contains an anonymous key for each employee, a county code, county code, North American Industry Classification System (NAICS) code, and wage by quarter from the first quarter of 2017 to the fourth quarter of 2022. The data, however, are limited by a notable number of missing observations that poses a threat to inference.

Specifically, the data lacks a large portion of county codes and NAICS codes. Moreover, CBER observed the presence of some duplicated rows in the data, but we assumed there were no duplicates in the data provided by NPWR with an assumption that some individuals might have been paid the same amount twice within a quarter. As a result, we did not remove any potential duplicates detected by the R software used for analysis. For example, more than **50 percent** of data do not provide county information and **12.2 percent** of employees' sectors were not included in the 2017 first quarter data, which increases to **32.6 percent** in the third quarter of 2022.

In addition, CBER was provided with an incomplete dataset for the fourth quarter of 2022. The NPWR data indicates there were only **327,132 employees** in Nevada for 2022 (fourth quarter), while NPWR data documented **1,514,939 employees** for the third quarter of 2022. **Figure 14** displays the proportion of employment and wage for those who did not report their sectors.⁶⁴

As we cannot determine the proportion of employees by sector within those who did not report their NAICS code, these data are of limited value to evaluate the actual wage levels by sector compared to the Nevada Department of Employment, Training and Rehabilitation's (DETR's) Quarterly Census of Employment and Wages (QCEW) raw data, which CBER directly receives from DETR. We analyzed wage data removing these individuals who do not report their sectors and presented the proportions of employment and wages for the selected sectors in **Figure 15**.⁶⁵

Comparing **Figure 15** to **Figures 3** and **4** implies that newer companies might have not provided complete information about their individual employees, such as the NAICS codes and counties. Moreover, individuals with higher incomes might be less inclined to disclose their complete information based on the following observations.

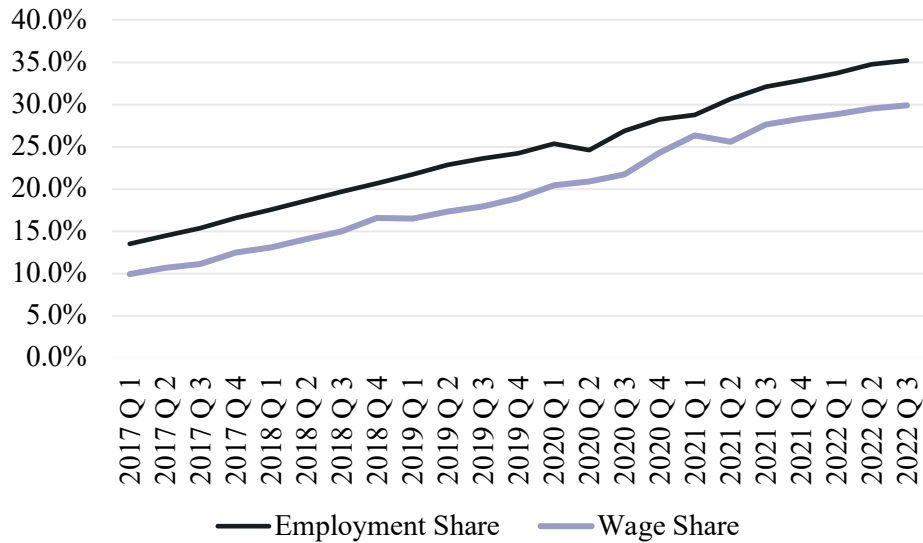
First, the proportion of leisure and hospitality and retail employment is higher with the NPWR data (excluding those who did not report NAICS codes) compared to CBER's calculations with QCEW raw data. That is, **25.9** and **13.8 percent** of employment in leisure and hospitality and retail trade reported with the NPWR data compared to **22.7** and **10.1 percent**, respectively, with QCEW raw data. Second, the NPWR data indicates that transportation and warehousing employees have been paid less than the average wage for all sectors, while QCEW raw data suggests that employees in this sector started to get lower-than-average wages after the pandemic. Finally, for healthcare and social assistance employment, the NPWR data show a higher proportion of **11.6 percent**

⁶⁴ Wage data from NPWR system.

⁶⁵ Wage data from NPWR system.

compared to **10.3 percent** in the third quarter of 2022, but the wages proportion for the NPWR data was only **12.0 percent** compared to **11.7 percent** for QCEW raw data.

Figure 14. Proportion of Employment and Wages Missing North American Industry Classification System (NAICS) Codes to the Total Employment and Wages in Nevada (Q1 2017 – Q3 2022)



Source: Nevada Department of Employment, Training and Rehabilitation

Figure 15. Relationship Between the Labor Force Participation Rate and Proportion of the Population Ages 65 and Over (2021)

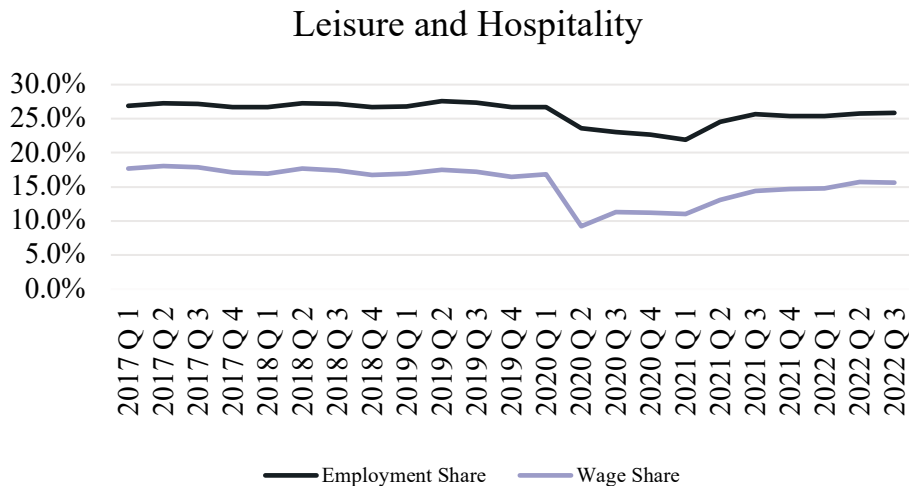
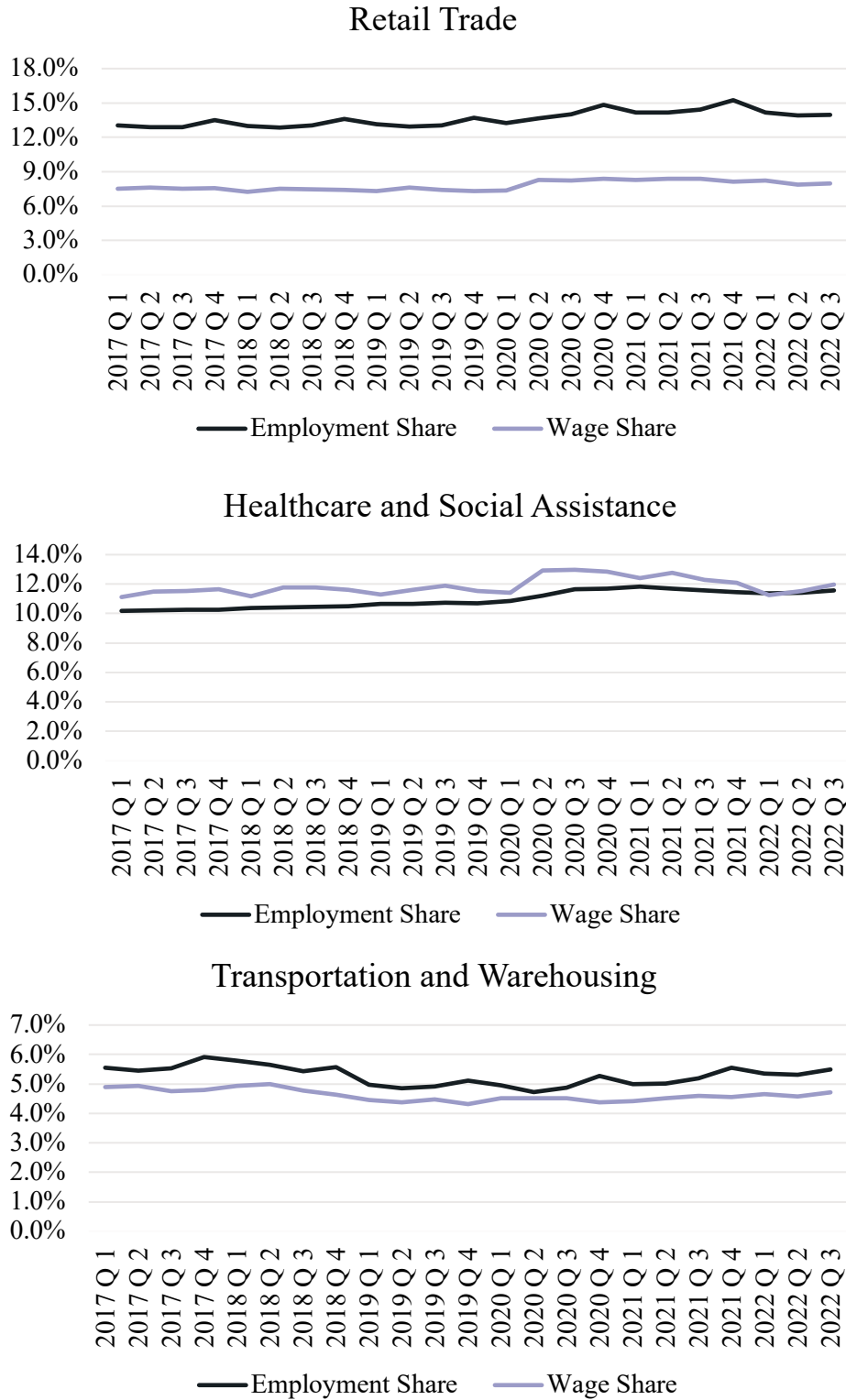


Figure 15 (cont.). Relationship Between the Labor Force Participation Rate and Proportion of the Population Ages 65 and Over (2021) (Q1 2010 – Q4 2022)



Source (Figure 15): Nevada Department of Employment, Training and Rehabilitation

Note: The proportions were calculated based on the sum of employment and wage for those who reported their NAICS codes.

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