

RETURNS TO CERTIFICATION

Christos A. Makridis

January 2020

THIS PAPER

There is increasing evidence that certifications create an earnings premium, but much less is known about how these workers feel about their organizations and how they perform in them.

This paper uses new data to establish three stylized facts:

- 1 Certificate holders incur an earnings disadvantage
- 2 Little differences in organizational climate measures
- 3 Suggestive evidence of a performance premium

ROADMAP

- ① Data and Measurement
- ② Descriptive Statistics

ROADMAP

- ① **Data and Measurement**
- ② Descriptive Statistics

PAYSCALE SURVEY TOOL



PayScale

For You

For Your Business

Compensation Research

HOW SHOULD I PAY?

When you get pay right, you attract and retain the best talent.

WHAT WORTH

What your skills are worth in the market is constantly changing.

PAYSCALE SURVEY TOOL

PayScale Salary Survey

Choose the option that best describes you:



Current Job

I want salary information for my current job

Select



Job Offer

I am evaluating a job offer

Select



Just Exploring

I am researching a job that is not my own

Select

PAYSCALE SURVEY TOOL

Your Job Title & Location

Let's start building your report with the basics, like your job title, location and experience. PayScale has collected salary and career data from more than 54 million people, covering 16,000 unique job titles.

Your job title

Years in field/career

City

[United States](#)

Next

PAYSCALE SURVEY TOOL

Any Special Considerations?

Enter any job skills or attributes if they apply to you.

Skill/specialty critical to your job (limit to top 3)

Policy

Policy Analysis

Policy Development

Legislative Policy

Statistical Analysis

Data Modeling

Econometrics

[Load More](#)

Relevant certification/license

Start by typing an answer

- Chartered Financial Analyst (CFA)
- Project Management Professional (PMP)
- Master Training Specialist Certification
- Certified Cost Consultant (CCC) / Certified Cost Engineer (CCE)

PAYSCALE SURVEY TOOL

Education & Demographics

For some jobs, education is one of the key forms of qualification.

Select your highest degree completed

Associates	Bachelors	Other
------------	-----------	-------

Other degree completed

Doctorate school name

Type of doctorate degree

Major/specialty

Optional Research Questions

We've begun collecting other types of data to help us build new features, provide interesting insights for you, or provide more useful information on our Research Center. These questions are completely optional. But, we'd sure love to know what you think.

How satisfied are you in your job

Extremely satisfied ▼

How stressful is your job/work environment

My job is relaxing ▼

Does your work make the world a better place

Very much so ▼

Next

PAYSCALE SURVEY TOOL



Sign up for a free account
to save your salary reports

Sign Up

Already have an account? [Log In](#)



Reports

CURRENT JOB

Senior Economist, White
House

+ Start a new report

Education & Skills

Jobs For You

Your Current Pay

You: \$90k

Range ⓘ

\$73k - \$135k

Difference from Median

▼ \$4k

\$73k
(Low)

\$94k
(Median)

You're making less money than 58% of people like you

Your Market Worth Over Time

SURVEY QUESTIONS

Variable	Question Text
Intent to leave	In the next 6 months, I plan on actively seeking new jobs outside of my current company. (1/0 indicator)
Job satisfaction	I am extremely satisfied working for my employer.
Relative performance	I am the top performer at my company for jobs similar to mine.
Pay transparency	How pay is determined at my company is a fair and transparent process.
Employer rating	How did your employer rate you in your last review?
Communication	There is frequent, two-way communication between management and myself.
Training	My employer provides me with sufficient opportunities for learning and development.
Appreciation	I feel appreciated at work.
Firm future	I am confident my employer has a bright future.
Management	I have a great relationship with my direct manager.

ROADMAP

- ① Data and Measurement
- ② **Descriptive Statistics**

Figure: Characteristics of Certificate Holders

	Has a Certificate			
	(1)	(2)	(3)	(4)
Age	.001*** [.000]	.001*** [.000]	-.001 [.001]	.000 [.001]
Male	-.028 [.017]	-.020 [.014]	-.039 [.044]	-.012 [.040]
Experience	.001* [.000]	.001 [.000]	.002*** [.001]	.003*** [.001]
White		-.009** [.004]		-.040*** [.008]
Tenure		.000 [.000]		-.000 [.001]
log(Firm Size)		-.006*** [.001]		-.009*** [.003]
R-squared				
Sample Size	1213563	155035	233911	27888

Figure: Earnings Differences Among Certificate Holders

	log(Annual Real Earnings)				
	(1)	(2)	(3)	(4)	(5)
Has Certificate	-.259*** [.055]	-.264*** [.046]	-.145*** [.041]	-.131*** [.035]	-.065** [.028]
Age		.002 [.001]	.002** [.001]	.003*** [.001]	.003*** [.001]
Male		.221*** [.048]	.165*** [.019]	.125*** [.012]	.142*** [.023]
Experience		.020*** [.002]	.018*** [.002]	.017*** [.001]	.015*** [.001]
R-squared	.01	.19	.40	.66	.37
Sample Size	1387172	1213563	1213563	642301	233898
Controls	No	Yes	Yes	Yes	Yes
Occupation FE	No	No	Yes	Yes	Yes
Time FE	No	No	Yes	Yes	Yes
Firm FE	No	No	No	Yes	No
Full Sample?	Yes	Yes	Yes	Yes	No

Figure: Job Satisfaction Differences Among Certificate Holders

	Overall Job Satisfaction (z-score)				
	(1)	(2)	(3)	(4)	(5)
Has Certificate	-.037*	-.037**	.003	.009	-.006
	[.019]	[.015]	[.010]	[.010]	[.006]
Age		.004***	.004***	.005***	.003***
		[.001]	[.001]	[.000]	[.000]
Male		.037	.055***	.060***	.040**
		[.024]	[.016]	[.014]	[.014]
Experience		-.000	-.001	-.002***	-.001
		[.001]	[.001]	[.001]	[.001]
R-squared	.00	.00	.02	.24	.03
Sample Size	1351218	1188557	1188557	631689	229157
Controls	No	Yes	Yes	Yes	Yes
Occupation FE	No	No	Yes	Yes	Yes
Time FE	No	No	Yes	Yes	Yes
Firm FE	No	No	No	Yes	No
Full Sample?	Yes	Yes	Yes	Yes	No

Figure: Intent to Leave Differences Among Certificate Holders

	Intent to Leave (yes/no)				
	(1)	(2)	(3)	(4)	(5)
Has Certificate	.014 [.010]	.022** [.008]	.002 [.006]	.002 [.004]	.003 [.004]
Age		-.001*** [.000]	-.001*** [.000]	-.001*** [.000]	-.001** [.000]
Male		.014* [.007]	.015** [.007]	.013*** [.004]	.025*** [.005]
Experience		-.001*** [.000]	-.001*** [.000]	-.001** [.000]	-.001*** [.000]
R-squared	.00	.00	.01	.24	.02
Sample Size	1274130	1124489	1124489	602973	216318
Controls	No	Yes	Yes	Yes	Yes
Occupation FE	No	No	Yes	Yes	Yes
Time FE	No	No	Yes	Yes	Yes
Firm FE	No	No	No	Yes	No
Full Sample?	Yes	Yes	Yes	Yes	No

Figure: Performance Differences Among Certificate Holders

	Top Performer	Employee Rating
	(1)	(2)
Has Certificate	.037***	.019**
	[.008]	[.008]
R-squared	.04	.03
Sample Size	128760	105671
Controls	Yes	Yes
Occupation FE	Yes	Yes
Time FE	Yes	Yes
Firm FE	No	No
Full Sample?	No	No

Figure: Organizational Climate Differences Among Certificate Holders

	Transparency	Communication	Development	Appreciation	Management	Meaning
	(1)	(2)	(3)	(4)	(5)	(6)
Has Certificate	.028*** [.007]	-.010 [.006]	-.024** [.010]	-.034*** [.006]	-.012 [.010]	.039* [.019]
R-squared	.02	.03	.02	.02	.02	.09
Sample Size	112729	222156	223534	219788	219126	94865
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	No	No	No	No
Full Sample?	No	No	No	No	No	No

CONCLUDING REMARKS

Using new data on millions of workers, this paper investigates the characteristics and labor market & organizational differences between certificate holders and their counterparts.

- ① Certificate holders incur an earnings disadvantage
- ② Little differences in organizational climate measures
- ③ Suggestive evidence of a performance premium