Expert Witness Considerations in EEO Class and Representative Actions

March 2023

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Prepared for the 2023 National Conference on Equal Employment Opportunity Law

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I. Introduction

Class and representative actions, by their nature, have always been complex. Recent trends in employment litigation, driven largely by changing legislation and the lasting effects of the #MeToo and #BlackLivesMatter movements, have caused still increasing complexity in class-based employment claims, including not only cases brought by and on behalf of current and former employees, but also by government agencies. Recent employment class actions often are national or statewide in scope, and they typically involve allegations of widespread pay equity violations and systemic discrimination (often in pay and promotions). Litigating these cases frequently requires one or more expert witnesses to analyze and draw conclusions from the data about the nature of work performed and any observable trends. This work is done primarily by labor economists and/or Industrial Organizational ("I/O") psychologists.

In addition to the legal and societal factors, there continues to be new and different pressures that employers face. The rise of ESG and pressure from employees, activist shareholders, and institutional investors to publicly disclose DEI and pay equity metrics can create risk for employers, including lawsuits based on these disclosures brought by employees, shareholders or government agencies. The recent wave of pay transparency laws, which are rapidly spreading across the country and abroad, may also compound this trend.

Part I of this paper examines the role that experts have played in recent employment litigation – namely, pay equity class actions and systemic discrimination cases. It focuses primarily on statisticians and labor economists. Part II discusses key strategies in working with statistical experts, and the interaction between statistical experts and I/O psychologists. Part III discusses recommendations for working with experts in employment cases generally.

II. The Role of Experts In EEO Class And Representative Cases

The importance of expert witnesses in class pay equity and systemic discrimination cases cannot be overstated. Once a putative class action makes it past the early stages of litigation and faces what may be its first significant procedural battle—class certification—outcomes often hinge on the court's acceptance or rejection of the parties' expert reports, opinions, and analyses.

The use of expert witnesses—primarily labor economists and I/O psychologists—is not new or novel. To the contrary, it is common that cases alleging widespread or systemic wrongdoing rely, at least in part, on expert testimony. But as putative classes become broader, jobs become more nuanced and complex, and the legal theories upon which plaintiffs may bring class claims continue to evolve, the appropriate role of an expert witness within the context of class litigation has continued to be a battleground for litigants. In systemic discrimination cases, plaintiffs often argue that if a statistical analysis shows statistically significant disparities while using statistical controls to account for differences in jobs and the major factors that impact pay, the fact finder can infer that discrimination is occurring because the model has essentially ruled out any other

legitimate explanation for the disparities.[1] On the other end of the spectrum, defendants often argue that either (1) the statistical model upon which plaintiff's argument is based is faulty; and/or (2) even assuming the model is correct, a statistical analysis necessarily cannot capture all of the factors that influence pay. The resulting dispute is not only about the specific facts at issue in a given case, but also more fundamentally about how such an expert analysis can and should be used to establish commonality and/or liability.

The dispute is more obviously present in pay equity cases, where plaintiffs do not need to prove discriminatory intent. The plaintiffs' burden is simply to demonstrate that women (to use a gender example) perform substantially similar work to men and are paid less.[2] Defendants often argue such a burden is inconsistent with the fundamentals of statistics, which by their nature are limited to averages and do not offer conclusions about any individual or her comparators. Yet in a bid to proffer common evidence to secure class certification, plaintiffs often pair statisticians' analyses with those of I/O psychologists to build the foundation of their legal arguments. The question defendants must pose, then, is whether such efforts are probative of the legal standard plaintiffs must meet to proceed on their claims.

This section presents a brief summary of major cases, with a focus on the role of experts in those cases and the court's response to expert testimony. It starts with major California and federal court cases, all of which hinge on class certification (or decertification). It then turns to cases that face similar issues, but do not require a class certification process, specifically cases brought by the OFCCP and Private Attorney Generals Act (PAGA) cases in California.

A. California Class Certification and Decertification Cases

This section summarizes select California cases that have relied on labor economists to prove either the merits of the claims, or to address whether common issues predominate in the context of class certification.

1. *Jewett v. Oracle America, Inc.*

Jewett et al v. Oracle America, Inc. is a private class action pending in San Mateo County Superior Court. Plaintiffs assert class claims focused on alleged gender disparities in pay in three job functions.[3] In April 2020, Judge V. Raymond Swope granted class certification after concluding that Plaintiffs' theory that women were paid less than men who shared their job code, and employees who shared a job code performed similar work was amenable to common proof.[4] The "common proof" at issue was primarily the expert reports of labor economist Dr. David

[1] *Int'l Bhd. of Teamsters v. United States*, 431 U.S. 324, 335 n.15 (1977); *see also Penk v. Or. State Bd. of Higher Educ*., 816 F.2d 458, 463 (9th Cir. 1987) (discriminatory intent may be shown through "statistical, nonstatistical, and anecdotal evidence").

[2] *See, e.g.*, Fed. Equal Pay Act, 29 U.S.C. § 206(d); California Equal Pay Act, Cal. Lab. Code § 1197.5.

[3] *See* Complaint, *Jewett v. Oracle America, Inc.*, No. 17-CIV-02669 (San Mateo County Super. Ct.) (filed June 16, 2017).

[4] Order Granting Representative Plaintiffs' Motion for Class Certification, *Jewett v. Oracle America, Inc.*, No. 17-CIV-02669 (San Mateo County Super. Ct.) (April 30, 2020).

Neumark and I/O Psychologist Dr. Leaetta Hough. Following repeated challenges to the court's certification order – including denied petitions to the California Court of Appeal and California Supreme Court, a first motion for decertification that was denied in October 2021, and briefing over a revised trial plan in 2021 – Judge Swope granted Oracle's Second Motion for Decertification in an order issued July 12, 2022.[5]

Judge Swope's decision to decertify the class focused on his manageability concerns and his conclusion that plaintiffs' updated trial plan did not account for Oracle's due process right to present affirmative defenses.[6] Judge Swope concluded that, contrary to the arguments made by plaintiffs' counsel, the statistical analyses of plaintiffs' expert, Dr. David Neumark, did not account for Oracle's affirmative defenses under the California EPA. Instead, Judge Swope found that Oracle's affirmative defenses relied upon fact evidence, including testimony by witnesses about the factors that influence pay, that could not be reduced to a statistical model. [7]

Judge Swope also cast doubt on whether the opinions offered by plaintiffs' experts supported plaintiffs' theory that "all men and women at Oracle who share a job code perform equal or substantially similar work."[8] Specifically, Judge Swope stated that "the new deposition testimony of Plaintiffs' experts, including Dr. David Neumark, Dr. Jesse Rothstein, and Dr. Leaetta Hough, leads the Court to question whether common evidence may be used to prove substantially similar work over the class period."[9]

Judge Swope also found plaintiffs' experts' statistical analyses did not constitute common evidence that could prove plaintiffs' assertion that Oracle had a policy and/or practice of basing starting pay on prior pay that caused a disparate impact as to class members' pay, in violation of the California Fair Employment and Housing Act.[10] Specifically, the court found that "both of Plaintiffs' labor economist experts have testified that Dr. Neumark's regression analyses identify only a correlation between starting pay and prior pay, which both experts acknowledge does not prove causation."[11] "[I]n the absence of any evidence of a written policy by Oracle requiring managers to base starting pay on prior pay, Plaintiffs' Updated Trial Plan presents no manageable way to account for the testimony of managers to explain whether, in fact, they did consider prior pay when determining starting pay, and if so, to what degree."[12]

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[5] Order Granting Oracle America, Inc.'s Second Motion for Decertification, *Jewett v. Oracle America, Inc.*, No. 17-CIV-02669 (San Mateo County Super. Ct.) (July 12, 2022).
[6] *Id.* at 4.
[7] *Id.* at 6.
[8] *Id* at 4-5.
[9] *Id.* at 5.
[10] Cal. Gov. Code §12940, *et seq.*
[11] Order Granting Oracle America, Inc.'s Second Motion for Decertification, at 8.
[12] The Court also questioned how plaintiffs could prove their prior pay claims using common evidence in light of Oracle's showing that 12% of the class had been hired after the company had "prohibited any inquiries into, or reliance upon, prior pay to determine starting pay." *Id.*

2. *Ellis v. Google, Inc.*

In September 2017, three former Google employees filed suit against Google, alleging claims of unequal pay under California's Equal Pay Act on behalf of all women who worked at Google in California.[13] Following motion practice, Plaintiffs' amended complaint narrowed the scope of the class to include women who worked in six categories of jobs at Google.[14] The court certified the class on May 27, 2021.[15]

In its certification order the court found that because "Plaintiffs and Google have proffered contrary, but common evidence—expert opinion based on data—upon which they base their respective arguments regarding how Google actually operates. . . . [c]ommon questions therefore predominate."[16] The Court therefore held that it need not hear individualized testimony on whether employees within any given job code perform "substantially similar" work under the EPA, but rather the question of whether job codes establish "substantial[] similar[ity]" could be resolved with common evidence.[17] In another portion of the ruling, the trial court determined that Google's affirmative EPA defenses also did not raise individualized issues, but rather could be litigated on a classwide basis using "common evidence" consisting of an aggregated statistical model.[18] It held that "[w]hether Google applied its bona fide factors consistently within its job codes is ascertainable through statistical analyses without resorting to individualized proof."[19]

The plaintiffs' certification arguments in *Ellis v. Google* primarily relied on the testimony and analyses of the same labor statistician used by the plaintiffs in *Jewett v. Oracle*, Professor David Neumark. Just as in *Jewett*, the plaintiffs in *Ellis* prevailed at the certification stage based on arguments that their expert statistical analyses constituted common evidence that could answer classwide issues, without the need for individualized evidence. Any disagreement between the experts, meanwhile, the court treated as irrelevant to the issue of class certification and instead treated as a "battle of the experts" that did not require resolution at the certification stage.[20]

Google did not move for decertification. The parties subsequently reached a settlement for $118 million.[21]

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[13] Class Action Complaint, *Ellis v. Google, Inc.*, No. CGC-17-561299 (San. Fran. County Super. Ct. Sept. 14, 2017).

[14] First Amended Class Action Complaint, *Ellis*, No. CGC-17-561299 (Jan. 3, 2018).

[15] Order Granting Plaintiffs' Motion for Class Certification, *Ellis*, No. CGC-17-561299 (May 27, 2021).

[16] *Id*. at 8.

[17] *Id*. at 5-8.

[18] *Id*. at 10.

[19] *Id*. at 10.

[20] *Id.* at 8.

[21] Order Granting Plaintiffs' Motion for Preliminary Approval of Class Action and PAGA Settlement, *Ellis*, No. CGC-17-561299 (July 25, 2022), Ex. A.

3. *Huang v. Twitter*

In *Huang v. Twitter, Inc.*, the plaintiff alleged that Twitter's promotion policies resulted in a disparate impact on a proposed class of female software engineers.[22] Yet in July 2018, the superior court denied plaintiff's motion for class certification, holding that the plaintiff had failed to demonstrate that Twitter's managers employed a "common mode of exercising discretion" or that Twitter had a "uniform employment practice" affecting that discretion, as required by *Wal-Mart Stores, Inc. v. Dukes*.[23] The court noted that despite testifying that there was a gender disparity in promotions at Twitter,[24] plaintiff's expert conceded that he did not "know the cause of such disparate impact."[25] Because plaintiff and her expert did not identify a uniform policy or practice, the court, relying heavily on *Dukes*, found plaintiff had failed to satisfy the commonality requirement.[26] The California Court of Appeals affirmed this ruling in December 2019, holding that substantial evidence supported the trial court's finding that Plaintiff had not established commonality or typicality.[27]

B. Federal Class and Collective Actions

This section summarizes select federal cases that have similarly relied on labor economists to address whether common issues predominate in the context of class certification.

1. *Moussouris v. Microsoft*

In October 2015, three female employees of Microsoft Corporation brought a class action suit alleging the company had a continuing policy, pattern, and practice of sex discrimination against female employees and asserting both disparate impact and disparate treatment claims.[28] In July 2018, the District Court for the Western District of Washington denied plaintiffs' motion for class certification, holding that plaintiffs did not carry their burden to establish common

[22] First Amended Complaint, *Huang v. Twitter, Inc.*, No. CGC-15-544813 (San. Fran. County Super. Ct., Apr. 1, 2016).
[23] *See* Order Denying Plaintiff's Motion for Class Certification, *Huang v. Twitter, Inc.*, No. CGC-15-544813 (San. Fran. County Super. Ct., July 3, 2018).
[24] Plaintiff's expert, Dr. C. Daniel Vencill, testified that women at Twitter were promoted less frequently than men, that the time spent in each position before promotion was much greater for women and that promotions became more infrequent as employees moved to more senior positions. *Id.* at 7.
[25] *Id.* at 8-9.
[26] *Id.* at 2. The court also found that Plaintiff's claims were not typical of the class and that Plaintiff failed to demonstrate that the class action mechanism was the superior method for adjudicating class members' claims. *Id.*
[27] Opinion, *Huang v. Twitter, Inc.*, No. A155155 (Cal. Ct. App. Dec. 4, 2019), at 1, 9-15. The appellate opinion does not substantively discuss the parties' expert's testimony or analyses.
[28] Complaint, *Moussouris v. Microsoft Corp.*, No. C15-1483JLR (Sept. 16, 2015); Second Amended Complaint, *Moussouris* (Apr. 6, 2016).

questions on behalf of the class, the typicality of class members, or that plaintiffs were adequate representatives for the class.[29]

The court's discussion of experts centered primarily on the question of commonality on the disparate impact claim. The court found that the opinions of plaintiffs' I/O Psychologist expert, Dr. Ann Marie Ryan, actually weakened plaintiffs' case for certification. On the post-*Dukes* question of whether supervisors at Microsoft were operating under "a common mode of exercising jurisdiction," for instance, the court found plaintiffs' experts to be "of no assistance."[30] Rather than identifying commonalities in how managers exercised discretion, Dr. Ryan emphasized the "*lack* of standardization in how factors are evaluated and the *lack* of standardization in the process itself."[31] Further, the court noted that the plaintiffs' reliance on Microsoft's training to show that evaluation criteria were "uniformly understood" by lower managers "belie[d] their own expert's evaluation."[32] Plaintiffs' statistical expert, Dr. Henry S. Farber's bottom-line statistical model also "shed[ ] no light on whether Microsoft had a company-wide policy constraining the discretion of lower-level managers."[33] Combined with testimony by plaintiffs' declarants that showed Microsoft managers did not exercise discretion in a uniform manner, plaintiffs' own experts effectively disproved plaintiffs' commonality arguments. In December 2019, the Ninth Circuit affirmed the District Court's denial of certification.[34]

2. *Kassman v. KPMG*

In a case that began in June 2011, four women employed as client service professionals at KPMG sought to certify a nationwide class of more than 10,000 female employees in KPMG's tax and advisory functions, asserting claims under the disparate impact and disparate treatment provisions of Title VII and the Civil Rights Act of 1964.[35] Following several years of briefing, in 2018 the District Court denied certification on the Title VII class because Plaintiffs had not shown a common question sufficient to meet the standard set out in *Dukes*.[36]

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[29] *Moussouris v. Microsoft Corp.*, No. C15-1483JLR, 2018 WL 3328418, at *13 (W.D. Wash. June 25, 2018), *aff'd*, 799 F. App'x 459 (9th Cir. 2019).
[30] *Id.* at *21.
[31] *Id.* (emphasis added).
[32] *Id.* at *20 n. 14.
[33] *Id.* at *21. ("Even if Dr. Farber's report conclusively establishes disparities based on gender, 'that would still not demonstrate that commonality of issue exists.'" (quoting *Dukes*, 564 U.S. at 457)).
[34] *Moussouris v. Microsoft Corp.*, 799 F. App'x 459 (9th Cir. 2019).
[35] *See* Third Amended Complaint, *Kassman v. KPMG LLP*, ECF No. 35, Case No. 1:11-cv-03743-LGS (S.D.N.Y. Jan. 6, 2012).
[36] *Kassman v. KPMG LLP*, 416 F. Supp. 3d 252, 266-67 (S.D.N.Y. 2018). The court also denied (1) certification of a subclass of New York employees for lack of evidence specific to a New York class, and (2) second stage collective action certification of the Equal Pay Act claims because plaintiffs had not shown the members of the opt-in collective worked at a single establishment or were similarly situated. *Id.* at 267.

The order denying certification discussed expert testimony at length. Plaintiffs' statistical expert, Dr. Alexander Vekker, ran regressions comparing employees at the "function" level which he testified showed a disparity in pay. Citing *Dukes* and *Bolden v. Walsh Constr. Co.*,[37] the court held that even if it accepted Dr. Vekker's analysis, it merely "begs the question" and "cannot by itself establish" commonality.[38] Moreover, the defendant showed that the disparities identified in Vekker's regressions were largely explained by differences in employee service line and cost center.[39] The court also found Plaintiffs' human resources expert, Dr. Caren Goldberg, unpersuasive. Dr. Goldberg opined that common compensation policies existed based on KPMG's use of overlapping salary ranges.[40] The court rejected this argument because it boiled down to an argument that discretion delegated to lower-level managers allowed for bias in compensation decisions.[41] The court concluded commonality was not satisfied because KPMG's "pay and promotions procedures operated more as a framework that dictates *who* will make discretionary decisions rather than *how* they will exercise their discretion."[42] On April 12, 2021, the court approved the parties' settlement agreement.[43]

3. *Chen-Oster v. Goldman, Sachs & Co.*

This case—one of the first and oldest post-*Dukes* decisions on class certification in the context of pay discrimination claims—was filed over a decade ago.[44] Although the magistrate judge had initially recommended denying class certification (following a full hearing on the issue), in March 2018 the district court rejected that recommendation and granted certification of a class of female associates and vice presidents across three separate revenue-producing divisions at Goldman Sachs, on claims alleging disparate impact and disparate treatment discrimination under Title VII and the New York City Human Rights Law.[45] The court's certification decision was premised on its finding that plaintiffs had satisfied the predominance requirement as to their disparate impact and disparate treatment claims by pointing to "generalized statistical evidence" provided by the plaintiffs' experts.[46]

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[37] 688 F.3d 893 (7th Cir. 2012).
[38] *Kassman*, 416 F. Supp. 3d at 282-83.
[39] *Id.* at 283.
[40] *Id.* at 278.
[41] *Id.* Dr. Goldberg also opined that KPMG compounded pay gaps by using prior salaries to set current salaries, but the court found that Dr. Goldberg's testimony – that KPMG moves employees to the middle of their pay bands over time by putting more money towards groups that are further behind – actually cut *against* that argument. *Id.* at 278-79.
[42] *Id.* at 277-78 (emphasis added).
[43] *Kassman v. KPMG LLP*, 2021 WL 1393296 (S.D.N.Y. Apr. 12, 2021).
[44] Complaint, *Chen-Oster v. Goldman, Sachs & Co.*, No. 1:10cv6950 (S.D.N.Y.) (filed Sept. 16, 2010) (ECF 5).
[45] Opinion and Order, *Chen-Oster*, No. 1:10cv6950 (Mar. 30, 2018) (ECF 578).
[46] *Id.* at 40-47; *see also* Decision and Order Denying Motion to Reconsider, *Chen-Oster*, No. 1:10cv6950 (Aug. 8, 2019) (ECF 804), at 2-3 ("[T]he Certification Order made abundantly clear that class certification was premised on being able to conduct a trial as to both disparate impact and disparate

In July 2021, Goldman Sachs filed for decertification.[47] Among other arguments, Goldman Sachs asserted that discovery had shown their decision-making practices to be too decentralized and discretionary to constitute a "common mode of exercising discretion that pervades the entire company," and that "the factual basis for the Court's preliminary [certification] findings does not exist."[48] Rather, Goldman Sachs argued, "[t]he challenged processes involved the exercise of discretion by tens of thousands of reviewers for more than a thousand class members performing widely varying jobs" and that ample discovery demonstrates that reviewers were granted discretion "to apply flexible review criteria … *in different ways.*"[49] The motion also questioned the ability of the plaintiffs' expert statistical analyses to show discrimination as to each member of the class.[50] On March 17, 2022, the motion for decertification was denied.[51] Trial is currently set to begin June 7, 2023.[52]

4. *Cahill v. Nike, Inc.*

In August 2018, four women who were former employees at Nike brought federal and state disparate treatment and disparate impact discrimination claims under Title VII and the Oregon Equality Act against the company.[53] Plaintiffs filed their motion for certification on January 10, 2022, relying on the testimony and analysis of Dr. David Neumark and Dr. Kathleen Lundquist.[54] Meanwhile, Defendants' opposition, filed on March 25, relies on the expert analysis of Dr. Ali Saad.[55] Both sides have also moved to exclude the testimony of opposing experts.[56]

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treatment with statistical evidence of a generalized nature. The Court emphasized that both Plaintiffs' prima facie case and Defendant's rebuttal would turn on 'generalized proof of statistical evidence.'") (internal citations omitted).

[47] Defendants' Memorandum of Law in Support of Their Motion for Decertification, *Chen-Oster*, No. 1:10cv6950 (July 22, 2021) (ECF 1224).

[48] *Id*. at 4.

[49] *Id*. (emphasis in original).

[50] *Id*. at 26.

[51] Order, *Chen-Oster*, No. 1:10cv6950 (Mar. 17, 2022) (ECF 1337).

[52] Order, *Chen-Oster*, No. 1:10cv6950 (Feb. 13, 2023) (ECF 1414).

[53] First Amended Complaint, *Cahill et. al. v. Nike, Inc*., No. 3:18-cv-01477-JR (D. Or) (Nov. 19, 2018) (ECF 42).

[54] Motion to Certify the Class, *Cahill v. Nike, Inc*., No. 3:18-cv-01477-JR (D. Or) (January 10, 2022) (ECF 146) (Restricted by Protective Order); Declaration of Kathleen Lundquist in Support of Plaintiffs' Motion for Class Certification, *Cahill v. Nike, Inc.*, No. 3:18-cv-01477-JR (D. Or) (January 10, 2022) (ECF 148) (Restricted by Protective Order); Declaration of David Neumark in Support of Plaintiffs' Motion for Class Certification, *Cahill v. Nike, Inc.*, No. 3:18-cv-01477-JR (D. Or) (January 10, 2022) (ECF 149) (Restricted by Protective Order).

[55] Response in Opposition to Motion to Certify the Class, *Cahill v. Nike, Inc*., No. 3:18-cv-01477-JR (D. Or) (March 25, 2022) (ECF 183); Declaration of Ali Saad in Support of Defendant Nike Inc.'s Opposition to Plaintiffs' Motion for Class Certification, *Cahill v. Nike, Inc.*, No. 3:18-cv-01477-JR (D. Or) (ECF 186) (March 25, 2022) (Restricted by Protective Order).

[56] Motion to Exclude the Opinions of Kathleen Lundquist Ph.D., *Cahill v. Nike, Inc*., No. 3:18-cv-01477-JR (D. Or) (March 25, 2022) (ECF 179); Motion to Exclude the Opinions of David Neumark Ph.D.,

On November 22, 2022, Magistrate Judge Jolie Russo issued findings and recommendations that Plaintiffs' motion for class certification be denied.[57] Judge Russo also recommended denying each of the motions to strike opposing expert testimony.[58] Judge Russo looked at Plaintiffs' reliance on their expert witnesses to establish commonality with disfavor. She said: "by using an aggregate statistical analysis as their primary evidence of disparate impact, plaintiffs put the cart before the horse and essentially argue the impact provides the common thread as to the discrimination."[59] With respect to the expert opinions specifically, Judge Russo concluded that while the testimony of the experts is relevant, it is also not entitled to significant weight because the Court is able to examine the facts and come to its own conclusions on whether there is a common practice or policy.[60] Judge Russo noted a statistical analysis is useful primarily in "understanding an issue once the policy [] or standard operating procedure is identified."[61] With respect to the job relatedness analysis, she said the opinion only "becomes important once an actual company-wide policy has been identified."[62]

As of the time of this writing, the court had not yet decided whether to adopt Judge Russo's recommendations.

C. Merits Cases Not Requiring Certification

Similar issues concerning expert testimony exist in non-class cases where the plaintiff nevertheless represents a group of employees. Administrative actions brought by the OFCCP is one such instance. The OFCCP has the authority to bring claims against federal contractors on behalf of their employees. Because OFCCP is pursing these claims, and not the employees themselves, class certification requirements do not strictly apply. The same is true for Private Attorney Generals Act (or PAGA) claims in California. A representative plaintiff who brings a PAGA claim on behalf of the state need not meet the formal requirements for class certification to obtain relief.

1. Claims Brought by OFCCP

a. OFCCP v. Oracle

In September 2020, Administrative Law Judge Richard Clark issued an incredibly detailed 280-page Recommended Decision and Order finding that all of OFCCP's claims against Oracle

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Cahill v. Nike, Inc., No. 3:18-cv-01477-JR (D. Or) (March 25, 2022) (ECF 181); Motion to Rule as Inadmissible Parts of the Expert Report of Ali Saad, Ph.D., *Cahill v. Nike, Inc.*, No. 3:18-cv-01477-JR (D. Or) (ECF 221) (April 25, 2022) (Restricted by Protective Order).

[57] Findings and Recommendation, *Cahill v. Nike, Inc.*, No. :18-cv-01477-JR (D.Or) (Nov. 22. 2022) (ECF 310)

[58] *Id.*

[59] *Id.* at 39.

[60] *Id.* at 23-26.

[61] *Id.* at 24 n.13.

[62] *Id.*

should be dismissed with prejudice.[63] Specifically, ALJ Clark found that OFCCP (1) failed to prove its disparate treatment claim of intentional "pattern or practice" discrimination in compensation, (2) failed to prove its claim of disparate impact discrimination based on an alleged practice of basing starting pay on prior pay, and (3) failed to prove its disparate treatment claim of intentional "pattern or practice" discrimination in job assignments.[64]

These findings were based on ALJ Clark's conclusion that the models and analyses proffered by OFCCP's key statistical expert, Dr. Janice Madden, were inconsistent with the requirements of Title VII. He determined that OFCCP's statistical evidence "does not support an inference that Oracle is discriminating, or that there are disparities to be explained by either a pattern or practice of discrimination or a policy or practice of relying on prior pay."[65] Instead, ALJ Clark found OFCCP and Dr. Madden had "reach[ed] [their] results by making powerful, but unwarranted assumptions."[66]

On the pattern or practice compensation claim, ALJ Clark concluded that "Dr. Madden's analysis is highly aggregated and not attuned to potentially important differences between groups within job functions. Dr. Madden's analysis does not similarly situate employees with respect to the work performed."[67] ALJ Clark further observed:

> Dr. Madden's measures of experience and education are very rough estimates and poorly capture the sort of education and experience that matters for compensation at Oracle. Dr. Madden's analysis relies largely on assumption about aggregation and the view that it is unnecessary to control for variances between employees at a group level, but this assumes away the important question about potential explanations for the raw disparities and thus undermines the inferential power of the model.[68]

Similarly, with respect to OFCCP's disparate impact claim, ALJ Clark concluded "Oracle did not have a policy or practice. . . of relying on prior pay in salary setting and OFCCP did not show a disparate impact attributable to such a policy."[69] He also ruled that even if Oracle did have a policy or practice of basing starting pay on prior pay, OFCCP failed to prove it caused any disparate impact, because the most that OFCCP demonstrated was a *correlation* between starting pay and prior pay, which is insufficient to prove *causation*. ALJ Clark properly recognized that even a "significant correlation" does not necessarily "support an inference to

[63] *See* Recommended Decision and Order, *OFCCP v. Oracle*, ALJ No. 2017-OCF-00006 at 2-4 (Sept. 22, 2020).
[64] *Id*.
[65] *Id*.at 275.
[66] *Id*.
[67] *Id*. at 3.
[68] *Id*.
[69] *Id*. at 4.

causation;" one must evaluate the possible alternative causes of the observed correlation before drawing any such conclusions.[70]

Finally, with respect to the disparate treatment claim involving job assignments, ALJ Clark found Dr. Madden's compensation-based analyses "poorly constructed" and "ill-equipped" to support OFCCP's claim of discriminatory steering.[71] Her statistical analyses[72] did not take into account facts about Oracle's business. Dr. Madden's analyses "ma[d]e no attempt to similarly situate employees," and "did not examine how an individual came to hold a particular job."[73] Rather than consider "how Oracle functions and how employees end up in jobs, Dr. Madden either assumed facts or used a statistical analysis to infer facts,"[74] while simultaneously ignoring evidence running counter to her assumed facts.[75] As a result, ALJ Clark found OFCCP had failed to establish even an initial inference that Oracle engaged in a pattern or practice of steering discrimination.

In addition to dismissing OFCCP's claims based largely on the shortcomings of the statistical analyses by OFCCP's expert, ALJ Clark also summarized the role that statistics can (and cannot) play in a case involving claims of systemic discrimination. He observed:

> [S]tatistical evidence can, on its own, establish a *prima facie* [case] of discrimination. But a case cannot be won simply by coming forward with *any* analysis showing a disparity and then requiring the defendant to complete a statistical analysis establishing that there is no discrimination. Rather, the statistics may be used to license an inference to a regular practice of intentional discrimination – the required showing in a pattern or practice case. To make that showing, the statistical analyses must have sound methodology and explanatory power, and should eliminate the most common nondiscriminatory explanations, focus on the proper groups for comparison, and yield statistically significant results. *Segar v. Smith*, 738 F.2d 1249,1274 (D.C. Cir. 1984). A statistical analysis that omits consideration of critical factors will not make out a claim for discrimination. *EEOC v. General Tel. Co. of Northwest, Inc.*, 885 F.2d 575, 582 (9th Cir. 1989). The statistical analysis, then, must be evaluated for basic adequacy to determine whether it supports an inference to discrimination.[76]

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[70] *Id*. at 274.
[71] *Id.* at 263, 265.
[72] ALJ Clark also noted a "dearth of non-statistical evidence of steering or assignment discrimination," and found "no evidence that employees at Oracle are 'assigned' jobs at all in any normal sense of 'assign.'" *Id.* at 259.
[73] *Id.* at 262, 264.
[74] *Id.* at 263.
[75] "The major factor influencing how an employee ends up in a job is the job he or she applied for, but OFCCP and Dr. Madden do not present statistical evidence that takes this into account." *Id.* at 264.
[76] *Id.* at 218-19.

b. OFCCP v. Analogic

In March 2019, OFCCP faced similar critiques from Administrative Law Judge Colleen Geraghty in *OFCCP v. Analogic Corp.*,[77] in which OFCCP also brought claims of systemic pattern or practice discrimination and disparate impact compensation discrimination based largely on aggregated statistical analyses.[78] In *Analogic*, just as in *Oracle*, Judge Geraghty found, after a seven-day hearing involving competing expert testimony, that OFCCP had "failed to prove a pattern and practice case of disparate impact or intentional pay discrimination," and that "OFCCP's statistical analysis without any persuasive anecdotal evidence[ ] was insufficient to establish intentional discrimination."[79] Specifically, ALJ Geraghty found that the "failure" of OFCCP's expert, Daniel S. Levy, "to include the variables Analogic includes in determining pay increases … is a significant concern in accepting his statistical analysis," and that "[t]he omission … undermines his methodology and the probative weight of his conclusions."[80]

c. OFCCP v. Enterprise Rent-A-Car

In a 2021 decision by the Administrative Review Board of the USDOL ("ARB"), the ARB unanimously vacated and remanded a July 2019 ALJ decision finding Enterprise Rent-A-Car liable for intentional and unlawful discrimination.[81] The initial ALJ decision had concluded that Enterprise had a racial disparity in its hiring of African-Americans for management trainee positions that was in violation of Executive Order 11246 and was liable for damages of more than $6.5 million in back pay and interest.[82] ALJ Morris Davis held that both OFCCP's expert and defendant's expert "found a disparity in the hiring of African-American applicants…with statistical significance in excess of two standard deviations," and that the statistical evidence was buttressed by the testimony of rejected applicants.[83] ALJ Davis credited Dr. Janice Madden's opinions and indicated that defendant's own expert seemed to essentially agree with respect to the existence of a disparity and the calculation of damages.[84]

In November 2021, however, the ARB vacated the ALJ's decision, finding that ALJ Davis had applied the wrong legal standards in both his disparate treatment and disparate impact analysis.[85]

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[77] *See* Recommended Decision and Order, *OFCCP v. Analogic Corp.*, 2017-OFC-00001 (Mar. 22, 2019), https://oalj.dol.gov/DECISIONS/ALJ/OFC/2017/In_re_ANALOGIC_CORPORATION_2017OFC00001_(MAR_22_2019)_090427_CADEC_PD.PDF.
[78] *Id.* at 2.
[79] *Id.* at 43.
[80] *Id.* at 37.
[81] *See* Order of Remand, *OFCCP v. Enterprise RAC Company of Baltimore, LLC,* ARB Case No. 2019-0072, ALJ Case No. 2016-OFC-00006 (Nov. 3, 2021).
[82] *See* Recommended Decision and Order, *OFCCP v. Enterprise RAC Company of Baltimore, LLC,* ALJ Case No. 2016-OFC-00006 (July 7, 2019), at 122-23 (the parties were directed to "verify the accuracy" of the damages calculation and "adjust it…to present value.").
[83] *Id.* at 122.
[84] *Id.* at 103, 123.
[85] Order of Remand, *OFCCP v. Enterprise RAC Company of Baltimore, LLC,* ARB Case No. 2019-0072. The ARB's decision did not substantively discuss expert evidence, simply adopting the ALJ's finding that

The case was remanded to the ALJ to apply the correct legal standards.[86] On remand, the case was assigned to ALJ Dierdra M. Howard, where it is currently pending.

2. The California Private Attorney Generals' Act ("PAGA")

The Private Attorneys General Act is a statute in California that authorizes an individual to stand in the shoes of the state on behalf of "aggrieved employees" to allege violations of the California Labor Code. PAGA claims themselves are raised in relation to various wage and hour allegations, but sometimes are pled alongside discrimination and/or equal pay claims. Although a PAGA plaintiff is not required to meet class certification requirements to represent a group of "aggrieved employees," and the subject matter of the claims are not squarely in the EEO space, the representative nature of the claim makes it worth a brief mention here.

Despite being able to avoid formal class certification requirements, as a practical matter, PAGA plaintiffs have to jump similar hurdles with respect to offering common evidence about alleged labor code violations. Often, this is accomplished via (1) company wage and hour policies; and (2) a statistical analysis of employee time and pay data. For example, where a PAGA plaintiff alleges a claim based on meal period violations (i.e., employees were unable to take timely, uninterrupted meal periods), she will often retain an expert statistician to analyze employee timecards and opine on the rate of missed, late, or short meal periods in those records as evidence of a presumptive violation. However, even acknowledging the rebuttable presumption that the timecards are accurate, the timecards themselves do not establish *why* an employee did not take a timely, uninterrupted meal period. Accordingly, the defense of this claim will often require individualized evidence to determine whether there was actually a violation of the Labor Code, or whether the "aggrieved employees" (or any of them), were provided the opportunity to take a timely, uninterrupted break and chose not to.

The California Supreme Court will soon resolve a split of authority regarding whether trial courts have the power to strike or limit an unmanageable PAGA claim. In 2021, the California Court of Appeal for the 2nd District held in *Wesson v. Staples the Office Superstore LLC*,[87] that the trial court had inherent authority to manage its docket, which included striking a claim that could not be fairly and efficiently tried. In 2022, the 4th District Court of Appeal *Estrada v. Royalty Carpet Mills, Inc.*,[88] disagreed and instead concluded that the trial court's authority is limited to rendering the claim manageable by limiting the presentation of witnesses and evidence, not by striking the claim altogether.

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the statistical evidence from both experts showed a statistically significant racial disparity in hiring. *Id.* at 7-8 n. 24.

[86] *Id.* at 14.

[87] 68 Cal. App. 5th 746 (2021)

[88] 76 Cal. App. 5th 685 (2022).

III. Strategic Considerations For Statistical Experts in Employment Litigation

The common thread in each of the above cases is the presentation by plaintiffs of generalized and/or aggregated expert statistical analyses to either support class certification or attempt to prove classwide claims on their merits, an approach that is nearly universal in class and collective equal pay and pay discrimination cases. This section addresses some of the common themes that arise in class cases that depend upon this kind of expert testimony.

A. Understanding The Statistical Tools Being Used

Broad statistical analyses are one of the primary tools used by plaintiffs in class employment litigation. But the aggregate, average outcomes dictated by statistical analyses do not necessarily reflect individual employment decisions; instead, there is often a disconnect between broad statistical evidence and the legal standards that apply in discrimination actions, including any individualized defenses that defendants may assert. For example, systemic pay discrimination or pay equity class actions often involve purported classes of hundreds or thousands of individuals across dozens (or hundreds) of jobs. And the job-related factors that matter for those jobs may differ, and may not always take the form of a quantitative input that can be accounted for mathematically. Yet disputes between statistical experts can often overwhelm both a judge and jury, who can easily get lost in the thousands of pages of statistical analyses, charts, graphs, tables and equations that reflect the expert opinions offered up in these cases.

Accordingly, it is important that the lawyers, and not just the experts, understand the statistical tools being used and how those tools relate to the case at hand. This matters for determining how to structure the analyses, how to convey the analyses to the trier of fact, and how to rebut critiques leveled by the other side. In defending against a case that relies on these kinds of analyses, it is particularly important to understand the statistical design (and the limitations of that design) and to be able to convey the information in an accessible and digestible way. Judges, like many people, may find it easy—particularly at a pre-merits stage of the case—to see complicated mathematical equations or terminology in expert reports and assume the disagreements between the experts are matters to be resolved by the jury as issues of credibility. The task for the lawyers is therefore to educate the court about the statistical tools being used—to not only explain what those analyses actually do, but, at least for defendants, to highlight the questions such analyses cannot answer because they simply are not designed to address the relevant legal question the court must decide.

B. Dealing With Multiple Regression Analyses

The most common statistical method underlying plaintiffs' proof in class equal pay and discrimination litigation is a regression model. Mathematically speaking, a regression model hypothesizes the effect of one or more explanatory variables on a dependent variable; a multilinear regression (at least in theory) allows the analyst to account for the impact of legitimate factors on a given employment decision (*e.g.*, pay outcomes at a given company) and to identify the residual impact attributable to gender, race, or some other protected characteristic.

But it's not always the case that these statistical tools answer the relevant question or furnish the required proof.

Imagine a scatter plot that graphs a dependent variable (*e.g.*, pay) against a possible explanatory variable (*e.g.*, years worked at a company) as a series of points. Every employee in the modeled group appears somewhere on the plot as a point showing their compensation and years worked. A regression model draws a line (usually, in a "linear" regression model, a straight line) that best "fits" the scattered points and then uses that line to describe how changes in the explanatory variable predict changes in the dependent variable (that is, if an employee's years worked goes up by 1, how much would we expect their compensation to change). An analyst using multiple linear regression to estimate the model, the workhorse statistical technique used by labor economists, can also calculate the fraction of the total variation in the dependent variable that is explained by the independent variables included in the model.

Regression models are relatively cheap to prepare and easy to run. But regression models are only probative when they are designed to answer the question dictated by legal claims at issue. Additionally, as discussed in greater detail below, the reliability of particular regression model's results often depends on the assumptions on which the model is based.

1. Regression Models Provide Only Averages

As noted above, regression models provide only an average measure of the difference in outcomes between demographic groups in a given population. While as a theoretical matter, such an average may provide useful information about the population studied, the law often requires more. For example, to succeed on a classwide equal pay claim, a plaintiff must prove that each class member was paid less than one or more comparators (meaning, a person from a different demographic group that performs the same or substantially similar work). Where a class member was not in fact paid less than a comparator, that class member has no equal pay claim. Because whether there are actual—as opposed to *average*—disparities is the relevant question in an equal pay claim, it remains an open question whether an aggregated regression model can be useful in proving such a violation. Even ignoring any other potential problems with a regression analysis, the average "gap" provided by a regression offers no evidence of a pay gap for any specific class member.

In other words, a regression that finds an average X% gap in pay between men and women within a given population, says nothing about any specific individual's or sub-group's pay, or how their pay fared relative to men. By design, it is not intended to demonstrate (nor does it demonstrate) that any particular woman, or any woman at all, was in fact paid X% less than any particular male comparator. Nor does that regression prove that every woman in the group, or any particular woman, was paid less than a male comparator by any amount.

While most notable in the context of an equal pay action, the problem is not absent from other kinds of employment litigation. For example, while proving disparate treatment discrimination does not necessarily require the identification of a male comparator for every class member who

was paid more, regression models still are capable only of showing average pay differences, which may be probative with respect to raising an inference of discrimination, but defendants still have the opportunity to rebut that inference, as well as raise individualized defenses in response to plaintiffs' *prima facie* case.

2. Regression Models Are Only As Good As The Assumptions Upon Which They Rely

Like any statistical tool, the utility of a regression model depends on the quality of the data on which it is based and the context in which it is used. A regression model can be estimated on nearly any collection of data, but it cannot tell you anything about whether the underlying data is meaningful, or whether the dataset being analyzed is the appropriate one for the questions the parties seek to answer. A regression, for instance, cannot tell the difference between compensation data for a group that includes only lawyers and data for a group that includes lawyers *and* paralegals without an appropriate explanatory variable. It will produce a regression line and variation information among the individuals in the model either way. It is incumbent upon the proponent of the analysis to ensure it is set up properly and the opposing party to examine the regression output and related diagnostic statistics to determine whether the regression model is useful to address the question(s) at hand.

In the context of employment litigation where identification of the proper comparator group is a crucial first step, this means that a regression model by itself does nothing to ensure that the group being analyzed is composed of individuals performing substantially similar work, or that the statistical model is constructed in such a way that it yields comparisons among employees who perform substantially similar work. This is a key *assumption* that the expert conducting a regression makes, not a conclusion that the regression dictates. Plaintiffs often argue that a regression-produced average "proves" that class members are making X% less than their comparators for substantially similar work – but this is only true if the group being analyzed was performing substantially similar work to begin with, or the statistical modeling (*e.g.*, interacted variables) is sufficient to ensure that the pay comparisons truly look to only those individuals who are performing substantially similar work. If the groupings chosen by the lawyers or the expert include individuals performing different kinds of work, then the results produced by a regression analysis of those groups (or, especially, of multiple groups combined) simply do not answer the question of whether there are pay differences between employees actually performing substantially similar work.

Stated another way, no amount of math can fix faulty preliminary assumptions in the grouping of data. The math itself may be correct; but if the assumptions underlying the statistical modeling are wrong, the conclusions based on those assumptions are wrong as well.

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3. Regression Models Rarely Control For All Relevant Explanatory Factors

To produce meaningful answers to the question of whether protected status and employment outcomes (*e.g.*, pay) are correlated, a regression model should include the explanatory variables likely to have a causal relationship with the dependent variable, in particular those that also happen to be correlated with protected status. In other words, to understand the impact of any particular explanatory variable (*e.g.*, gender) on a dependent variable (*e.g.*, pay), the model *also* should account for as many *other* variables likely to impact the dependent variable as possible. At a high level, a regression model works by process of elimination—it estimates the impact of gender on pay (in this example) by eliminating the impact of every other variable it is told to consider. Accordingly, in order to have a meaningful result, it must include variables that matter, and the more relevant variables included, the better "fit" the regression analysis is likely to have, and the less likely it generally is that the estimated coefficient on protected status is impacted by exclusion of a factor that matters (meaning it is correlated with protected status and also influences the outcome under review).

With respect to allegations of intentional pay discrimination, this means adjusting for variables other than protected status (*e.g.*, gender, race, age, *etc*.) that might reasonably impact employee compensation (*e.g.*, relevant experience, specific skills, awards, certifications, relevant educational background, *etc*.). In practice, these can be difficult variables to take into account and may result in the use "proxies" instead. However, while proxies may prove useful in estimating effects for academic research purposes, they often do not work as well in the employment litigation context, particularly when dealing with a complex and diverse workforce.

It is again critical to examine what variables a given regression analysis is supposed to account for, how those variables are defined for purposes of the model, and whether there are missing variables likely to have an impact on pay.

4. Regression Models Often Fail to Explain Significant Aspects of the Outcome at Issue (Such as Pay or Promotions)

As described above, regression models attempt to "fit" a set of distributed data points in a way that best explains the variation in the data caused by the chosen explanatory variables. The degree to which any particular regression line "fits" the data may vary widely. Almost any complex regression analysis will leave at least some unexplained variation in the data, and it would be unrealistic to expect otherwise in the employment litigation context. The question then becomes, how much variation is acceptable and where is the turning point between a probative regression and a meaningless one. Although perhaps intuitive that there is not often full explanation, it is likely less intuitive (though nevertheless true) that in many instances, a regression may actually leave more of the relevant variation unexplained than it explains.

The degree to which a regression model explains the variation in a set of data is commonly represented by a statistical measure called "R-squared" (or R^2).[89] The "R-squared" value is the share of the variation in the dependent variable that is explained by the variation of the independent variables included in the regression model. Stated another way, the R-squared measures how much of the variation in the variable you are studying (*e.g.*, compensation) is explained by all of the factors included in the model, on a scale from 0 to 1. So, for example, if a given regression analysis has an R-squared value of 0.4, this means the independent variables in the model explain 40% of the variation in pay among these employees. The other 60% of why their pay varies from each other remains unexplained and is thus attributable to something other than the factors included in the model. The addition of a factor to the model that explains part of the 60% initially unaccounted for can dramatically change the estimated coefficients of the original list of factors, including protected status.

The R-squared value can be a useful gauge for the usability of a regression. To interpret the results of the analysis figure (*i.e.*, the gender coefficient) as a gender gap, plaintiffs' expert needs to assume that there is no factor that accounts for any of that 60% "left out" pay variation that is also correlated with gender. In such an example, it is likely, and potentially demonstrable by defense experts, that additional, non-discriminatory factors will narrow the measured wage gap while improving the explanatory power of the model. Even if defendants' Human Resources Information System (HRIS) does not electronically capture these additional factors, defendants can nevertheless argue that these factors are nonetheless legitimate, non-discriminatory, and missing from the model. There are also potentially other statistical methods that would achieve the intended results while accounting for these additional factors. For example, defense experts can also use cohort reviews where the importance of these missing factors can be shown (*e.g.*, by reviewing resumes and capturing actual relevant experience for a selected group of comparators).

Once all available factors are included in a regression, and the amount of unexplained variation is identified, the implication is that the unexplained variation is caused by discrimination. In other words, because the model purports to account for all legitimate factors and the disparities are not explained, plaintiffs will argue there must be discriminatory factors at play. In turn, from a defense perspective, understanding what a regression model does not account for is just as important as understanding what it does account for, in order to be able to argue it is a long leap to "discrimination" when a large swath of variation is unexplained by the model.

5. Aggregation Can Create a Misleading Impression

Statistical experts in employment litigation often rely on aggregated statistics to buttress their analyses against attacks based on unexplained variation (see above) and wide confidence intervals.[90] Aggregation, though, can entail its own suite of problems.

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[89] *See, e.g.*, Ramona L. Paetzold and Steven L. Willborn, *The Statistics of Discrimination* § 6:6 (2016) ("The *coefficient of variation*, or R^2, is a statistic that measures the proportion of the total variability in the dependent variable (compensation level) that has been explained by the predictor variables").

[90] A "confidence interval" for a regression analysis is a range of possible values – around the single, calculated but uncertain, "result" – that are consistent with the estimate. For example, a regression on

For example, if a given job has only five or ten employees with significantly varying compensation, experience, etc., a regression analysis run on such a group will likely result in a very poor fit (*i.e.*, a low R-squared) and a very wide confidence interval (*e.g.*, a -5% gap, plus or minus 20%). Other things being equal, the more data points one has, the higher the precision of the statistical relationships. The increase in precision, however, arises from the mathematical relationship between sample size and variance and *not* because larger datasets are necessarily "more correct" or contain more relevant information. For example, if you "double" your sample size by analyzing employment snapshots on consecutive days, the precision of the estimates will apparently increase even though it is unlikely that a material change in circumstances occurred between the two days.

Presumably, statistical experts in litigation engage in this aggregation because it generally results in a higher R-squared and a narrower confidence interval. But, by aggregating *dissimilar* jobs together, the analysis cannot discern possible differences in how much or how little any variable impacts one group versus another. Instead, the regression normalizes that impact across the groups that were aggregated together. While the R-squared may increase, this is because some control factors (*e.g.*, job code or grade) may explain pay differences across the workforce at large – but that does not mean the model is any better at explaining pay differences among employees who perform similar work (which is typically the legal question at issue). What happens often is that the model has a high R-squared because it recognizes, for example, that managers make more than interns, but cannot explain why some managers make more than other managers. Such a model would be of little help in a matter seeking to evaluate compensation differences among employees who perform substantially similar work. Put more simply, critical differences between individual jobs and employees get lost when those groups are aggregated together.

When using an aggregated analysis, experts often defend against the aggregation problem by "controlling" for job differences. This does not solve the problem. Not only does the model still result in important distinctions between the groups being lost due to aggregated averaging, but it also will result in a misleadingly high R-squared because the control for job category will explain much of the variation in compensation. *Controlling* for jobs or job groupings in an aggregated regression is not the same as performing a regression *within each* job or job grouping.

6. Regression Models Only Show Correlation, Not Causation

Finally, it is important to remember that while regression models measure the relationship between two (or more) variables, they can show only a correlation. Given that the HRIS data commonly used in litigation matters is observational and do not come from experiments, models

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compensation for male and female employees might find a -3% pay gap, with a 95% confidence interval of plus or minus 5%. The -3% result is calculated by the regression, but the regression still contains statistical uncertainty. The +/-5% window around -3% (from -8% to +2%) is the 95% or 2-standard deviations confidence interval and means that, ignoring any other issues with the regression, the -3% estimate from the analysis is not only consistent with unfavorable differences of up to -8% but also with favorable differences of up to 2%.

run on this type of data cannot, by definition, establish a causal link between variables. Whether the correlation in any given case is strong enough to support a causation argument will depend on the facts of the particular case and the statistical model used.

C. Relationship Between Labor Economists and I/O Psychologists For Litigation Purposes

While labor economists and statisticians continue to play a dominant role in employment class actions, there is also a growing demand for experts in the field of I/O Psychology. I/O Psychology is a branch of psychology focused on the workplace, with an emphasis on areas such as the particular skills and competencies required for specific jobs, the information needed and/or used to hire, evaluate, manage and compensate employees, and methodologies for evaluating employee job performance.[91] In the context of employment litigation, I/O psychologists may render opinions relating to how a company has organized its workforce, whether employees in particular jobs perform substantially similar work, or the effectiveness of employee hiring, firing, promotion and evaluation procedures, among other topics.

The questions to which I/O psychologists testify often form the base assumptions on which statistical experts rely. For example, in equal pay cases, statistical experts typically do not render an opinion on which employees perform equal or substantially similar work. Instead, they are told by counsel which job groupings to include in their regression analyses, or they make assumptions based on the data (for example, that individuals who share certain titles or attributes necessarily perform similar work). Yet as explained above, if those assumptions are incorrect, the results from any regression that relies upon them may be largely meaningless. It is usually an I/O psychologist who renders an expert opinion on the appropriate job groupings to capture employees performing substantially similar work. As such, any party seeking to prove its case with statistics may need an I/O psychologist to establish the bases on which the statistical analyses rely.

Conversely, defendants must be ready to counter the opinions of plaintiffs' I/O psychologists. In the first instance, this can often be done with fact witnesses familiar with the defendant company's inner workings. Such witnesses can attest to the on-the-ground reality of job groupings, performance evaluations, hiring processes and any number of other organizational functions in far more detail than plaintiffs' I/O expert. These fact witnesses can be further bolstered by retaining an I/O psychologist as a counter expert. A defense I/O psychologist not only can provide a contrary interpretation of organizational testimony and documents, but s/he also can critique plaintiffs' expert according to standards within their own field. Accordingly, in any case involving statistical analyses of employee data, litigants also should consider whether an I/O psychologist expert would be beneficial.

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[91] *See generally* Society for Industrial and Organizational Psychology, https://www.siop.org/; American Psychological Association, Industrial and Organizational Psychology, https://www.apa.org/ed/graduate/specialize/industrial.

IV. Recommendations For Working With Experts In Employment Cases

This section discusses some high-level recommendations for working with experts in employment cases in light of the above considerations.

A. Ensure Expert Opinions Bear Upon the Specific Claims At Issue

At the outset, counsel and expert witnesses must work hand in hand to ensure the expert understands the question she is charged with addressing within the context of the litigation. That question may be different depending on the stage of the case, and the specific purpose of the expert report. For example, an expert report in support of class certification may look different, and address different legal questions from, an expert report on the merits of the claims. The relevant research questions are also shaped by the substantive claims at issue (*e.g.*, disparate impact or equal pay case). While this may seem obvious, it is not always the case in practice that there is a clear understanding of what, specifically, the expert is analyzing within the context of the broader case and how that opinion fits in to the larger legal theory.

A firm grasp of the legal questions at issue is important not just for affirmative analyses, but also in order to effectively critique opposing experts and identify weak points in their analysis. The ability to identify a lack of congruence between an expert's opinions and the legal theory that opinion is intended to support can be helpful to discredit the opinion. Accordingly, it is helpful when counsel have at least some foundational knowledge about the subject of the expertise to ground the opinions in the context of the litigation and understand how the opinions fit within the broader legal strategy. By the same token, counsel who do not understand how expert analysis interplays with legal arguments may sabotage their own case, either by misunderstanding the import of the statistical analyses or by contradicting their own experts.

This is apparent in the context of pay equity litigation, particularly with respect to class actions, when plaintiffs and their experts attempt to prove a class EPA claim by saying their expert's aggregated statistical model shows a "pattern or practice" of discrimination, which is not an element of a class EPA claim. Specifically, as noted above, to demonstrate a *prima facie* EPA claim, a plaintiff does not need to show discriminatory intent. Instead, a plaintiff need only prove that she was paid less than a man who performs substantially similar (or equal) work. Yet aggregated regression analyses that include in the model the pay of large groups of employees who hold different jobs demonstrate only the aggregate group averages of the pay of everyone in the model, without necessarily focusing on individual pay comparisons of men and women who perform substantially similar or equal work, bringing into question whether aggregated statistics that purport to analyze the pay of large groups who perform different jobs can ever prove a classwide EPA claim. Given the increase in pay equity class actions based on recently amended state equal pay acts, combined with the lack of federal law addressing EPA class actions,[92] this

[92] The federal EPA is part of the Fair Labor Standards Act ("FLSA"), and therefore class-based federal EPA claims proceed under the FLSA's two-part collective action standard. They do not proceed as Rule 23 class actions, meaning state litigants litigating state-based EPA class actions do not have a body of federal EPA class action case law on which to rely for guidance.

issue is sure to be heavily litigated over the next several years and illustrates the criticality of working closely with experts to understand what their analyses do (and don't) show.

B. Weigh The Pros And Cons of "Reinforcement" Experts Carefully

As discussed above, expert-related issues in class action litigation are complicated. Particularly with respect to statistical analyses, it can be overwhelming for the court (and/or a jury) to wade through the technicalities of expert reports and the intricacies of the regression model and relevant facts. One strategy that is seemingly gaining popularity is to engage a second expert with the same specialty who serves as "reinforcement" for the primary expert's opinions.

It remains to be seen whether these kinds of experts are productive. While the obvious utility is to create the impression that one side's analysis is better than the others, in reality, the other party remains free to also hire reinforcement. Depending on the nature of the expert testimony and the purpose for which a reinforcing expert is offered, it may also be the case that such reports are not admissible and/or invade the province of the jury to determine what weight to offer to which testimony. Furthermore, litigants looking forward to trial should also consider whether the testimony of multiple expert witnesses on the same topic may prove counterproductive and call into question the credibility or competence of the primary expert witness.

C. Establish And Maintain Expert Credibility

While judges may vary in their ability to grasp complex mathematical or scientific principles underlying expert analyses, they uniformly dislike being misled. Additionally, given the reticence of most courts to exclude expert testimony entirely, maintaining the credibility of one's own expert while finding ways to undercut the credibility of opposing experts is critical. It is particularly important to ensure that expert witnesses appear neutral and balanced, both in the content of their report and also in their manner of testimony. Expert witnesses should not be advocates for one party or the other, but instead, they are professionals who are bringing their specialized knowledge, experience, skill, training, and/or education to bear on the issues of a given case.

V. Conclusion

The legislative, regulatory, and litigation landscape continue to accelerate the pressure on employers to proactively analyze their employment practices and data, both quantitatively and qualitatively. The rise of pay equity class actions and the continued growth of systemic discrimination cases by both government agencies and the plaintiffs' bar also underscore the growing demand for experts in the employment field. The even more recent rise of pay transparency legislation suggests that pay equity and discrimination cases will only become more common. Given these trends, understanding not only the legal landscape, but also the role of expert testimony, and the tools available (statistical and otherwise) to help build or breakdown a case is more important than ever.