



# Minimum Wage Non-Compliance in Washington

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## Executive Summary

Since the turn of the millennium, Washington state has been a national leader in wage standards. The state broke from the federal minimum wage in 1998 when voters approved Initiative 688, tying the state wage to inflation through annual adjustments based on the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The passing of Initiative 1433 in 2016 further accelerated state minimum wage increases by incrementally raising the wage to \$13.50 in 2020, after which it was once again tied to the CPI-W. As of January 2023, Washington is home to the highest state minimum wage (\$15.74), local minimum wage (Seattle, \$18.69),<sup>1</sup> and local living wage (SeaTac, \$19.06)<sup>2</sup> in the country.

However, passing laws is just part of the story; agencies tasked with implementing and enforcing standards must strategically use their restricted resources to maximize employer compliance with these mandates, the focus of the current study. Using Current Population Survey (CPS) Merged Outgoing Rotation Group data from the U.S. Census Bureau—considered to be among the best publicly available data on hours and earnings—the following memo breaks down minimum wage theft trends in Washington by industry, occupation, job, and worker characteristics. Industry violation estimates are further compared to complaint data from the Washington State Department of Labor & Industries (L&I) to begin to understand how employer violation rates and worker complaint rates compare across sectors.

### Among our key findings:

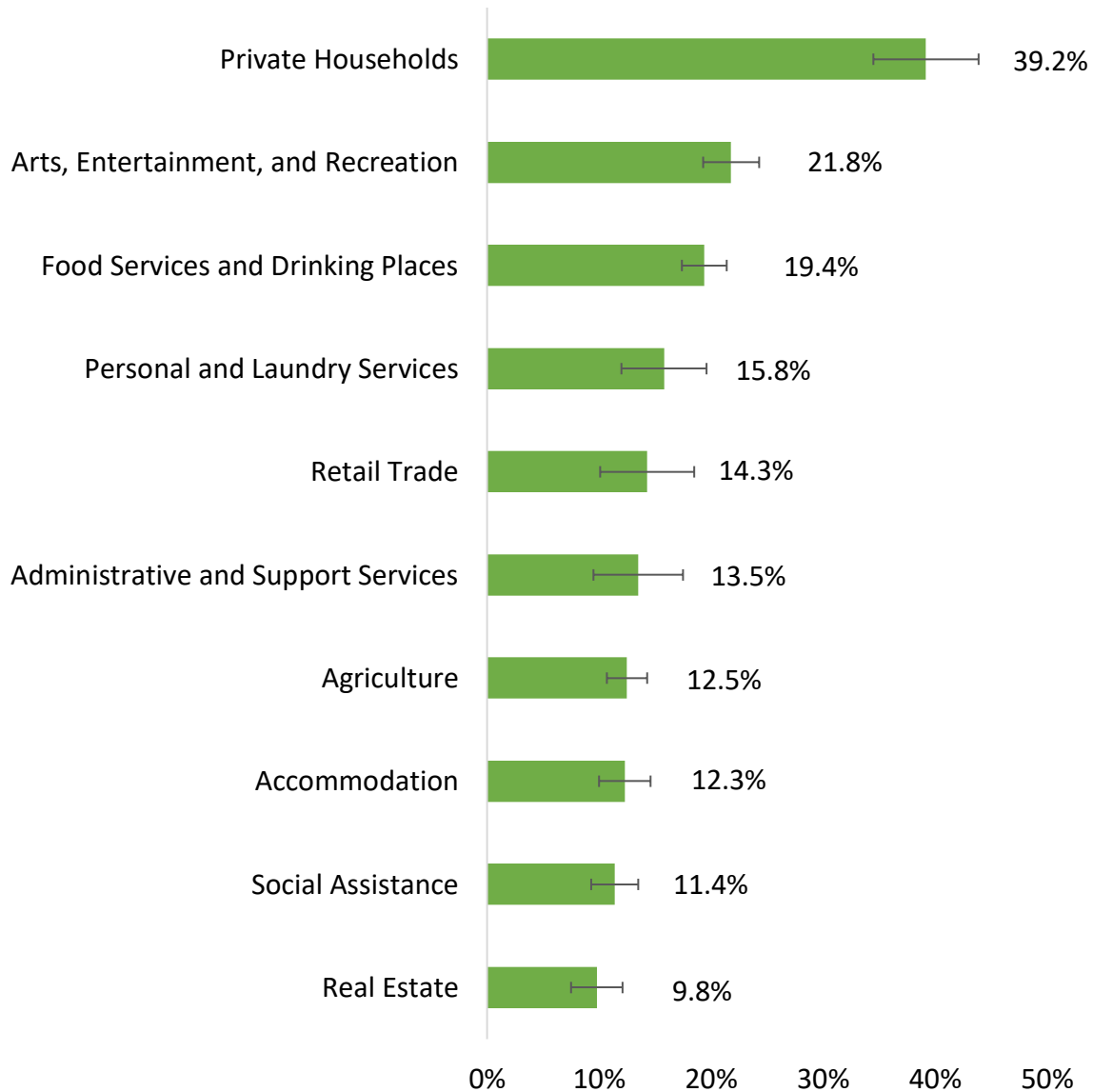
- Nearly 40% of Washingtonians employed by private households—including caretakers, cooks, maids, and maintenance workers—have experienced a minimum wage violation.
- Nearly 20% of workers employed in food services, one of the largest and fastest-growing industries in the U.S., experienced a minimum wage violation.
- Violation rates were also particularly high in the arts, entertainment and recreation industry, including gambling services workers and other entertainment and recreational attendants.
- **Workers in a) private households and b) social assistance (e.g., childcare workers, personal care aides) experience very high rates of wage theft but rarely complain to the state agency about their labor law violations, suggesting that the agency’s resources may be inefficiently allocated.** This is particularly pressing given that [home health and personal care aides are one of the fastest growing occupations in the U.S.](#)
- Workers of intersecting marginalized identities are more likely to experience wage theft; Black, Asian/Pacific Islander (PI) and Latina noncitizens are more than twice as likely to experience a minimum wage violation as a white male citizen.
- Younger and older Washington workers are particularly likely to experience minimum wage theft.
- Non-hourly workers, part-time workers, service sector workers, and those that didn’t graduate from high school each suffer disproportionately high rates of theft.
- Workers that allege unpaid minimum wages often allege multiple other types of violations, including unpaid hours worked, unpaid final wages, unpaid overtime, and employer retaliation.

We provide more info and analysis on these findings below.

## Violation Rates by Industry and Select Occupation

**Figure 1** below shows the highest estimated minimum wage violation rates among industry groups for which estimates could be derived.<sup>3</sup> Industries with the highest violation rates include private households (39.2%), including privately-employed domestic workers; arts, entertainment, and recreation (21.8%), and food services and drinking places (19.4%). Both Figure 1 below and **Figure 2** on page 3—which begins to isolate high-violation occupations within each of these industries—suggest that wage theft in Washington is primarily concentrated in low-wage service occupations.

**Figure 1. Estimated Minimum Wage Violation Rates by Industry (Top 10), Washington, July 2018-June 2021**



Note: Estimates represent predicted probabilities.  
95% confidence intervals shown.

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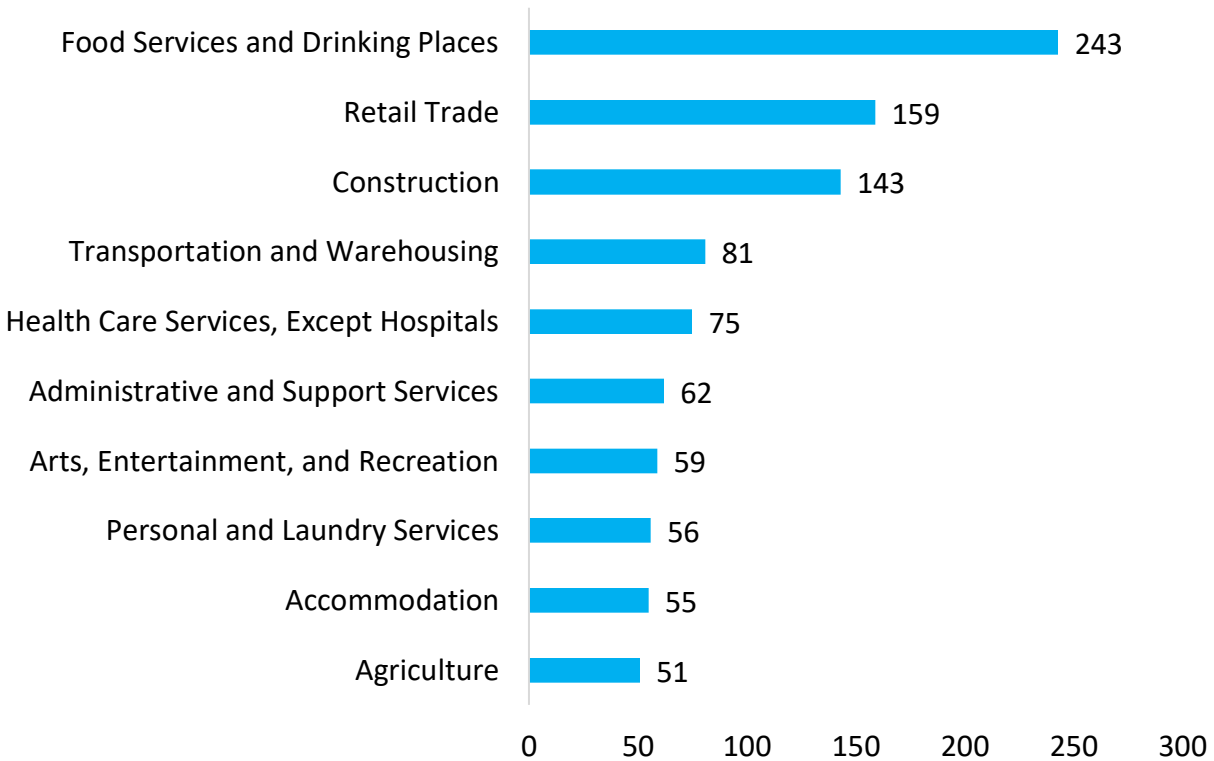
Figure 2. Among Those Paid Less than the Minimum Wage,  
in What Jobs Were they Working (By Industry)?

<b>Private Households</b>		→ this means that out of all the workers in the private household industry who were paid less than the minimum wage, 41% were personal care aides and 41% were childcare workers.	
Personal Care Aides	41%		
Childcare Workers	41%		
<b>Arts, Entertainment, and Recreation</b>		<b>Administrative and Support Services</b>	
Gaming Services Workers	21%	Janitors and Building Cleaners	32%
Other Entertainment Attendants	14%	Grounds Maintenance Workers	21%
<b>Food Services and Drinking Places</b>		<b>Agriculture</b>	
Waiters and Waitresses	21%	Agricultural Laborers	67%
Chefs and Cooks	17%	<b>Accommodation</b>	
Food Preparation Workers	16%	Maids and Housekeeping Cleaners	50%
<b>Personal and Laundry Services</b>		<b>Social Assistance</b>	
Hairdressers, Hairstylists, and Cosmetologists	42%	Childcare Workers	46%
Massage Therapists	25%	Personal Care Aides	15%
<b>Retail Trade</b>		<b>Real Estate</b>	
Retail Salespersons	23%	Real Estate Brokers and Sales Agents	57%
Cashiers	17%		

## Complaints by Industry

**Figure 3** meanwhile shows the industries from which L&I received the most minimum wage complaints during the study period. Industries with the highest number of minimum wage complaints include food services and drinking places (243 complaints), retail trade (159), and construction (143).

**Figure 3. Complaints by Industry (Top 10), Washington, July 2018-June 2021**



All employers that were alleged to have violated Washington minimum wage laws during the study period had 5 or fewer unpaid minimum wage complaints against them, except for one significant outlier. L&I received 24 unpaid minimum wage complaints during the study period from employees of The Oak Tree Restaurant and Lucky 21 Casino (Lucky 21) in Woodland, accounting for over 40 percent of complaints in the arts, entertainment, and recreation industry.<sup>4</sup>

**Figure 4. Highest/Lowest Complaint/Violation Rates by Industry, Washington, July 2018-June 2021**

**Highest Complaint Rate**

Industry	Complaints per 10,000 workers
Accommodation	23
Personal and Laundry Services	19
Food Services and Drinking Places	12
Arts, Entertainment, and Recreation	12
Transportation and Warehousing	10
Construction	8
Membership Associations and Organizations	7
Professional, Scientific, and Technical Services	6
Agriculture	5
Retail Trade	5

**Highest Violation Rate**

Industry	Estimated violations per 10,000 workers
Private Households	3920
Arts, Entertainment, and Recreation	2180
Food Services and Drinking Places	1940
Personal and Laundry Services	1580
Retail Trade	1430
Administrative and Support Services	1350
Agriculture	1250
Accommodation	1230
Social Assistance	1140
Real Estate	980

**Lowest Complaint Rate**

Industry	Complaints per 10,000 workers
Private Households	0
Hospitals	0
Wholesale Trade	0
Educational Services	1
Manufacturing	1
Social Assistance	1
Public Administration	1
Information	2
Real Estate	3
Finance and Insurance	4

**Lowest Violation Rate**

Industry	Estimated violations per 10,000 workers
Information	400
Manufacturing	440
Construction	500
Professional, Scientific, and Technical Services	500
Finance and Insurance	560
Wholesale Trade	570
Public Administration	680
Transportation and Warehousing	700
Hospitals	700
Membership Associations and Organizations	800

## Comparing Violation and Complaint Rates

The tables in **Figure 4** begin to put these numbers into perspective by comparing estimated minimum wage violation rates to relative minimum wage complaints to L&I (i.e., claims per 10,000 Washington workers). Industries with the highest rate of complaints include accommodation (23/10,000 workers), personal and laundry services (19), food services and drinking places (12), and arts, entertainment, and recreation (12). Three industries—wholesale trade, hospitals, and private households—had a rate of less than 1 complaint per 10,000 workers during the study period.

Using the above violation estimates and complaint data, we can begin to fill in the 2-by-2 matrix in **Figure 5** below. By comparing estimated violation rates (x-axis) and complaints to L&I (y-axis), we may begin to understand a) whether industries with the most complaints are the industries with the highest rates of underlying violations and b) whether workers in relatively “quiet” industries face disproportionate barriers to accessing protections.<sup>5</sup> A positive takeaway of Figure 5 is the lack of any industries in quadrant 3, with no industries having relatively high complaint rates yet low violation rates. The most “dysfunctional” industries are listed in quadrant 2; these are the industries that, while having relatively high estimated levels of minimum wage violations, have registered a low number of complaints to L&I. These industries include private households and social assistance. The estimates presented here suggest that L&I currently receives one complaint for roughly every 879 violations in the social assistance industry. **While we estimate that nearly 40 percent of workers in private households have experienced a minimum wage violation—amounting to over 2,700 workers—L&I has received no complaints from this industry.**

Figure 5. Violation/Complaint Matrix, Washington

	High violation rate	Low violation rate
High complaint rate	<b>Quadrant 1</b> <ul style="list-style-type: none"> <li>• Accommodation</li> <li>• Arts, Entertainment, and Recreation</li> <li>• Food Services and Drinking Places</li> <li>• Personal and Laundry Services</li> </ul>	<b>Quadrant 3</b>
Low complaint rate	<b>Quadrant 2</b> <ul style="list-style-type: none"> <li>• Private Households</li> <li>• Social Assistance</li> </ul>	<b>Quadrant 4</b> <ul style="list-style-type: none"> <li>• Manufacturing</li> <li>• Wholesale Trade</li> </ul>



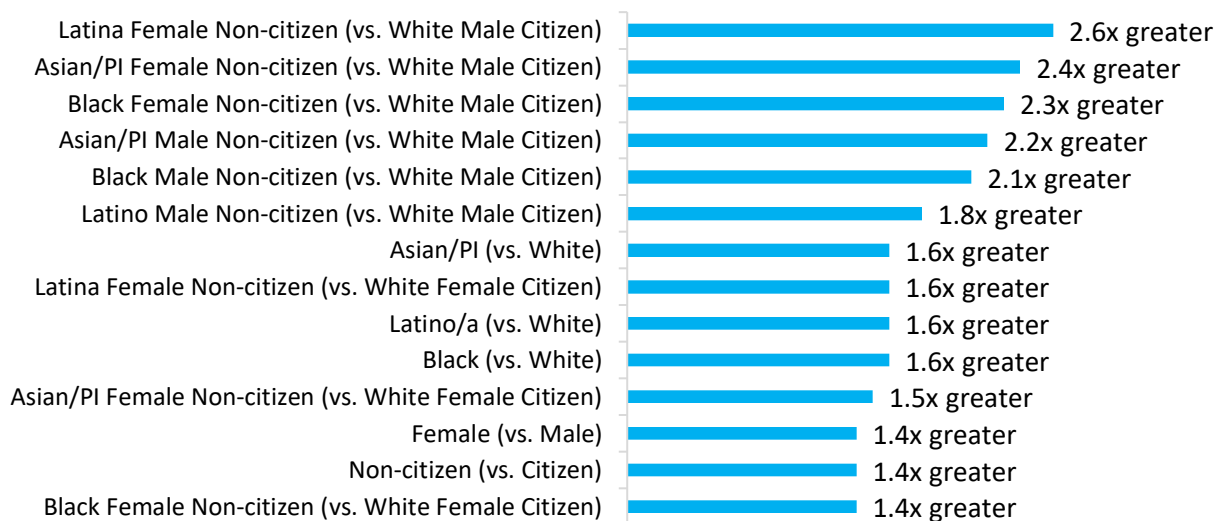
Also important to note are the industries that have high estimated wage violation rates and relatively high levels of complaints (i.e., quadrant 1). These industries include accommodation; arts, entertainment, and recreation; food services and drinking places; and personal and laundry services (including, e.g., beauty salons, nail salons, laundromats, spas, and parking services). Although over a third of total unpaid minimum wage claims submitted to L&I during the study period came from these industries, these data suggest that tens of thousands of violations across these industries are still unaccounted for. Given the size of these sectors as noted above—particularly food services—and the high levels of estimated violations, it is important that these workers continue to be a key focus of L&I’s enforcement efforts in addition to the “dysfunctional” industries mentioned above.

## Importance of Individual and Job Factors

These data do not tell us exactly *why* some industries have more or fewer violations. Still, it is worth noting that the industries with the highest estimated violation rates tend to employ many women, people of color, and immigrant workers, while industries with lower violation rates often employ more men and/or historically have been more unionized.

**Figure 6** shows the probability that workers with particular identities experienced a minimum wage violation relative to a reference group. As shown, non-citizens are 40 percent more likely to be paid below the minimum wage than citizens, while those identifying as female are 40 percent more likely than male-identifying workers to experience a minimum wage violation. Black, Latino/a, and Asian/Pacific Islander (PI) workers are 60 percent more likely than white workers to experience minimum wage theft. The top of Figure 6 also shows how intersectionality relates to the experience of wage theft. Compared to white male citizens, Black, Asian/PI and Latina female noncitizens are more than twice as likely to face minimum wage violations.

**Figure 6. Probability of Minimum Wage Violation by Demographic Group in Washington (Relative to Reference Group), July 2018-June 2021**

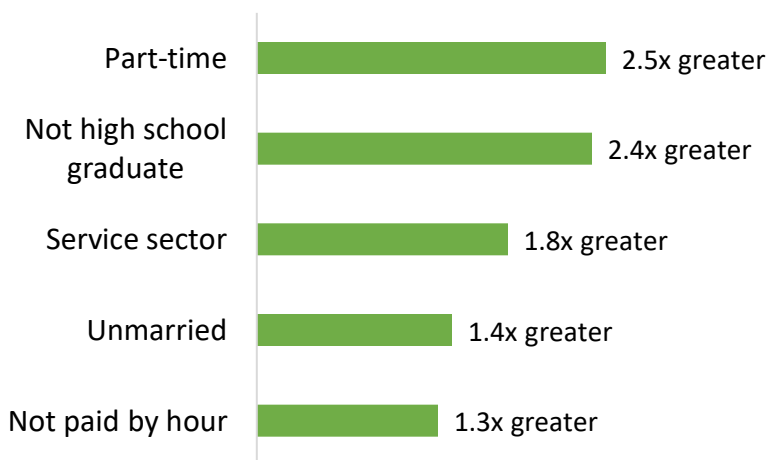


Note: Estimates represent predicted probabilities.

Minimum wage violation rates relative to age group are shown in **Figure 7**. Both the youngest and oldest workers are particularly likely to experience a violation. While roughly 1 in every 12 to 13 workers ages 25 to 64 faced a minimum wage violation, nearly 1-in-7 workers over 65 and 1-in-5 workers ages 16-24 experienced minimum wage theft.

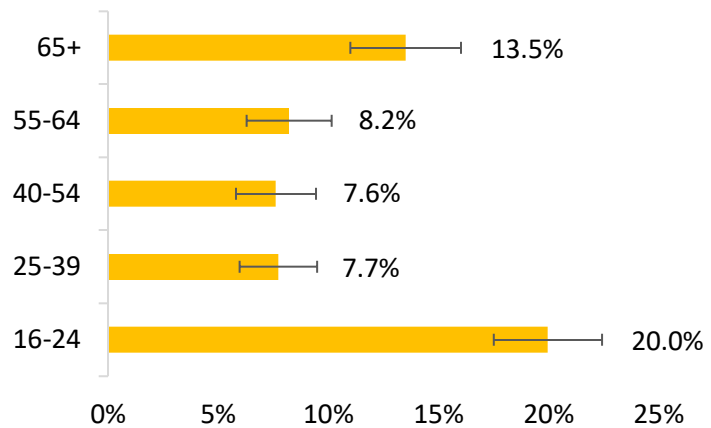
**Figure 8** below provides a look into some other significant predictors of wage theft not reflected above. Workers that aren't paid by the hour are 30 percent more likely to experience a minimum wage violation. This is likely due to violations stemming from the payment of flat or piece rates; when workers are paid a set amount per day/week they work or a fixed rate for every shirt they produce, it can be very difficult to understand and keep track if regulations are being met. Part-time workers are nearly 2.5 times more likely than full-time workers to experience a minimum wage violation. Workers who didn't graduate high school are over twice as likely to experience a violation than those with a diploma and, as evidenced in the sections above, those working in the service sector are over twice as likely to experience a violation as goods-producing industries.

**Figure 8. Probability of Minimum Wage Violation by Other Characteristics (Relative to Reference Group), Washington, July 2018-June 2021**



however, that workers experiencing minimum wage violations are particularly likely to concurrently experience multiple types of wage and hour violations. For example, an average of 2.33 violation types were alleged across all complaints received by L&I during the study period. Complaints that claim

**Figure 7. Probability of Minimum Wage Violation by Age, Washington, July 2018-June 2021**



Note: Estimates represent predicted probabilities.  
95% confidence intervals shown.

## Why Minimum Wage?

The current study is limited to an analysis of unpaid minimum wage in order to compare L&I complaint data with high-quality estimates of violation rates, as reliable data on other types of violations is extremely limited. There is reason to believe,

unpaid minimum wages on average alleged 4.77 different types of violations. As shown in **Figure 9**, of the 1,207 complaints that alleged unpaid minimum wages, over two-thirds (841 complaints) also alleged unpaid hours worked; over half (714) alleged that final wages were not paid; over 2-in-5 (500) alleged unpaid overtime; and over 1-in-4 (315) claimed employer retaliation.

## Conclusion

The analysis presented above may begin to inform a proactive labor standards enforcement strategy in Washington by revealing industries where wage violations are high yet complaint rates to L&I are comparably low. Additional investigation suggests that females, racial and ethnic minorities, non-citizens, and younger/older workers are more likely to experience wage violations, and particularly when these identities intersect.

Deriving estimates from the CPS holds an additional advantage in that these trends can continually be reanalyzed and enforcement strategies may thus be continually reassessed. In order to make this reevaluation process feasible, we strongly recommend that the North American Industrial Classification System (NAICS) be used moving forward when logging employer industry for each complaint. NAICS is the standard set of industry codes used in federal administrative data—including within the CPS—and is increasingly being used by state and local governments. By implementing NAICS within its complaint database, L&I may continue to tailor directed enforcement efforts as the agency sees appropriate.

**Figure 9. Other Violation Types Alleged in Complaints Including Unpaid Minimum Wage Claim, Washington, July 2018-June 2021**

Violation Type	Complaints
Unpaid Hours Worked	841
Final Wages Not Paid	714
Unpaid Agreed Wage	564
Unpaid Overtime	500
Retaliation	315
Rest Periods	285
Meal Periods	252
Unauthorized Deductions	212
Other	210
Unpaid Tips, Gratuities, Service Charges	199
Paid Sick Leave	132

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## About WJL@RU

The workplace justice lab@RU exists to address economic inequality through supporting and strengthening grassroots organizing and democratic governance. We do this through building dynamic communities of learning and practice, carrying out cutting edge research, and offering specialized training and in-depth one-on-one consultations.

At the lab, we go beyond talking about what government should do, to focusing on how government should do it. Through our strengthening labor standards enforcement program, we work to reimagine the public enforcement of workers' rights laws. By proactively targeting the sectors with the worst problems and involving those directly impacted in enforcement, we help agencies realize the intended impact of innovative labor standards legislation.

Washington graphic on front cover from Vecteezy.com.

## Appendices

### Appendix I. CPS data

The empirical literature on wage theft and its predictors remains limited due to the difficulty of obtaining accurate and reliable data. Employers that intentionally violate are unlikely to provide honest nor complete depictions of their practices. The hesitance of many aggrieved workers to submit a complaint to a public entity—whether due to immigration status, general distrust of government, or otherwise—leaves enforcement agency complaint data also unable to paint an accurate portrait of the complex and varied forms of wage and hour violations.

Wage theft must therefore be estimated using survey data. Most useful is the Current Population Survey's Merged Outgoing Rotation Groups (CPS MORG) data, which the U.S. Department of Labor's Wage and Hour Division has used to identify "priority industries" for investigations and which remains the top choice of every social scientist who has sought to develop national or industry-specific estimates of FLSA noncompliance since the 1970s.<sup>6</sup>

The CPS-MORG data has many advantages: it is gathered via extensive interviews with around 60,000 households per month; it is representative at the state and national levels (unlike other survey data, such as the Survey of Income and Program Participation [SIPP]); and its individual-level responses permit us to estimate earnings and minimum wage violations relatively easily. The biggest downside is measurement error, as with any survey.

The methodological approach we have employed here is fully consistent with previous research.<sup>7</sup> CPS-MORG data from July 2018 through June 2021 were used to develop the minimum wage violation estimates presented. Data was limited to respondents who were currently employed at the time of the survey. Many of the same workers excluded from FLSA protections are also excluded from Washington state law and were removed from the analysis, including bona fide executive, administrative, professional, and computer-related employees making over the applicable salary threshold;<sup>8</sup> casual workers in a private home; commercial truck drivers; forest protection workers; and outside salespersons. Some exemptions were unable to be accounted for given the structure of the data, such as certain agricultural workers; family members; volunteer services of state or local government employees; vessel operating crews of Washington state ferries; seamen on foreign vessels; and junior ice hockey players.

For hourly wages, we use variables that include wages earned from overtime, tips, and commissions (OTC) for both hourly and non-hourly workers.<sup>9</sup> Wage estimates are therefore conservative over-estimates that effectively downward-bias the estimated minimum wage violation rates. This is preferable to the alternative, however, which excludes OTC for hourly workers while including it for non-hourly workers (for whom different sources of wages are not distinguished). Efforts to estimate and subtract OTC from non-hourly workers adds unknown quantities of additional measurement error to this key variable, and is not recommended.<sup>10</sup> To ensure our estimates of wage violations are conservative *underestimates*, we follow Cooper and Kroeger (2017) in taking the higher of the reported wage (hourly wage or weekly pay divided by hours worked) for hourly workers who reported both.

To correct for measurement error, we follow ERG (2014), Galvin (2016), and Cooper and Kroeger (2017) and exclude all observations of workers not specifying weekly earnings, hourly/non-hourly

status, usual hours worked; observations of non-hourly workers with weekly earnings less than \$10; and all observations of workers with hourly wages less than \$1.

Minimum wage violations are dichotomous measures of whether an individual's estimated hourly wage was lower than the applicable legal minimum. We use Washington's applicable statutory minimum wage rate as of the date effective for each respondent. All analyses derived from the CPS use survey weights suggested by Davern et. al (2007), which are necessary given the sampling method of the CPS.<sup>11</sup>

Minimum wage violation estimates for mining, rental and leasing services, repair and maintenance, utilities, and waste management and remediation services were excluded from the industry analysis due to lack of data or insignificant findings (note: these five industries together account for roughly 2 percent of employment in Washington).

Given the limited timespan, sensitivity tests were performed using 5-year (July 2016-June 2021) and 10-year (July 2011-June 2021) spans; barring minor changes in point estimates, the results of these tests largely mirrored the results presented here, including industries with the highest and lowest minimum wage violation rates.

To account for potential rounding errors biasing the data, a sensitivity test was performed where a minimum wage violation was instead defined as a case in which the calculated hourly wage was at least \$.25 lower than the applicable minimum wage. While these rates were slightly lower, the relative rates across industry and occupational groups were not significantly changed, with one exception; The violation rate for agriculture dropped to 8.5% and out of the highest industry list. For this reason, estimates for the agriculture industry may be interpreted with caution.

There is reason to believe that the measurement error in the CPS may actually bias *downward* the reported estimates of minimum wage violations.<sup>12</sup> First, despite going to great lengths to reach them, both Latino/a households and undocumented immigrants are underrepresented in the CPS.<sup>13</sup> Because workers in these groups are at higher risk of experiencing minimum wage violations, the estimates of violations reported here should in this sense be considered conservative estimates.<sup>14</sup> Second, in Bollinger's study of measurement error in the CPS, he finds a "high over reporting of income for low-income men" driven by "about 10% of the reporters who grossly over report their income," thus potentially biasing estimates downward even further.<sup>15</sup> Third, CPS data have a shortage of low-wage workers and an excess of high-wage workers relative to comparable survey data like SIPP; one effect of this imbalance could be to underestimate minimum wage violations.<sup>16</sup> Roemer does find that the CPS reaches more "underground" workers than other large-scale surveys and is less biased than alternatives.<sup>17</sup> These considerations notwithstanding, the fact that measurement error surely exists recommends using caution when working with the point estimates reported.

Racial and ethnic categories are mutually exclusive. We follow CEPR and EPI in the construction of the race variable. "Black" includes those who identify as Black-white; Black-American Indian; Black-Asian; Black-Hawaiian/Pacific Islander; white-Black-American Indian; white-Black-Asian; white-Black-Hawaiian/Pacific Islander; Black-American Indian-Asian; and white-Black-American Indian-Asian. "Asian" includes those who identify as Asian & Hawaiian/Pacific Islander; white-Asian; white-Hawaiian/Pacific Islander; American Indian-Asian; American Indian-Hawaiian/Pacific Islander; Asian-Hawaiian/Pacific Islander; white-American Indian-Asian; white-American Indian-Hawaiian/Pacific Islander; white-Asian-Hawaiian/Pacific Islander; white-American Indian-Asian-

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Hawaiian/Pacific Islander. “Other” includes American Indian (only); white-American Indian; other 3 races; other 4 and 5 races. “Hispanic” includes those who identify as Mexican, Mexican-American, Mexicano/Mexicana, Chicano/Chicana, Mexican (Mexicano), Mexicano/Chicano, Puerto Rican, Cuban, Dominican, Salvadoran, Other Hispanic, Central/South American, Central American, (excluding Salvadoran), South American, and any of these categories *and* white, Black, Asian, or Other.

**Appendix II. Full Minimum Wage Violation Estimates by Industry,  
Washington, July 2018-June 2021**

<b>Industry</b>	<b>MW Violation Estimate (95% CI)</b>
Accommodation	<b>12.3%</b> (4.3, 20.3)
Administrative and Support Services	<b>13.5%</b> (10.1, 17.0)
Agriculture	<b>12.5%</b> (8.6, 16.4)
Arts, Entertainment, and Recreation	<b>21.8%</b> (15.7, 27.9)
Construction	<b>5.0%</b> (2.7, 7.3)
Educational Services	<b>9.4%</b> (6.5, 12.3)
Finance and Insurance	<b>5.6%</b> (1.7, 9.6)
Food Services and Drinking Places	<b>19.4%</b> (12.9, 25.9)
Health Care Services, Except Hospitals	<b>9.3%</b> (4.0, 14.5)
Hospitals	<b>7.0%</b> (5.0, 9.0)
Information	<b>4.0%</b> (1.8, 6.3)
Manufacturing	<b>4.4%</b> (2.3, 6.5)
Membership Associations and Organizations	<b>8.0%</b> (3.3, 12.7)
Personal and Laundry Services	<b>15.8%</b> (11.7, 19.9)
Private Households	<b>39.2%</b> (26.4, 52.0)
Professional, Scientific, and Technical Services	<b>5.0%</b> (3.3, 6.8)
Real Estate	<b>9.8%</b> (4.2, 15.4)
Retail Trade	<b>14.3%</b> (12.0, 16.6)
Social Assistance	<b>11.4%</b> (3.5, 19.3)
Transportation and Warehousing	<b>7.0%</b> (4.5, 9.5)
Wholesale Trade	<b>5.7%</b> (1.4, 9.9)



**Appendix III. Unpaid Minimum Wage Complaints by Industry,  
Washington, July 2018-June 2021**

<b>Industry</b>	<b>Complaints</b>
Food Service	243
Retail Trade	159
Construction	143
Transportation and warehousing	81
Health Care Services, Except Hospitals	75
Administrative and support services	62
Arts, Entertainment, and Recreation	59
Personal and laundry services	56
Accommodation	55
Agriculture	51
Professional, scientific, and technical services	37
Manufacturing	24
Repair and maintenance	23
Finance and insurance	19
Public Administration	15
Membership associations and organizations	15
Social assistance	13
Information	11
Educational services	11
Real estate	9
Rental and leasing services	7
Wholesale trade	5
Hospitals	3
Oil and gas extraction	1
Utilities	1
Unknown	29
<b>Total</b>	<b>1207</b>

Appendix IV. Industry groups and examples of highly represented occupations<sup>18</sup>

Industry	Occupation examples (Occupation code)
<b>Agriculture (NAICS 11)</b>	<ul style="list-style-type: none"> <li>• Farmworkers and laborers (45-2092)</li> <li>• Logging equipment operators (45-4022)</li> <li>• Agricultural equipment operators (45-2091)</li> <li>• Heavy and tractor-trailer truck drivers (53-3032)</li> <li>• Packers and packagers (53-7064)</li> <li>• Graders and sorters (45-2041)</li> </ul>
<b>Construction (NAICS 23)</b>	<ul style="list-style-type: none"> <li>• Pipelayers, plumbers, pipefitters, and steamfitters (47-2150)</li> <li>• Construction equipment operators (47-2070)</li> <li>• Helpers, construction trades (47-3010)</li> <li>• Painters and paperhangers (47-2140)</li> <li>• Cement masons, concrete finishers, and terrazzo workers (47-2050)</li> <li>• Secretaries and administrative assistants (43-6010)</li> <li>• Driver/sales workers and truck drivers (53-3030)</li> </ul>
<b>Manufacturing (NAICS 31-33)</b>	<ul style="list-style-type: none"> <li>• Metal workers and plastic workers (51-4000)</li> <li>• Assemblers and fabricators (51-2000)</li> <li>• Material moving workers (53-7000)</li> <li>• Installation, maintenance, and repair occupations (49-0000)</li> <li>• Business operations specialists (13-1000)</li> <li>• Inspectors, testers, sorters, samplers, and weighers (51-9061)</li> <li>• Material recording, scheduling, dispatching, and distributing workers (43-5000)</li> </ul>
<b>Wholesale trade (NAICS 42)</b>	<ul style="list-style-type: none"> <li>• Sales representatives (41-4010)</li> <li>• Laborers and material movers (53-7060)</li> </ul>

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	<ul style="list-style-type: none"> <li>• Driver/sales workers and truck drivers (53-3030)</li> </ul>
<b>Retail trade (NAICS 44, 45)</b>	<ul style="list-style-type: none"> <li>• Retail salespersons (41-2031)</li> <li>• Cashiers (41-2010)</li> <li>• Laborers and material movers (53-7060)</li> <li>• Stockers and order fillers (53-7065)</li> <li>• Driver/sales workers and truck drivers (53-3030)</li> <li>• Counter and rental clerks and parts salespersons (41-2020)</li> <li>• Customer service representatives (43-4051)</li> </ul>
<b>Transportation and warehousing (NAICS 48,49)</b>	<ul style="list-style-type: none"> <li>• Heavy and tractor-trailer truck drivers (53-3032)</li> <li>• Laborers and freight, stock, and material movers, hand (53-7062)</li> <li>• Postal service mail carriers (43-5052)</li> <li>• Light truck drivers (53-3033)</li> <li>• Passenger vehicle drivers, except bus drivers, transit and intercity (53-3058)</li> <li>• Industrial truck and tractor operators (53-7051)</li> <li>• Stockers and order fillers (53-7065)</li> <li>• Flight attendants (53-2031)</li> </ul>
<b>Information (NAICS 51)</b>	<ul style="list-style-type: none"> <li>• Software and web developers, programmers, and testers (15-1250)</li> <li>• Business operations specialists (13-1000)</li> <li>• Sales representatives (41-3000)</li> <li>• Media and communication workers (27-3000)</li> <li>• Radio and telecommunications equipment installers and repairers (49-2020)</li> <li>• Customer service representatives (43-4051)</li> <li>• Actors, producers, and directors (27-2010)</li> </ul>
<b>Finance and insurance (NAICS 52)</b>	<ul style="list-style-type: none"> <li>• Customer service representatives (43-4051)</li> <li>• Tellers (43-3071)</li> </ul>

	<ul style="list-style-type: none"> <li>• Securities, commodities, and financial services sales agents (41-3031)</li> <li>• Insurance sales agents (41-3021)</li> <li>• Loan officers (13-2072)</li> <li>• Insurance claims and policy processing clerks (43-9041)</li> <li>• Claims adjusters, appraisers, examiners, and investigators (13-1030)</li> <li>• Secretaries and administrative assistants (43-6010)</li> </ul>
<b>Real estate (NAICS 531)</b>	<ul style="list-style-type: none"> <li>• Real estate brokers and sales agents (41-9020)</li> <li>• Property, real estate, and community association managers (11-9141)</li> <li>• Office clerks (43-9061)</li> <li>• Secretaries and administrative assistants (43-6014)</li> </ul>
<b>Professional, scientific and technical services (NAICS 54)</b>	<ul style="list-style-type: none"> <li>• Software developers and software quality assurance analysts and testers (15-1256)</li> <li>• Accountants and auditors (13-2011)</li> <li>• Lawyers (23-1011)</li> <li>• Management analysts (13-1111)</li> <li>• Paralegals and legal assistants (23-2011)</li> <li>• Computer systems analysts (15-1211)</li> <li>• Bookkeeping, accounting, and auditing clerks (43-3031)</li> <li>• Civil engineers (17-2051)</li> </ul>
<b>Administrative and support services (NAICS 561)</b>	<ul style="list-style-type: none"> <li>• Janitors and cleaners, except maids and housekeeping cleaners (37-2011)</li> <li>• Security guards (33-9032)</li> <li>• Laborers and freight, stock, and material movers, hand (53-7062)</li> <li>• Landscaping and groundskeeping workers (37-3011)</li> <li>• Customer service representatives (43-4051)</li> <li>• Office clerks (43-9061)</li> <li>• Packers and packagers (53-7064)</li> </ul>

<p><b>Waste management and remediation services (NAICS 562)</b></p>	<ul style="list-style-type: none"> <li>• Refuse and recyclable material collectors (53-7081)</li> <li>• Heavy and tractor-trailer truck drivers (53-3032)</li> <li>• Office and administrative support occupations (43-0000)</li> <li>• Hazardous materials removal workers (47-4041)</li> <li>• Laborers and freight, stock, and material movers, hand (53-7062)</li> <li>• Installation, maintenance, and repair occupations (49-0000)</li> <li>• Construction trades workers (47-2000)</li> <li>• Septic tank servicers and sewer pipe cleaners (47-4071)</li> </ul>
<p><b>Educational services (NAICS 61)</b></p>	<ul style="list-style-type: none"> <li>• Elementary and middle school teachers (25-2020)</li> <li>• Teaching assistants (25-9040)</li> <li>• Secondary school teachers (25-2030)</li> <li>• Secretaries and administrative assistants (43-6010)</li> <li>• Special education teachers (25-2050)</li> <li>• Education and childcare administrators (11-9030)</li> </ul>
<p><b>Health care (NAICS 621, 622, 623)</b></p>	<ul style="list-style-type: none"> <li>• Registered nurses (29-1141)</li> <li>• Nursing assistants (31-1131)</li> <li>• Medical assistants (31-9092)</li> <li>• Home health and personal care aides (31-1120)</li> <li>• Medical secretaries and administrative assistants (43-6013)</li> <li>Dental assistants (31-9091)</li> </ul>
<p><b>Social assistance (NAICS 624)</b></p>	<ul style="list-style-type: none"> <li>• Home health and personal care aides (31-1120)</li> <li>• Preschool teachers (25-2011)</li> <li>• Childcare workers (39-9011)</li> <li>• Social and human service assistants (21-1093)</li> <li>• Teaching assistants, except postsecondary (25-9045)</li> </ul>

	<ul style="list-style-type: none"> <li>• Child, family, and school social workers (21-1021)</li> </ul>
<b>Arts, entertainment, and recreation (NAICS 71)</b>	<ul style="list-style-type: none"> <li>• Amusement and recreation attendants (39-3091)</li> <li>• Exercise trainers and group fitness instructors (39-9031)</li> <li>• Food preparation and serving related occupations (35-0000)</li> <li>• Office and administrative support occupations (43-0000)</li> <li>• Arts, design, entertainment, sports, and media occupations (27-0000)</li> <li>• Building and grounds cleaning and maintenance occupations (37-0000)</li> </ul>
<b>Accommodation (NAICS 721)</b>	<ul style="list-style-type: none"> <li>• Maids and housekeeping cleaners (37-2012)</li> <li>• Hotel, motel, and resort desk clerks (43-4081)</li> <li>• Waiters and waitresses (35-3031)</li> <li>• Maintenance and repair workers, general (49-9071)</li> <li>• Cooks (35-2014)</li> <li>• Gambling dealers (39-3011)</li> <li>• </li> </ul>
<b>Food services and drinking places (NAICS 722)</b>	<ul style="list-style-type: none"> <li>• Fast food and counter workers (35-3023)</li> <li>• Waiters and waitresses (35-3031)</li> <li>• Cooks (35-2014)</li> <li>• Food preparation workers (35-2021)</li> <li>• Bartenders (35-3011)</li> <li>• Dishwashers (35-9021)</li> <li>• Hosts and hostesses (35-9031)</li> <li>• Cashiers (41-2011)</li> <li>• Dining room and cafeteria attendants and bartender helpers (35-9011)</li> <li>• Driver/sales workers (53-3031)</li> </ul>
<b>Repair and maintenance (NAICS 811)</b>	<ul style="list-style-type: none"> <li>• Automotive service technicians and mechanics (49-3023)</li> <li>• Cleaners of vehicles and equipment (53-7061)</li> </ul>

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	<ul style="list-style-type: none"> <li>• Automotive body and related repairers (49-3021)</li> </ul>
<b>Personal and laundry services (NAICS 812)</b>	<ul style="list-style-type: none"> <li>• Hairdressers, hairstylists, and cosmetologists (39-5012)</li> <li>• Manicurists and pedicurists (39-5092)</li> <li>• Laundry and dry-cleaning workers (51-6011)</li> <li>• Animal caretakers (39-2021)</li> <li>• Parking attendants (53-6021)</li> <li>• Receptionists and information clerks (43-4171)</li> <li>• Massage therapists (31-9011)</li> <li>• Counter and rental clerks (41-2021)</li> <li>• Skincare specialists (39-5094)</li> <li>• Funeral attendants (39-4021)</li> <li>• Morticians, undertakers, and funeral arrangers (39-4031)</li> </ul>
<b>Membership associations and organizations (NAICS 813)</b>	<ul style="list-style-type: none"> <li>• Labor relations specialists (13-1075)</li> <li>• Secretaries and administrative assistants, except legal, medical, and executive (43-6014)</li> <li>• Office clerks (43-9061)</li> <li>• General and operations managers (11-1021)</li> </ul>

## Endnotes

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<sup>1</sup> Seattle's minimum wage rate of \$18.69/hour applies to all large employers (501 or more employees) and all small employers that do not pay \$2.19/hour toward medical benefits or whose employees earn less than \$2.19/hour in tips; for more on this, see <https://www.seattle.gov/laborstandards/ordinances/minimum-wage>.

<sup>2</sup> SeaTac's living wage rate of \$19.06/hour applies to hospitality and transportation employees; for more on this, see <https://www.seatacwa.gov/our-city/employment-standards-ordinance>.

<sup>3</sup> The colored bars and labels in Figures 1, 2, and 6-8 represent point estimates, while the black bars in Figures 1, 2, and 7 represent the upper and lower bounds of the 95 percent confidence intervals for each point estimate. For more on the CPS and our methodology, see Appendix I.

<sup>4</sup> All of the complaints against Lucky 21 were filed in April 2019. According to *The Columbian*, Lucky 21 closed abruptly on April 8, 2019, leaving scores of employees with unpaid wages and final paychecks. Based on L&I complaint data, of the \$174,574.70 claimed by Lucky 21 employees across 114 complaints—with almost all (108) alleging final wages not paid and many alleging unpaid hours worked (55), unpaid tips, gratuities, and service charges (30) in addition to the 24 unpaid minimum wage claims—nearly \$135,000 was assessed. Anthony Macuk, "Lucky 21 employees out 3 weeks' pay," *The Columbian* (April 16, 2019), accessed from <https://www.columbian.com/news/2019/apr/16/lucky-21-employees-out-3-weeks-pay/>

<sup>5</sup> David Weil and Amanda Pyles, "Why Complain?: Complaints, Compliance, and the Problem of Enforcement in the Us Workplace," *Comp. Lab. L. & Pol'y. J.* 27 (2005). Given the distribution of minimum wage violation and complaint rates across industries, we define a) "high" and "low" violation rates as above 10 percent and below 6 percent of covered workers, and b) "high" and "low" complaint rates as above 10 complaints or below 1 complaint per 10,000 covered workers.

<sup>6</sup> Orley Ashenfelter and Robert S. Smith, "Compliance with the Minimum Wage Law," *Journal of Political Economy* 87, no. 2 (1979); Ronald G. Ehrenberg and Paul L. Schumann, "Compliance with the overtime pay provisions of the Fair Labor Standards Act," *The Journal of Law and Economics* 25, no. 1 (1982); Brigitte Sellekaerts and Stephen W. Welch, "Noncompliance with the Fair Labor Standards Act: Evidence and Policy Implications," *Labor Studies Journal* 8 (1984); Eastern Research Group, *The Social and Economic Effects of Wage Violations: Estimates for California and New York*, Prepared for the U.S. Department of Labor (Lexington: Eastern Research Group, 2014); Daniel J. Galvin, "Deterring Wage Theft: Alt-Labor, State Politics, and the Policy Determinants of Minimum Wage Compliance," *Perspectives on Politics* 14, no. 2 (2016); David Cooper and Teresa Kroeger, "Employers steal billions from workers' paychecks each year," *Economic Policy Institute*, May 10, 2017, <https://www.epi.org/publication/employers-steal-billions-from-workers-paychecks-each-year/>.

<sup>7</sup> In particular, Galvin (2016); Eastern Research Group (2014); and Cooper and Kroeger (2017).

<sup>8</sup> For more on minimum salary thresholds for executive, administrative, and professional workers in Washington, see <https://lni.wa.gov/workers-rights/wages/overtime/changes-to-overtime-rules>

<sup>9</sup> <http://ceprdata.org/cps-uniform-data-extracts/cps-outgoing-rotation-group/>.

See also Cooper and Kroeger's 2017 preference for this method of estimating wages.

<sup>10</sup> U.S. Department of Labor 2014.

<sup>11</sup> Davern, Michael, et al, "Estimating Regression Standard Errors with Data from the Current Population Survey's Public Use File," *Inquiry* 44: 211-224 (Summer 2007).

<sup>12</sup> For an excellent discussion of the advantages and limitations of using the CPS data to estimate minimum wage violations given the existence of measurement error and other issues, see Eastern Research Group (2014), Appendix B.

<sup>13</sup> As Bernhardt et al. (2009) write: "... standard surveying techniques—phone interviews or census-style door-to-door interviews—rarely are able to fully capture the population that we are most interested in: low-wage workers who may be hard to identify from official databases, who may be vulnerable because of their immigration status, or who are reluctant to take part in a survey because they fear retaliation from their employers. Trust is also an issue when asking for the details about a worker's job, the wages they receive, whether they are paid off the books or not, and their personal background." Annette Bernhardt et al., *Broken Laws, Unprotected Workers: Violations of Employment and Labor Laws in America's Cities* (New York: National Employment Law Project), 56.

<sup>14</sup> Bernhardt et al. (2009); Eastern Research Group (2014).



<sup>15</sup> Christopher R. Bollinger, "Measurement error in the Current Population Survey: A nonparametric look," *Journal of Labor Economics* 16, no. 3 (1998).

<sup>16</sup> Marc Roemer, Using administrative earnings records to assess wage data quality in the March Current Population Survey and the Survey of Income and Program Participation (Washington, DC: Center for Economic Studies, US Census Bureau, 2002); Eastern Research Group (2014).

<sup>17</sup> Roemer 2002.

<sup>18</sup> Information obtained from the U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics database, accessible at: <https://www.bls.gov/oes/current/oesrci.htm>.