



ISSUE BRIEF: LABOR

Improving U.S. labor standards and the quality of jobs to reduce the costs of employee turnover to U.S. companies

December 2020 By Kate Bahn and Carmen Sanchez Cumming

Overview

Implementing policies that improve job quality in the United States could come with a direct cost, such as the cost to a U.S. company from raising wages or providing more paid time off. For these reasons, business interests often argue against policies that improve U.S. labor standards. Yet these qualms are short-sighted. Research on the cost of employee turnover reveals that it costs an average of 40 percent of an individual employee's annual salary to find a replacement if that employee leaves in search of better job opportunities.

In contrast, U.S. labor market policies that improve job quality have been shown to increase job tenure. Reducing the cost of employee turnover and improving the well-being of workers reinforce each other to the benefit of both companies and workers.

This issue brief reviews the economic literature on the cost of employee turnover. We present the evidence that there is a dollar value to replace a worker and get the next hire up to speed, which could be deferred by keeping those workers in their jobs if it

is an otherwise good fit for their skills and passions. The costs of turnover range from 2 percent to almost 150 percent and vary across industries, but the sum of this research demonstrates the case for providing better jobs in the first place.

The research on employee turnover also points us to the solutions. Raising the floor on job quality sorts workers into jobs for which they are best matched. And employers are less likely to risk losing good workers when they search for the benefits needed to improve their well-being. These policy solutions include increasing earnings with policy tools such as minimum wages, giving workers a voice in their workplaces, and enforcing anti-discrimination protections so that no worker feels stuck between a hostile workplace and unemployment.

How employee turnover costs U.S. businesses revenues and profits

For businesses, the cost of losing and replacing a worker goes well beyond the cost of a new hire. These costs can amount to big financial losses. Because jobs in high-turnover industries and occupations are associated with low wages and lack of access to employer-provided benefits, the rate at which employees leave and are replaced has important [implications for both workers and employers](#). Yet many businesses [do not know or underestimate](#) the toll that high turnover has on their workforce, their sales, and their bottom lines.

Studies that estimate the cost of losing and replacing a worker generally takes into account direct expenses such as the resources that go into advertising an open position, interviewing and screening candidates, and onboarding a recently hired worker. Consider the [analysis](#) of Iowa's direct care professionals—home health aides, nurse assistants, and patient care technicians—that shows paying overtime to make up for the loss of capacity while a position is vacant, recruiting, and training a new hire amounted to \$4,026 per worker in 2013. Because these positions tend to pay low wages, provide few benefits, and expose workers to injuries, that year's high turnover is estimated to have cost service-providing companies in Iowa almost \$200 million in direct expenses alone.

And turnover also has indirect, less-easy-to-observe costs. A [study](#) analyzing the U.S. supermarket industry finds that when accounting for opportunity or indirect costs of an employee leaving (such as paperwork errors or the loss of customers due to a decline in the quality of service), per-employee turnover costs more than doubled. For instance, the direct replacement costs of a nonunion supermarket

cashier averaged \$736 in 2000, but this number jumped to \$1,550 when factoring in indirect costs. As such, estimates can vary widely not only because expenses are different across sectors and job types, but also because academic researchers and employers use a wide range of inputs to arrive at a dollar value of losing and replacing a worker. As a result, calculations tend to represent a conservative estimate of the true cost of turnover.

That being said, high turnover is more prevalent in some industries than others. The rates of quits and layoffs—the total number of quits and layoffs in a given period of time as a share of total employment—are highest in leisure and hospitality, construction, and retail. That workers in service industries such as retail and leisure and hospitality are particularly likely to voluntarily leave their jobs is, in no small part, a function of low pay (these two sectors have the [lowest average wages](#) among the major U.S. industries), [lack of access to employer-provided benefits](#), and management practices that chip away at workers’ sense of well-being and job security, such as [unpredictable work schedules](#). (See Figure 1.)

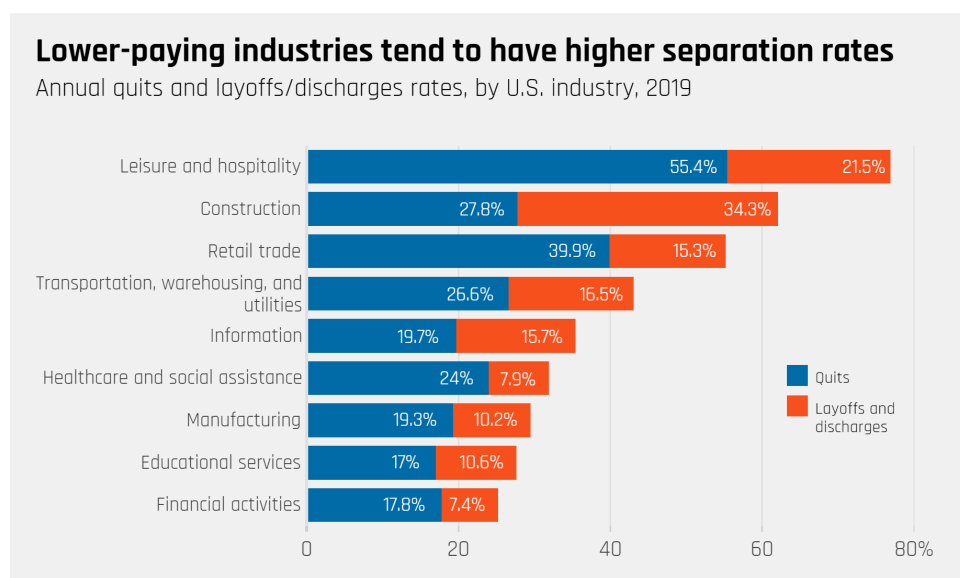


FIGURE 1

The rates of quits and layoffs—the total number of quits and layoffs in a given period of time as a share of total employment—are highest in leisure and hospitality, construction, and retail.

Note: The rates are the number of total quits or layoffs/discharges during the entire year as a percent of total employment.

Source: U.S. Bureau of Labor Statistics, “Job Openings and Labor Turnover Survey” (2019).

In this issue brief, we analyze 37 case studies in 14 research articles published between 2000 and 2020 (see Table 1 in the Methodological Appendix for a summary of the studies and calculations for each position). The main estimates pool 31 case studies in order to calculate turnover costs as a percent of a given position’s average annual wage, and include jobs in the healthcare, education, hospitality, finance, retail, transportation, and manufacturing industries. The results are the following:

- On average, turnover costs represent 39.6 percent of a position's annual wage. Across the 31 case studies included in our estimates, the median cost of turnover represented 23.5 percent of a worker's annual wage.
- For workers earning less than the 2019 average annual wage ([\\$53,490](#)), turnover costs made up 19.3 percent of their annual wage.
- In the two major sectors for which at least five case studies are available, turnover costs as a share of average annual wage are as follows: health services (32.7 percent) and hospitality (19.6 percent).

Emblematic of these findings are the overall costs of replacing a worker across industries up and down the U.S. wage ladder in the 21st century. (See Figure 2.)

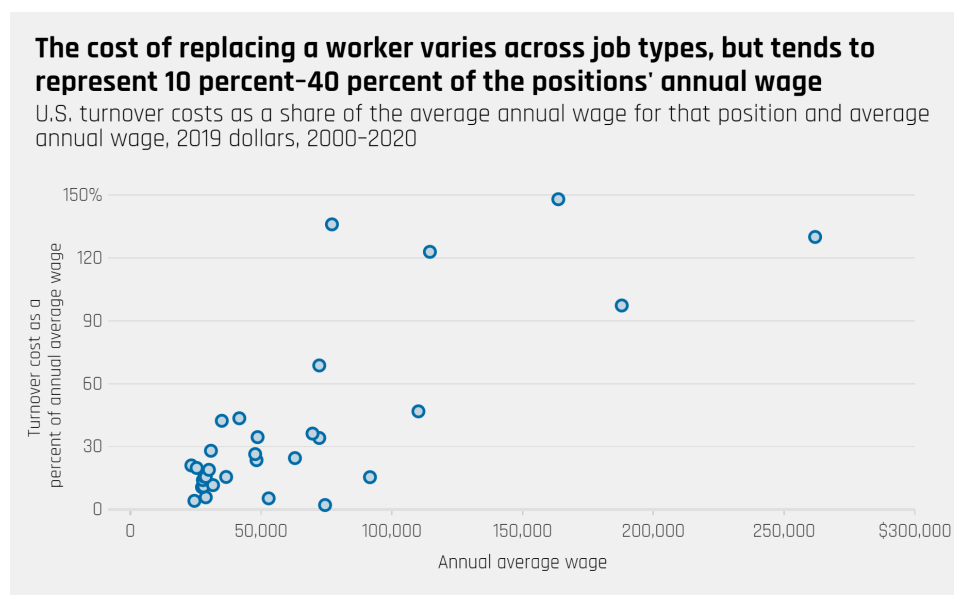


FIGURE 2

On average, turnover costs represent 39.6 percent of a position's annual wage.

Source: Author's analysis of 31 case studies on the cost of worker turnover.

Reduce employee turnover by increasing U.S. job quality

One of the most basic ways reduce turnover and increase job tenure is to improve job quality by increasing earnings. In the United States, the minimum wage is the strongest tool to do this. Like other labor policies, opponents of the minimum wage argue that it imposes too high of a cost on businesses, which will respond by reducing employment levels. Yet [the breadth of high-quality research on the minimum wage](#) demonstrates that increasing the statutory minimum wage did not

reduce employment and increased worker tenure. Across low-wage work and within critical industries such as [nursing homes](#), increasing wages has positive effects for workers and the provision of services, with minimal costs to businesses.

[In an Equitable Growth working paper](#) by Kevin Rinz and John Voorheis of the U.S. Census Bureau, the authors use administrative data to follow workers who, over time, were affected by a minimum wage increase in their local labor market. They find that workers in affected jobs experienced wage increases and did not lose employment, which ultimately leads to longer job tenure and increased earnings growth at the lower end of the income distribution. These findings are reinforced by the broad trend of [estimating the impact of the minimum wage with administrative data](#) and increasing the accuracy of findings. These estimates show that long-term earnings are increased without reducing employment levels.

The studies reviewed in this issue brief are across a wide variety of occupations, industries, and income levels, many of which would not be directly impacted by a minimum wage increase. But this does not mean statutory wage levels cannot be instituted across earnings levels to improve job quality and increase worker tenure. In Equitable Growth's [Vision 2020: Evidence for a stronger economy](#), an essay by Arindrajit Dube of the University of Massachusetts Amherst develops a proposal for [establishing wage standards](#) by industry and occupation so that workers are able to receive earnings aligned with the value they create.

Reduce employee turnover by improving U.S. labor standards

Another metric of job quality is worker voice in their jobs, which, in the United States, is primarily achieved by unionization. In a paper on [the impact of unions on job satisfaction and turnover](#), Trove Hammer and Ariel Avgar of Cornell University School of Industrial and Labor Relations find that unionized workers are more likely to remain in their jobs, yet this may reduce some job satisfaction. A study by Steven Abraham and Barry Friedman of the State University of New York at Oswego and Randall Thomas of Ipsos, formerly of Harris Interactive, [surveys workers by union status on job satisfaction and intent to leave a job](#). They find that job dissatisfaction is more strongly correlated with intent to leave for nonunion members, compared to union members.

Union membership subdues the impact of other variables associated with intent to leave a job, increasing the job tenure of unionized workers. A body of research examines why unions may increase job dissatisfaction while still increasing tenure. One theory is that greater information is available to unionized workers, inducing

what Richard Freeman and James Medoff called “voice-induced complaining” in their seminal text, *“What Do Unions Do?”*. A very recent National Bureau of Economic Research working paper by David Blanchflower of Dartmouth College and Alex Bryson of University College London finds that [the relationship between union membership and job satisfaction has become positive](#). Using data from the Gallup U.S. Daily Tracker Poll from 2009 to 2013, they find that unions had a positive effect on job satisfaction in the years following the Great Recession, as the protective effect of unions increased job security among members.

Reducing employee turnover is particularly important to public-sector work, where unions are also more prevalent and where recent attrition in the public-sector workforces is a particular cause for concern. Emma García and Elaine Weiss of the Economic Policy Institute find that there is [a shortage of teachers](#) in the Kindergarten through 12th grade education system that has increased in recent years. In a study on unionized teachers in New York state, Yujin Choi of Ewha Womans University and Il Hwan Chung of Soongsil University find a positive relationship between [the strength of grievance procedures and a lower likelihood of turnover](#). And a report by Rich Jones of the Economic Analysis Research Network on Colorado finds that [turnover in the public sector has increased in the state](#) over the past 10 years—a phenomenon that could be offset by increasing collective bargaining, which would ultimately improve the provision of public services.

Efforts to increase the coverage of collective bargaining agreements in the United States include proposals in Harvard University’s Labor and Worklife Program’s [“clean slate for worker power”](#) agenda that could pave the way to increase unionization and, by association, reduce worker turnover.

In addition to increasing worker voice at their jobs through unionization, worker involvement in workplace decision-making may broadly reduce turnover. In a study with administrative data from Denmark, Elena Cottini of Università Cattolica del Sacro Cuore, Takao Kato of Colgate University, and Niels Westergård-Nielsen of Copenhagen Business School find that [“high-involvement work practices,”](#) where human resources policies allow for workers to produce knowledge in a systematic way and have a say in workplace practices, reduce worker turnover.

Worker involvement in establishment decision-making can also be bolstered through policies such as [co-determination](#), where worker representatives have a seat on corporate boards. In a recent study by Equitable Growth grantees Simon Jäger of the Massachusetts Institute of Technology and Benjamin Schoefer of the University of California, Berkeley, along with Jörg Heining of the German Institute for Employment Research, [co-determination](#) is not associated with higher wages at firms with workers on boards, but also does not negatively impact firm’s bottom line.

Hostile workplaces are also more likely to experience employee turnover, particularly given currently poorly enforced labor laws such as anti-discrimination protections, which give workers little recourse other than to leave their jobs and potentially suffer long-term earnings consequences. Research on [sexual harassment in the workplace](#) finds that it increases employee turnover, which, in turn, constitutes [the greatest cost of sexual harassment for companies](#)—more than litigation costs.

Likewise, lack of representation across race and ethnicity can result in burnout from the few workers from underrepresented groups in a workplace. This dynamic is detailed in [Adia Harvey-Wingfield's](#) recent book *Flatlining: Race, Work, and Health Care in the New Economy*. Then, there is [racial discrimination in healthcare workplaces](#), which is shown to increase employee turnover. Well-enforced anti-discrimination protections, where workers have recourse without fear of retaliation, and workplace inclusion would both create higher-quality jobs for workers of color and women workers.

Conclusion

Improving U.S. labor standards to protect workers from discrimination in the workplace and to boost earnings and workers' voices on the job would benefit their employers by reducing the costs of employee turnover. This issue brief documents that businesses prioritizing low labor costs over job quality are misguided because they do not take into consideration the significant costs of replacing a worker. The research reviewed in this issue brief finds that the cost of turnover is an average of 40 percent of a worker's salary. To avoid these significant costs, workplaces that provide higher-quality jobs, particularly those with decent pay and a voice at work, have lower turnover and longer employee tenure.

Policies to increase earnings through higher minimum wages and wage boards would take a first step in helping companies avoid losing workers. Expanding unionization would go a long way to increasing worker tenure as well. Workers also need to be protected from discrimination and harassment at work, so that they are not left to choose between job security and their own well-being, which often results in them choosing to leave jobs at a cost to both themselves and the company.

Improving the enforcement of U.S. anti-discrimination protections would give workers recourse within their jobs, potentially reducing turnover and limiting costs to the company at the same time. Improving job quality will increase the well-being of workers, who will then be more likely to stay at a job, thus increasing their firm-specific human capital and productivity in a virtuous cycle where workers are able to share in the gains of economic growth.

Methodological Appendix

In this issue brief, we pool estimates of worker turnover costs from 31 case studies included in 13 research articles (selected from 37 case studies in 14 research articles). The studies included in our estimates meet the following criteria:

- They assign a dollar value to the cost of worker turnover for a specific position.
- They include information on how the estimations were calculated.
- Wage or salary data for that position are available.
- They were published between 2000 and 2020.

This research follows previous work by Heather Boushey and Sarah Jane Glynn ([“There Are Significant Business Costs to Replacing Employees,”](#) an issue brief published in 2012 by the Center for American Progress), as well as data analysis by Heather Boushey and Tanya Doriss when they were staff at the congressional Joint Economic Committee.

Estimates in this issue brief, however, were calculated using different data sources and incorporating another set of studies. See Table 1 for a summary of the studies included in this issue brief.

Most studies calculate the cost of employee replacement, but they do not include the salary for that position. In those cases, we assigned an annual mean wage using the National Occupational Employment and Wage estimates from the U.S. Bureau of Labor Statistics’ [Occupational Employment Statistics](#). See Table 2 below for the matches between the job category as described in the study and the occupations as described by the Occupational Employment and Wage estimates.

The Occupational Employment and Wage estimates calculate annual mean wages by multiplying the hourly mean wage by year-round, full-time-equivalent hours (2,080 hours). For some positions that do not tend to work year round, full time, the Occupational Employment Statistics reports hourly wages or annual salaries depending on how they are typically paid. If annual wage data for a given occupation are not available for the year in which the turnover cost was estimated, then the cost is adjusted to the closest year for which data are available. The survey has been modified throughout the years to provide information on more detailed occupational categories. If information on the average annual wage is not available in the study or in the Occupational Employment and Wage estimates, it is excluded from our main analysis.

TABLE 1

Study	Summary of the study	Job category as described in the study	Cost cited in the study	Annual average wage in the year the cost was estimated	Turnover cost as a percent of the annual average wage	Current average wage (2019)
Blake Frank, “New Ideas for Retaining Store-Level Employees” (Coca-Cola Company Retailing Research Council, 2000). ¹	The study analyzes the cost of worker turnover in the U.S. supermarket industry. It uses survey data from 2000, drawing personnel information for more than 170,000 workers in 18 establishments and 10 different companies. The study reports turnover costs for union and nonunion workers, as well as the direct and opportunity costs, such as losing customers because of a decline in the quality of service.	Store manager	\$34,735	\$74,230	46.8 percent	\$141,690
		Department manager	\$7,045 to \$9,964	\$32,170	21.9 percent to 31 percent	\$45,830
		Cashier	\$2,286 to \$4,313	\$15,730	14.5 percent to 27.4 percent	\$24,370
		Other hourly personnel	\$3,372 to \$4,291	\$20,260	16.6 percent to 21.2 percent	\$29,360
Timothy R. Hinkin and J. Bruce Tracey, “The Cost of Turnover: Putting a Price on the Learning Curve,” <i>Cornell Hospitality Quarterly</i> 41 (3) (2000): 14–21.	The study estimates the cost of turnover in hotels in Miami and New York City. To determine turnover costs, the authors include the following broad categories: separation costs, recruiting and attracting costs, selection costs, hiring costs, and lost-productivity costs. For their estimates, the authors create and calibrate an algorithm through interviews with human resources staff and on-site interviews.	Front-office associate	\$5,688 to \$5,965	\$20,780	27.4 percent to 28.7 percent	\$31,250
		Loss-prevention (security) associate	\$3,026	\$19,470	15.5 percent	\$33,030
		Line cook	\$2,077	\$18,880	11 percent	\$28,700
		Administration, sales, catering	\$7,658	\$32,520	23.5 percent	\$43,410
		Gift-shop clerk	\$3,383	\$17,100	19.8 percent	\$25,950
		Room-service wait staff	\$1,332	N/A	N/A	N/A
Michelle I. Graef and Erik L. Hill, “Costing Child Protective Services Staff Turnover,” <i>Welfare</i> 79 (5) (2000): 517–533.	The study estimates the cost of turnover for workers in a child welfare agency in a midwestern state in 1995. The authors calculate the cost of separation, replacement, and training for incoming staff.	Child protective services worker	\$10,000	\$29,017.14 ²	34.5 percent	\$51,030

Frank Kelly and others, “ The Shocking Cost of Turnover in Health Care ,” Health Care Management Review 29 (1) (2004): 2–7.	The study uses accounting records data from an academic medical center in the Southwest. It reflects conservative estimates of the cost of turnover, since overtime pay, productivity declines, administrative overhead, and training materials—costs not observable in accounting data—are excluded from the calculations. The estimates were calculated for 2001. ³	Physicians	\$126,543	\$130,105 ⁴	97.3 percent	\$203,450
		Registered nurses	\$17,460	\$48,240	36.2 percent	\$77,460
		Allied health personnel	\$2,307	N/A	N/A	N/A
		Technical staff	\$1,934	\$36,630 ⁵	5.3 percent	\$47,540
		Support	\$2,533	\$21,902 ⁶	11.6 percent	\$31,010
		Administrative assistants or managers	\$3,926	\$25,370	15.4 percent	\$46,590
Robert C. Atchley and Jane Karnes Straker, “ Recruiting and Retaining Frontline Workers in Long-Term Care: Usual Organizational Practices in Ohio ,” (Oxford, Ohio: Miami University, 1999).	The study estimates turnover costs by conducting more than 100 interviews with administrators for nursing homes and home health agencies in Ohio. The authors find that most establishments greatly underestimate the extent and cost of worker turnover.	Nursing home workers	\$1,685 to \$2,100 ⁷	\$17,860	9.4 percent to 11.8 percent	\$30,790
		Home health agency workers	\$952 to \$1,242	\$18,810	5.1 percent to 6.6 percent	\$26,440
Steve Seninger and Meg A. Traci, “ Direct Service Staff Turnover in Supported Living Arrangements: Preliminary Results and Observations ” (Missoula, MT: Rural Institute of the University of Montana, 2002).	The study estimates turnover costs for community providers of supported living services. In 2002, the authors interviewed seven private service corporations in Montana and calculated the cost of recruiting, screening, and training incoming workers.	Direct service workers for individuals with developmental disabilities*	\$2,627	\$21,674 to \$15,725 ⁸	12.1 percent to 16.7 percent	\$30,808 to \$22,352
Gary Barnes, Edward Crowe, and Benjamin Schaefer, “ The Cost of Teacher Turnover in Five School Districts: A Pilot Study ,” (Washington: National Commission on Teaching and America’s Future, 2007).	The study estimates the cost of teacher turnover in five school districts, collecting data during the 2002–2003 and 2003–2004 school years. The districts in the study include the Chicago, Milwaukee, Granville, Jemez Valley, and the Santa Rosa Public Schools.	School teacher	\$4,366 to \$17,872	\$45,323 ⁹	9.6 percent to 39.43 percent	\$64,470

Eileen Appelbaum and Ruth Milkman, “Achieving a Workable Balance: New Jersey Employers’ Experiences Managing Employee Leaves and Turnover” (New Brunswick, NJ: Center for Women and Work, 2006).	The study estimates turnover costs of various positions in 2005 in New Jersey. When estimating the costs, the authors consider loss of productivity due to learning period, real estate and moving costs, staff time spent screening, interviewing new candidates, and advertisement of the open position, although these considerations vary somewhat with each position.	Heavy manufacturing plant employee*	\$760	\$18,720 ¹⁰	4.1 percent	\$24,511 ¹¹
		Registered nurse	\$1,200	\$56,880	2.1 percent	\$77,460
		Financial professional*	\$8,500 to \$13,000	\$70,000	12.1 percent to 18.6 percent	\$91,655
		Senior manager at a residential construction company*	\$80,000 to \$90,000	N/A	N/A	N/A
		Middle manager at a consumer products company*	\$98,000 to \$117,000	\$87,500	112 percent to 133.7 percent	\$114,569
		Lower-level executive at a consumer products company*	\$185,000	\$125,000	148 percent	\$163,669
Cheryl Bland Jones, “Revisiting nurse turnover costs: adjusting for inflation.” The Journal of Nursing Administration 38 (1) (2008): 11–8.	Building on earlier work and using baseline estimates from the turnover cost of registered nurses in a large, acute-care hospital in 2002, the author takes advantage of changes in the CPI and reports updated estimates on the cost of turnover.	Senior-level executive at a consumer products company*	\$260,000	\$200,000	130 percent	\$261,871
		Registered nurse	\$82,000 to \$88,000	\$62,480	131.2 percent to 140.8 percent	\$77,460
Jessica L. Friedman and Dana Neutze, “The Financial Cost of Medical Assistant Turnover in an Academic Family Medicine Center,” The Journal of the American Board of Family Medicine 33 (3) (2020): 426–430.	The authors estimate the turnover rate and cost for medical assistants in a large family care clinic. They collect data from the University of North Carolina Family Medicine Center, and adapt the Nursing Turnover Cost Calculation Methodology to account for both direct and indirect costs of turnover.	Medical assistant	\$14,200	\$33,580	42.3 percent	\$35,720

Abigail Jurist Levy and others, “ Estimating Teacher Turnover Costs: A Case Study ,” Journal of Education Finance 38, (2) (2012): 102–129.	The authors analyze the turnover cost for middle and high school teachers in Boston public schools, estimating the different costs for science and non-science teachers. They use an “ingredients method” for their analysis, which includes five categories: separations, recruitment and hiring, new teacher support, ongoing professional development, and the salary gap between exiting and incoming teachers.	Science school-teachers*	\$39,170	\$56,990 ¹²	68.7 percent	\$64,740
		All other school-teachers*	\$19,460	\$56,990	34.1 percent	\$64,740
Kristine Kiernan, “ Calculating the Cost of Pilot Turnover ,” Journal of Aviation/Aerospace Education & Research, 27 (1) (2018): 49–69.	The author estimates the turnover cost for Part 135 carrier pilots, creating a generalizable model for airlines to determine their turnover costs. While there are no estimates on the overall turnover rate in the industry, available evidence suggests it is relatively high due to stress, long hours, and relatively low pay.	Part 135 carrier pilot*	\$17,405	\$40,000	43.5 percent	\$41,691
Iowa Department of Public Health, “ Cost of turnover in the direct care workforce ” (2014).	Iowa’s Department of Public Health updated previous estimates on the costs incurred by employers each time a direct care worker leaves a position. The department finds a relatively high turnover rate in this occupation (64 percent) and a combination of low wages, lack of access to fringe benefits, and a high degree of employer-specific training. The expenses include separation, vacancy, recruiting, and training costs for the new hire.	Direct care workers*	\$4,026	\$25,818.41 ¹³	15.6 percent	\$29,598 ¹⁴

Arindrajit Dube, Eric Freeman, and Michael Reich, “Employee Re- placement Costs.” Working Paper No. 201-10 (Institute for Research on Labor and Employment, 2010).	The authors use panel survey data of California businesses between 2003 and 2008, and find that replacement costs represent a relatively high share of annual wages. They also find some evidence that replacement costs have a positive relationship with the size of the establishment. ¹⁵	Professional and managerial workers	\$7,558	\$45,448	16.6 percent	N/A
		Blue-collar workers	\$2,341	\$31,262	7.5 percent	N/A
		Overall average	\$4,529	\$36,920	12.3 percent	N/A

TABLE 2

Job category as described in the study	Assigned OES occupation for the annual average wage in the year the cost was estimated
Store manager (supermarket)	Sales manager
Department manager (supermarket)	First-line supervisor/manager of retail sales workers
Cashier (supermarket)	Cashier
Other hourly personnel (supermarket)	Retail salesperson
Front-office associate (hotel)	Receptionist and information clerk
Loss-prevention (security) associate	Security guard
Line cook (hotel)	Cook, restaurant
Administration, sales, catering (hotel)	Executive secretary and administrative assistant
Gift-shop clerk (hotel)	Hotel, motel, and resort desk clerk
Child protective services	Child, family, and school social worker
Nursing home worker	Nursing aide, orderly, and attendant
Home health agency worker	Home health aide
School teacher	- Elementary school teacher, except special education - Middle school teacher, except special and vocational education - Secondary school teacher, except special and vocational education
Registered nurse	Registered nurse
Medical assistant	Medical assistant
Physician	Physician and surgeon, all other
Technical staff (medical center)	- Medical and clinical laboratory technician - Medical and clinical laboratory technologist

Support (medical center)	Healthcare support
Administrative assistant or manager (medical center)	Medical records and health information technician

Endnotes for the Methodological Appendix

- 1* Annual average wage or salary available in the study. The costs estimated in this study include the direct, opportunity, and total costs (direct + opportunity) of employee turnover. The estimates included in this table reflect total costs. The ranges reflect the cost difference of replacing a union and nonunion worker.
- 2 Annual wage adjusted from 1999 dollars (when estimates for “child, family, and school social workers” first became available) to 1995 dollars (the year for which the turnover cost was calculated) using the Consumer Price Index.
- 3 Employee turnover costs calculated as the per-person cost to hire, plus the cost to train.
- 4 Annual wage adjusted from 2004 dollars (when estimates for “physicians and surgeons, all other” first became available) to 2001 dollars (the year for which the turnover cost was calculated) using the Consumer Price Index.
- 5 Calculated averaging the annual wage of medical and clinical laboratory technicians and medical and clinical laboratory technologists from the Occupational Employment and Wage estimates.
- 6 Calculated multiplying the average hourly wage for all healthcare support occupations (\$10.53) by full-time, year-round hours (2,080).
- 7 Ranges reflect costs in nursing homes and home health agencies with low and high turnover rates.
- 8 Calculated multiplying the average hourly wage for all healthcare support occupations (\$7.56 to \$10.42) by full-time-equivalent, year-round hours (2,080). The range represents wages for direct service staff categorized as “low end” and “high end.”
- 9 Calculated averaging the annual wage of elementary, middle, and secondary school teachers from the Occupational Employment and Wage estimates (2003).
- 10 Calculated multiplying the entry wage (\$9) by full-time, year-round hours (2,080).
- 11 But for registered nurses, all current (2019) wages in Eileen Appelbaum and Ruth Milkman, “Achieving a Workable Balance: New Jersey Employers’ Experiences Managing Employee Leaves and Turnover” are estimated by adjusting the 2005 annual wages to 2019 dollars.
- 12 Calculated as the average annual salary for exiting teachers (\$64,216) and incoming teachers (\$49,764) cited in the study.
- 13 Calculated multiplying the average hourly wage in 2010 (\$11.68) by full-time, year-round hours (2,080) and adjusted to 2013 dollars. Average hourly wages for Iowa direct care workers were taken from Child & Family Policy Center, “[Iowa Direct Care Worker Wage and Benefit Report](#)” (2010).
- 14 Calculated multiplying the average hourly wage in 2019 (\$14.23) by full-time, year-round hours (2,080). Average hourly wages for Iowa direct care workers were taken from Iowa Caregivers and Iowa Workforce Development, “[Direct Care Workers of Iowa 2019 Wage and Benefit Survey](#)” (2019).
- 15 Annual average earnings from the [National Compensation Survey](#) and calculated multiplying the hourly average earnings of blue-collar workers (\$15.03), white-collar workers (\$21.85), and all workers (\$17.75) in 2003, by full-time, year-round hours (2,080). Because the National Compensation Survey reports earnings that include incentive pay, cost-of-living adjustments, and hazard pay, these turnover costs are not included in the main analysis.

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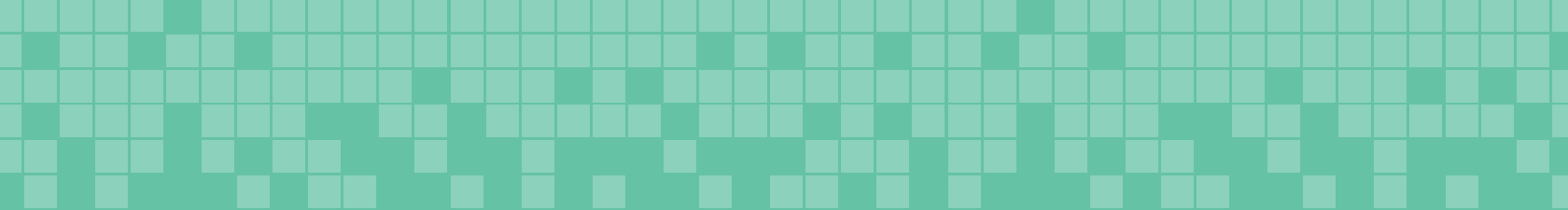
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