Location Quotient and Where Jobs Are

Student Document

Objective

This lesson introduces you to the Bureau of Labor Statistics website for the purpose of determining the most likely areas where jobs of a certain occupation can be found.

Directions

1. Read the introduction below:

Introduction

Senior year of high school is an exciting time in a young person's life!

Since kindergarten, for 13 long years, "next year" simply meant moving on to the next grade level. But now it's time to make some choices; it's time to make decisions that will affect the rest of your life.

Although this is truly an exciting time, it can also be a bit scary. You might pause, reflect and ask, "Am I making good choices?"

Some young people can't wait for what lies ahead! They have discovered their passion. They know what they want to do and what career they wish to pursue. So, some of the choices are clear. To prepare for a career, there may be higher education and training in the immediate future.

What then?

Once the prep work is done, the degree has been earned and the training successfully completed, it's time to search of that first big break that gets you into your chosen career.

More choices!

A little help here would be useful, wouldn't it?

Of course, common sense can go a long way toward making good, informed decisions.

For example, let's say your passion is to be a lawyer. You follow all the right advice and get the necessary education and training. Now it's time to search for your first position. Where would you look? Lawyers are needed most everywhere in the country, but are they more prevalent in certain areas? How many jobs are out there?

Would it surprise you to learn that states with the most lawyers are California and New York? Would it be useful to know that, while California and New York have the most jobs in this occupation, the District of Columbia has a *concentration* of lawyers 10 times that of California and New York, and lawyers in DC are the highest paid in the country?

Maximizing the efficiency of your job search can be done with a little help from the federal government. The Bureau of Labor Statistics gathers employment information that can help you in your search. Before we visit the site, we should define a few terms, so your time spent on the site can be most useful.

2. **Concentration of Occupation:**
    a. The concentration of occupational employment is a simple ratio.
    b. Given a geographical area (like a state or a county within a state) we calculate the concentration of an occupation in that area by dividing the number of jobs **in that occupation** in that area by the **total number of jobs** in the area.

3. **Location Quotient:**
    a. A similar calculation can be made called the location quotient (LQ) of an occupation of an area.
    b. This calculation is used to compare the relative concentration of an occupation in an area (say, in a state) to the concentration of the occupation in a larger area (say, in the entire country).

4. Here is an example:
    a. The concentration of lawyers in **California** is a certain percentage.
    b. The concentration of lawyers in the **entire country** is another percentage.
    c. Taking the **ratio** of concentration in California to the concentration in the country gives us the LQ of lawyers in California (1.04).

5. Here is the formula for determining the LQ:

    Location Quotient =

$$\frac{\text{(Area occupational employment / Area total employment)}}{\text{(U.S. occupational employment / U.S. total employment)}}$$

6. When we analyze this number:

    - LQ = 1 means the concentration of an occupation in an area is the same as the concentration of that occupation in the nation.
    - LQ < 1 means the concentration of an occupation in an area is less than the concentration of that occupation in the nation.

- LQ > 1 means the concentration of an occupation in an area is greater than the concentration of that occupation in the nation.

7. Now, using specific numbers, if the concentration of an occupation in a state is 0.21 and the concentration of that same occupation is 0.04 nationally, then the LQ of this occupation in this area is:

$$\frac{0.21}{0.04} = 5.25$$

This means the concentration of this occupation is 5.25 times higher than the national average, and this area might be a great place to start looking for a job.

US Bureau of Labor Statistics

8. The Bureau of Labor Statistics is a part of the United States Department of Labor and maintains data on employment, among many other things. The agency's website on Occupational Employment Statistics is quite useful for researching where the jobs are and what they pay.

9. You can access that website here: BLS - Occupational Employment Statistics or directly paste this address into your browser: http://www.bls.gov/oes/current/oessrcst.htm. Below is what the website looks like when you click on the link.

10. To learn how to navigate and understand the data presented on this site, we will follow through with our sample of a **lawyer**.
    a. Directly below the national map is a link that says: **May 2013 National Occupational Employment and Wage Estimates**.
    b. Click on it.

11. Notice the **Major Occupational Groups** listed in the middle of the screen. Each major group has a 2-digit index followed by a 4-digit sub-index.

12. Scroll down to index 23, **23-0000 Legal Occupations**, and click on it.

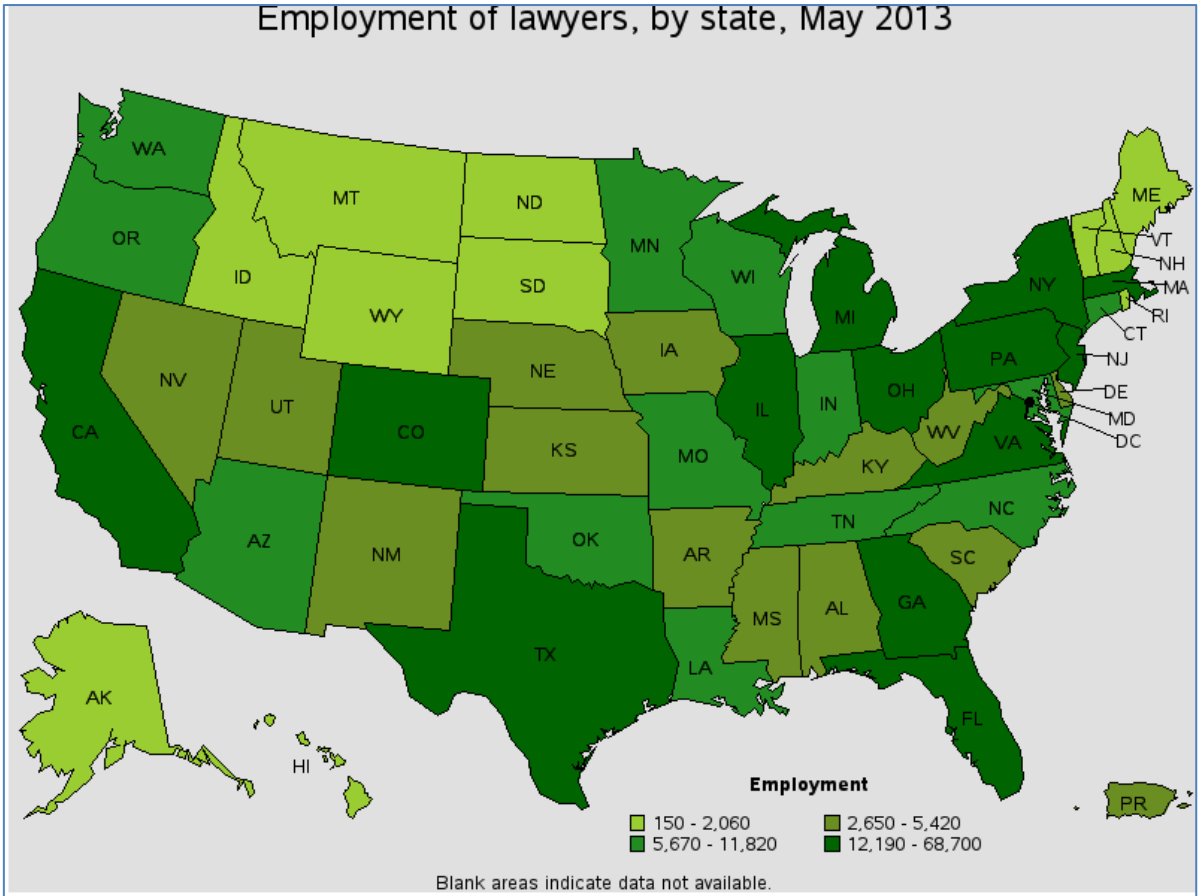
Occupation code	Occupation title (click on the occupation title to view its profile)	Level	Employment	Employment RSE	Employment per 1,000 jobs	Median hourly wage	Mean hourly wage	Annual mean wage	Mean wage RSE
23-1010	Lawyers and Judicial Law Clerks	broad	603,560	0.6%	4.552	$54.24	$62.78	$130,580	0.6%
23-1011	Lawyers	detail	592,670	0.7%	4.470	$54.95	$63.46	$131,990	0.6%
23-1012	Judicial Law Clerks	detail	10,890	1.8%	0.082	$22.90	$25.91	$53,890	2.0%
23-1020	Judges, Magistrates, and Other Judicial Workers	broad	48,280	1.2%	0.364	$44.96	$46.48	$96,690	1.0%
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	detail	14,270	0.5%	0.108	$41.92	$43.09	$89,630	0.4%

13. Now scroll down to **23-1011 Lawyers**, and click on it.

14. This page has a great deal of information about the **lawyer** occupation.

15. First, notice that the **mean annual wage** is **$131,990**.

16. Now, scroll down to the first graphical chart by state.



States with the highest employment level in this occupation:

State	Employment (1)	Employment per thousand jobs	Location quotient (9)	Hourly mean wage	Annual mean wage (2)
California	68,700	4.67	1.04	$74.88	$155,750
New York	68,640	7.95	1.78	$73.79	$153,490
Florida	40,960	5.50	1.23	$59.15	$123,040
Texas	39,190	3.59	0.80	$64.52	$134,200
District of Columbia	31,810	47.78	10.69	$78.27	$162,800

17. This chart shows the **states with the highest employment level in this occupation**. Graphically, you can see that the highest concentrations of jobs are in states shaded in the darkest green.

18. Notice in the table below the graph, California ranks first in the number of jobs with 68,700 and an **LQ** of 1.04. This indicates that in California, the concentration of lawyers is only slightly higher than the national average.

19. Now, notice that New York has almost as many lawyers as California and New York's **LQ** says that the concentration of lawyers in New York is higher than in California.

20. Pay attention to the fact that the District of Columbia is fifth on the list of **states with the highest employment level**. Also, notice the District of Columbia's **LQ**.

21. Continue scrolling down to the next graphical chart.

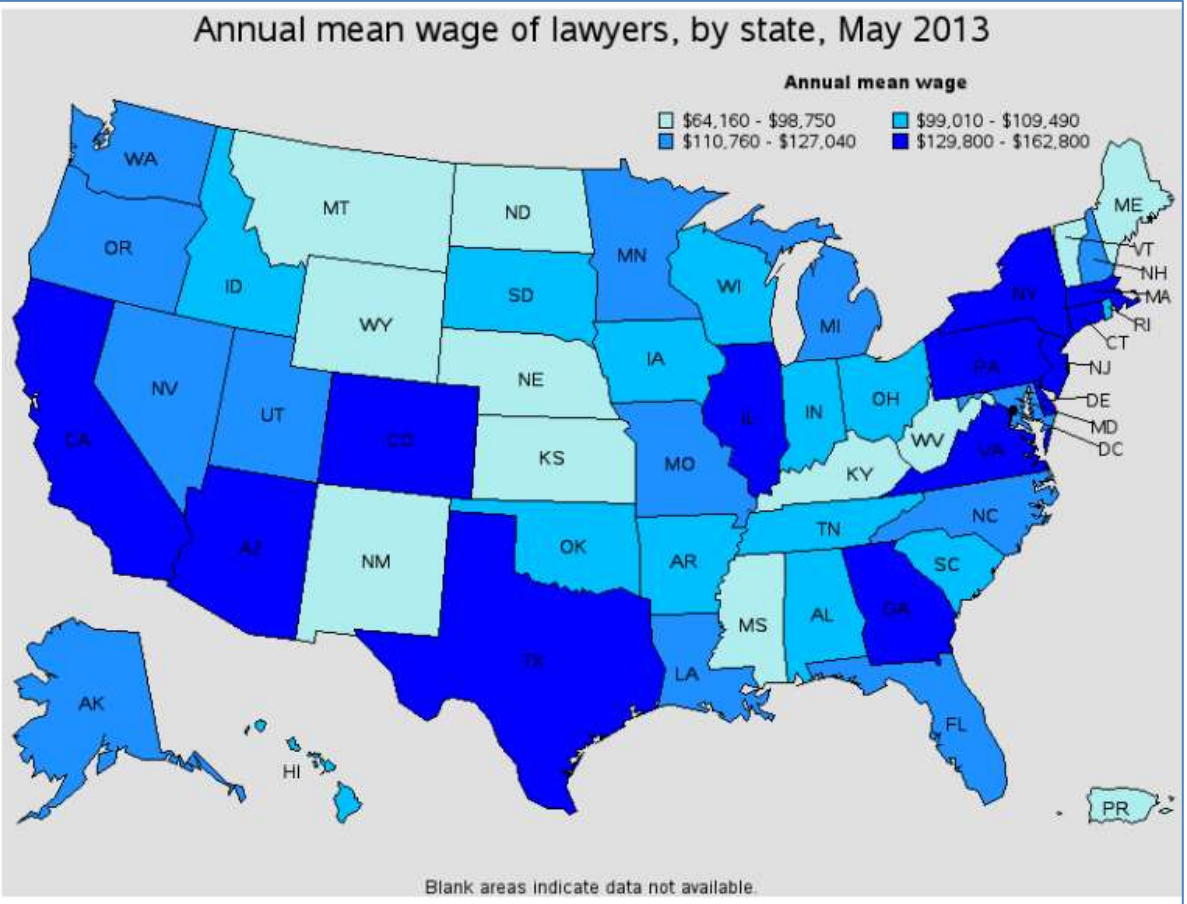
States with the highest concentration of jobs and location quotients in this occupation:

State	Employment (1)	Employment per thousand jobs	Location quotient (9)	Hourly mean wage	Annual mean wage (2)
District of Columbia	31,810	47.78	10.69	$78.27	$162,800
New York	68,640	7.95	1.78	$73.79	$153,490
Delaware	2,810	6.81	1.52	$73.31	$152,490
Florida	40,960	5.50	1.23	$59.15	$123,040
Massachusetts	17,530	5.38	1.20	$64.61	$134,380

22. This chart shows the **states with the highest concentration of jobs and location quotients in this occupation**:

    a. The District of Columbia leads the pack by far, not because of the number of jobs but because the LQ is more than 10 times the national average.

23. Finally, scroll down to the next graphical chart.



Top paying States for this occupation:

State	Employment (1)	Employment per thousand jobs	Location quotient (9)	Hourly mean wage	Annual mean wage (2)
District of Columbia	31,810	47.78	10.69	$78.27	$162,800
California	68,700	4.67	1.04	$74.88	$155,750
New York	68,640	7.95	1.78	$73.79	$153,490
Delaware	2,810	6.81	1.52	$73.31	$152,490
Connecticut	7,560	4.62	1.03	$67.27	$139,920

24. This chart shows the **top paying states for this occupation**:

    a. This table is sorted by **annual mean wage**.

    b. While California and New York have the highest number of jobs, the annual mean wage for a lawyer in the District of Columbia surpasses the annual mean wage in both of those states.

25. To summarize the data, we can gather information together:

Mean Annual Wage (National): $131,990					
Highest Employment (Jobs)		**Highest LQ**		**Highest Pay (Annual)**	
California	68,700	District of Columbia	10.69	District of Columbia	$162,800
New York	68,640	New York	1.78	California	$155,750
Florida	40,960	Delaware	1.52	New York	$153,490
Texas	39,190	Florida	1.23	Delaware	$152,490
District of Columbia	31,810	Massachusetts	1.20	Connecticut	$139,920

26. From the table above, we can make these assertions:
    a. The most jobs are by far are in California and New York.
        i. These states rank 2nd and 3rd on the list of highest paid.
    b. California lands in the top 5 under number of jobs and of highest paid.
        i. California has an **LQ** only slightly higher than the national average.
    c. New York has an **LQ** higher than California and only slightly fewer jobs.
    d. New York is 3rd on the list of highest paid, only slightly behind California.

27. So, how would you use this data to focus your job search?

28. Let's practice. Below are four occupations for you to research. Fill in the summary table. Remember to include the mean annual wage (national) for each occupation. Then, write a sentence or two describing how you would proceed with locating a position in each occupation based on the data you found.

a. Occupation: **15-1132 Software Developers, Applications**

Mean Annual Wage (National): $					
Highest Employment (Jobs)		Highest LQ		Highest Pay (Annual)	
State	# of Jobs	State	LQ	State	$ Amount

How I would proceed:

b. Occupation: **17-2051 Civil Engineers**

Mean Annual Wage (National): $					
Highest Employment (Jobs)		Highest LQ		Highest Pay (Annual)	
State	# of Jobs	State	LQ	State	$ Amount

How I would proceed:

c. Occupation: **11-9111 Medical and Health Services Managers**

Mean Annual Wage (National): $					
Highest Employment (Jobs)		Highest LQ		Highest Pay (Annual)	
State	# of Jobs	State	LQ	State	$ Amount

How I would proceed:

d. Occupation: **47-2111 Electricians**

Mean Annual Wage (National): $					
Highest Employment (Jobs)		Highest LQ		Highest Pay (Annual)	
State	# of Jobs	State	LQ	State	$ Amount

How I would proceed:

Exit Ticket

The Bureau of Labor Statistics website contains valuable information about occupational employment, both nationally and broken down by state. This information can help guide a job search, but your unique circumstances and preferences may not align with the top 5 states in any one category. Geographical preference, family considerations, proximity to institutions of higher learning and many other parameters may be important to you when you begin your search for career opportunities.

Below is an exit ticket for you to complete. Use the Bureau of Labor Statistics website to research the career of your choice. Fill out the first table based on the top 5 given by the website. Then, fill out the second table for the state where you would most like to see yourself settle. Record that state's data, and place a check mark in the appropriate box if your chosen state ranks among the top 5 for employment, LQ or annual pay. Write why you chose this state above all others.

Occupational Group Index and Title:

Mean Annual Wage (National):

Highest Employment (Jobs)		Highest LQ		Highest Pay (Annual)	
State	**# of Jobs**	**State**	**LQ**	**State**	**$ Amount**

My Choice:

State	Employment	LQ	Mean Annual Wage	✓ Highest 5 Employment	✓ Highest 5 LQ	✓ Highest 5 Pay

Why I chose this state: