USING CONTRACT TERMS TO DETECT UNDERLYING LITIGATION RISK: AN INITIAL PROOF OF CONCEPT

by
Elizabeth Tippett[*]

This preliminary study examines whether the presence or absence of certain terms in a company's form contracts can reveal its level of litigation risk.

First, I estimate the risk of independent contractor misclassification litigation for service-based "sharing economy" businesses by measuring the amount of control they exercise over their contractors. The estimates reveal that sharing businesses vary in the level of control they exercise over their independent contractors, such that some businesses are exposed to a higher level of litigation risk than others.

Next, I analyze each company's form contracts for provisions intended to mitigate misclassification-related litigation risk ("misclassification provisions"). I then test whether the presence of such provisions predicts a company's estimated litigation risk on both in-sample and out-of-sample data.

Results suggest that the number of misclassification provisions in a company's form contract is generally predictive of its estimated litigation risk, although the sample used in this study was small. The regression model was predictive of risk estimates on out-of-sample data.

Results tentatively support the hypothesis that the presence of certain contract provisions can signal greater underlying liability. Lawyers may inadvertently broadcast underlying liability when they add provisions intended to mitigate a perceived litigation risk.

[*] Assistant Professor, University of Oregon School of Law. I thank Ariana Denley, Elizabeth Miller, Skylar Kogelschatz, Justin Morehouse, Alina Salo, Noah Morss, and Kelly Oshiro for their research assistance on this project. I am also grateful to my colleagues Erik Girvan and Eric Priest, the other participants in the Lewis & Clark Business Law Symposium, and its organizer, Henry Drummonds, as well as Kersten Broms, Charles Lewis, and Thomas Payne of the *Lewis & Clark Law Review.*

I. INTRODUCTION

Consumers are no longer surprised to learn that companies gather large quantities of information about them to gain insight into their current and future behavior. Even scraps of seemingly unrelated information can lead to useful insights through data analysis. Target can make a reasonably accurate guess that a woman is pregnant based on purchases of unscented lotion.[1] Credit card companies have figured out that purchasing a skull hood ornament predicts payment default.[2]

Can a similar approach be used to pry into the private legal lives of corporations, as revealed by the contract terms they impose on users? Academics have been mining the filings of publicly traded corporations for years.[3] Legal commentators have also analyzed judicial decisions to assess the facts that influence the results.[4]

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[1] Charles Duhigg, *How Companies Learn Your Secrets*, N.Y. TIMES MAG. (Feb. 16, 2012), http://www.nytimes.com/2012/02/19/magazine/shopping-habits.html.

[2] *See* Charles Duhigg, *What Does Your Credit-Card Company Know About You?*, N.Y. TIMES MAG. (May 12, 2009), http://www.nytimes.com/2009/05/17/magazine/17credit-t.html.

[3] *See, e.g.*, Lucian A. Bebchuk & Jesse M. Fried, *Executive Compensation at Fannie Mae: A Case Study of Perverse Incentives, Nonperformance Pay, and Camouflage*, 30 J. CORP. L. 807, 818 (2005); Theodore Eisenberg & Geoffrey Miller, *Ex Ante Choices of Law and Forum: An Empirical Analysis of Corporate Merger Agreements*, 59 VAND. L. REV. 1975, 1977, 1981 (2006); George S. Geis, *An Empirical Examination of Business Outsourcing Transactions*, 96 VA. L. REV. 241, 256 (2010); Joseph A. Grundfest, *The History and Evolution of Intra-Corporate Forum Selection Clauses: An Empirical Analysis*, 37 DEL. J. CORP L. 333, 339–40 (2012); Lee Harris, *Missing in Activism: Retail Investor Absence in*

This study examines whether certain contract provisions can serve as a window into a company's potential liability for independent contractor misclassification.[5] In this study, I examine whether the presence or absence of contract terms intended to mitigate the risk of independent contractor misclassification signals an elevated risk that the contractor has been misclassified. I hypothesize that lawyers representing companies that face a high risk of contractor misclassification will fill the contract with terms intended to mitigate that risk. The presence of such terms thus reveals the lawyer's undisclosed risk assessment.

I use service-based sharing businesses[6] as a test case for this analytical approach because they commonly use independent contractors and their contracts are available online. First, I develop a rough measure for the relative likelihood that a sharing business will be sued for misclassifying their independent contractors ("litigation risk score"). The metric compares the amount of control that sharing companies exercise over their independent contractors to the level of control exercised by their traditional competitors (e.g., taxi and delivery services, temp agencies, job listing agencies). This comparison provides a baseline for assessing whether certain subcategories of sharing businesses face a high or low risk of independent contractor misclassification litigation.

I then assess whether the presence of certain contract provisions in a company's form contracts predicts that company's litigation risk score. These include, for example, provisions denying employee status; affirming independent contractor status; denying control over performance of

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Corporate Elections, 2010 COLUM. BUS. L. REV. 104, 114; Stewart J. Schwab & Randall S. Thomas, *An Empirical Analysis of CEO Employment Contracts: What Do Top Executives Bargain For?*, 63 WASH. & LEE L. REV. 231, 232–33 (2006).

[4] *See, e.g.*, Russell Korobkin, *Empirical Scholarship in Contract Law: Possibilities and Pitfalls*, 2002 U. ILL. L. REV. 1033, 1035 (2002) (summarizing empirical research in contract law); *see also* Daniel A. Farber & John H. Matheson, *Beyond Promissory Estoppel: Contract Law and the "Invisible Handshake,"* 52 U. CHI. L. REV. 903, 904 (1985); Robert A. Hillman, *Questioning the "New Consensus" on Promissory Estoppel: An Empirical and Theoretical Study*, 98 COLUM. L. REV. 580, 582–83 (1998); Fred S. McChesney, *Tortious Interference with Contract Versus "Efficient" Breach: Theory and Empirical Evidence*, 28 J. LEGAL STUD. 131, 171 (1991).

[5] Independent contractor misclassification refers to the employer practice of treating employees as "independent contractors" to avoid complying with wage and hour laws, paying payroll taxes, or providing workers compensation coverage or other benefits. When an independent contractor providing services to a company meets the definition of an "employee" under the applicable legal standard, the independent contractor is deemed "misclassified" and the company may be liable for damages and penalties.

[6] The terminology for this particular business model is evolving. These types of businesses have also been described as the "sharing economy," the "on-demand economy," the "gig economy," the "collaborative economy," or a "peer-to-peer" model. A subset of these businesses could also be characterized as "crowdsourcing."

the contract; and provisions requiring the individual performing services for the company ("service provider")[7] to indemnify the company for tax risks (collectively, "misclassification provisions").

The total number of misclassification provisions in a contract was statistically associated with a higher litigation risk score. A regression model based on total misclassification provisions accurately sorted companies into high and low risk bins in 75% of cases for in-sample data, and produced similar results for the out-of-sample data.

The limitations of this study present several opportunities for further study and refinement. First, it is specific to a particular type of risk, in a particular industry that may not be generalizable to other types of risk or industries. Second, error in the underlying risk estimate may undermine the predictive validity of the model. Third, the usefulness of the model depends upon the availability of contract provisions for analysis. Nevertheless, this study tentatively answers the question of whether contract terms can be a useful predictor of risk, and represents an initial proof-of-concept for regulators interested in combining such information with existing data to enhance their risk assessment models.

Part II defines the term "sharing business" and briefly explains the uncertain misclassification risks for businesses that share services. Part III explains the litigation risks of comparator business models. Part IV describes the methodology used to generate the metrics used in the study. Part V summarizes the results of the analysis, which are discussed in Part VI.

II. SERVICE-BASED SHARING BUSINESSES AND THEIR RISKS

A. "Sharing Businesses" Defined

The term "sharing economy" or "sharing businesses" was first used with respect to businesses that facilitated peer-to-peer sharing of tangible goods or real property. For example, in 2010, Lisa Gansky argued that sharing businesses share four characteristics: "sharing, advanced use of Web and mobile information networks, *a focus on physical goods and materials*, and engagement with customers through social networks."[8] The paradigmatic example of a sharing business focused on physical goods is AirBnB, which helps consumers rent out their homes to travelers.[9]

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[7] I use the term "service provider" to refer to individuals that perform services for the company at issue, whether in the capacity of an employee or an independent contractor.

[8] Lisa Gansky, The Mesh: Why the Future of Business Is Sharing 15–16 (2d ed. 2012) (emphasis added).

[9] *About Us*, Airbnb, https://www.airbnb.com/about/about-us.

Over time, the sharing economy category has come to include companies that share a combination of labor and property, or labor only. The ride-sharing company, Uber, shares both labor and property—a car owner contributes both his physical property (a car) and his time to drive customers to their destination.[10] Amazon's Mechanical Turk (MTurk) service offers a form of virtual labor sharing—individuals complete tasks online, such as transcribing text from an image or audio file.[11] Other labor-based sharing services, such as Zaarly and TaskRabbit, offer services on demand, such as furniture assembly, cleaning, shopping, and moving services.[12]

I loosely define sharing companies to include rental-based business models where the rented asset is not owned by the sharing business, but by a consumer; the rented asset is not shared at the physical location of the sharing business; and sophisticated software serves to match the asset owner to the consumer.[13] I use the term "asset" broadly to include labor.

I place sharing companies into three categories, based on the type of shared asset:

(1) property only ("property sharing");

(2) a combination of property and labor ("property-based services"); and

(3) labor only ("service sharing").

The distinction between property sharing and service sharing can be somewhat amorphous. In particular, some labor is involved in sharing property (e.g., cleaning or packaging the property between transactions). Nevertheless, I define property sharing companies as sharing businesses that rent access to real property or a tangible good. The labor associated with a rental service is incidental to the property and primarily consists of transferring possession of the property to the customer. The customer exercises control over the property while rented. Examples of property-sharing companies include Neighborgoods (for renting tools), Poshmark (for renting designer fashion), and Turo (for renting cars).[14]

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[10] *Start Driving with Uber*, UBER, https://www.uber.com/drive.

[11] *FAQ*, AMAZON MECHANICAL TURK, https://www.mturk.com/mturk/help?helpPage=overview (emphasis added).

[12] *See, e.g.*, *How Zaarly Works*, ZAARLY, https://www.zaarly.com/howzaarlyworks; *How TaskRabbit Works*, TASKRABBIT, https://www.taskrabbit.com/how-it-works.

[13] *See also* GANSKY, *supra* note 8, at 3 ("Using web-enabled mobile networks, they can define and deliver highly targeted, very personal goods and services at the right time and location.").

[14] *See, e.g.*, *About NeighborGoods*, NEIGHBORGOODS, http://neighborgoods.net/about; *What Is Poshmark?*, POSHMARK, https://poshmark.com/what_is_poshmark. Turo was previously known as RelayRides; some of the figures refer to Turo by its previous name. *About Turo*, TURO, https://turo.com/about.

I define "property-based services" as sharing businesses where the property owner uses the property for the benefit of the customer. The owner combines property and her labor to accomplish the customer's purpose. This would include ride-sharing companies like Uber, Lyft, and their competitors. It would also include a pet-sitting service, which requires the service provider to have a physical location to care for the pet.

I define "service sharing" as business models where an individual service provider sells his or her labor (but not possession or beneficial use of property) to a customer of the sharing company. In service sharing businesses, the tools or equipment, if any, are incidental to the labor. For example, a furniture assembler on TaskRabbit might bring tools with him to complete the job, but the tools are incidental to the service of furniture assembly. An individual completing tasks on MTurk might use his own computer to complete online tasks. Unlike a property-based service, the customer is requesting help not because they lack a computer, but because they lack the time to complete the task.

Sharing companies in the property-based services category and service-sharing category are of particular interest from an employment law standpoint because they involve substantial amounts of labor. They are therefore more likely to give rise to disputes over independent contractor status.

B. Legal Overview of Independent Contractor Misclassification

Any lawsuit involving state or federal employment laws faces the threshold issue of whether the plaintiff is an "employee." If an individual providing services to a company does not satisfy the definition of employee under the applicable statute, that person is not covered by the law or entitled to its protection.

There is no single definition of "employee." Where the statute provides a meaningful definition of the term, courts will apply that definition. For example, the Fair Labor Standards Act (FLSA), which requires employers to pay minimum wage and overtime, defines "employ" as "includ[ing] to suffer or permit work."[15] Courts have interpreted this definition in favor of broad coverage, and from it derived the "economic realities" test that examines the service provider's dependence on the putative employer.[16]

Some state regulations define "employee" using complex or very specific tests. Oregon's state tax agency, for example, defines a service provider as an employee for tax purposes unless they are "customarily en-

[15] 29 U.S.C. § 203(g) (2012).

[16] Sec'y of Labor v. Lauritzen, 835 F.2d 1529, 1534–35 (7th Cir. 1987).

gaged in an independently established business" and have obtained any applicable licenses.[17]

More commonly, statutes do not meaningfully define the term "employee," in which case courts apply a common law definition.[18] State and federal agencies also tend to rely heavily on the common law definition and variations thereof.[19] The central inquiry of the common law test is the extent of control over the service provider, in which "all of the incidents of the relationship must be assessed and weighed with no one factor being decisive."[20] Relevant to the extent of control are:

> [T]he skill required; the source of the instrumentalities and tools; the location of the work; the duration of the relationship between the parties; whether the hiring party has the right to assign additional projects to the hired party; the extent of the hired party's discretion over when and how long to work; the method of payment; the hired party's role in hiring and paying assistants; whether the work is part of the regular business of the hiring party; whether the hiring party is in business; the provision of employee benefits; and the tax treatment of the hired party.[21]

The greater the extent of control, the greater the likelihood that the service provider will be considered an employee. The parties' agreement as to whether the service provider is an employee or contractor is not part of the test. Some courts ignore the agreement entirely,[22] while others treat it as a relevant but not dispositive fact.[23]

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[17] OR. REV. STAT. § 670.600 (2013).

[18] Nationwide Mut. Ins. Co. v. Darden, 503 U.S. 318, 322–23 (1992).

[19] IND. CODE § 22-4-8 (Indiana definition for unemployment insurance claims, which includes amount of control exercised over putative employee); Injured Workers' Ins. Fund v. Orient Exp. Delivery Svcs., Inc., 988 A.2d 1120, 1129 (Md. Spec. App. 2010) (articulating standard applied by Maryland Workers' Compensation Commission); Martinez v. Combs, 231 P.3d 259, 268 (Cal. 2010), *as modified* (June 9, 2010) (interpreting Industrial Welfare Commission test to include the common law control test, among other tests); 20 C.F.R. § 404.1007 (2015) (applying the common law control test to Social Security benefits); 26 C.F.R. § 31.3121(d)-1 (2015) (applying the common law control test for federal income tax purposes).

[20] *Darden*, 503 U.S. at 324 (internal quotations and citation omitted).

[21] *Id.* at 323–24 (internal quotations and citation omitted).

[22] *See, e.g.*, Alexander v. FedEx Ground Package Sys., Inc., 765 F.3d 981, 989 (9th Cir. 2014) (stating that California law does not consider the parties' agreement dispositive); Toyota Motor Sales USA, Inc. v. Superior Court, 269 Cal. Rptr. 647, 654 (Ct. App. 1990) (agreements "will be ignored if the parties, by their actual conduct, act like 'employer–employee'"); Brown v. Who's Three, Inc., 457 S.E.2d 186, 191 (Ga. Ct. App. 1995) (contractual characterization of the relationship not controlling when clearly negated by other factors); Honeycutt v. Deutschmann, 976 So.2d 753, 755–56 (La. Ct. App. 2008) (written agreement provided evidence of question of material fact of whether plaintiff was an employee); Bee v. Prof'l Courier Int'l, Inc., No. S-99-

In the wage and hour context, courts apply a similar economic realities test that measures whether the worker is "dependent upon the business to which they render service."[24] This test includes six non-exclusive factors, several of which overlap with the control test:

> 1) the nature and degree of the alleged employer's control as to the manner in which the work is to be performed;
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> 2) the alleged employee's opportunity for profit or loss depending upon his managerial skill;
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> 3) the alleged employee's investment in equipment or materials required for his task, or his employment of workers;
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> 4) whether the service rendered requires a special skill;
>
> 5) the degree of permanency and duration of the working relationship;
>
> 6) the extent to which the service rendered is an integral part of the alleged employer's business.[25]

Courts apply these tests in a flexible way to better detect arrangements that are "a mere subterfuge to avoid complying with" employment laws.[26] They caution that any given test is "not exhaustive" and should not be "blindly applied."[27] Instead, courts are free to identify the factors they consider most "pertinent in [the applicable] circumstances."[28] As Katherine Stone has observed, even a single, multifactor test "can be weighed and clustered differently in each case, resulting in unpredictable results in borderline cases."[29]

030, 2000 WL 376310, at *2 (Ohio Ct. App. Apr. 14, 2000) (applying control test despite independent contractor relationship established within contract).

[23] *See, e.g.*, S.G. Borello & Sons, Inc. v. Dep't of Indus. Relations, 769 P.2d 399, 403 (Cal. 1989) ("The label placed by the parties on their relationship is not dispositive . . . ."); O'Connor v. Uber Tech., Inc., 82 F. Supp. 3d 1133, 1148–53 (N.D. Cal. 2015) (agreement disclaiming employment relationship was relevant, but not dispositive, as a "secondary factor" under California's *Borello* test).

[24] Sec'y of Labor v. Lauritzen, 835 F.2d 1529, 1534 (7th Cir. 1987).

[25] *Id.* at 1535.

[26] Zheng v. Liberty Apparel Co. Inc., 355 F.3d 61, 72–74 (2d Cir. 2003) (identifying circumstances that may signal a subterfuge arrangement); *see also S.G. Borello*, 769 P.3d at 403 ("subterfuges are not countenanced").

[27] *In re* Enter. Rent-A-Car Wage & Hour Emp't Pracs. Lit., 683 F.3d 462, 469 (3d Cir. 2012).

[28] *Zheng*, 355 F.3d at 72; *see also In re Enter.*, 683 F.3d at 469 ("[D]istrict courts should not be confined to 'narrow legalistic definitions' and must instead consider all the relevant evidence, including evidence that does not fall neatly within one of the above factors.").

[29] Katherine V.W. Stone, *Legal Protections for Atypical Employees: Employment Law for Workers Without Workplaces and Employees Without Employers*, 27 BERKELEY J. EMP. & LABOR L. 251, 260 (2006).

C. Uncertain Misclassification Risks for Sharing Businesses

Service-based sharing businesses present uncertain misclassification risks because they compete with and resemble a variety of traditional business models. These traditional models vary considerably in the misclassification risk levels they present.

Sharing companies in the property-based services category compete with rental businesses (of the traditional and "sharing" variety). They also compete with transportation and delivery companies. For example, companies like Uber compete with taxi companies, as well as traditional rental car companies (e.g., Hertz). They also compete with property sharing companies like Turo, where the individual owner of the car rents directly to the customer.[30] As discussed in greater detail *infra*, property-sharing companies face a low risk of independent contractor litigation because very little labor occurs beyond transferring possession of the car. By contrast, taxi and delivery companies have faced considerable litigation over employment status of their drivers.

Sharing companies in the service sharing category compete with temporary employment agencies ("temp agencies") as well as job-listing services. For example, a company that needs help transcribing audio files could use a temp agency to find local workers available to perform the job. Alternatively, the company could place an ad in Craigslist to find a suitable employee or independent contractor. The company could also use one of many online service sharing companies, such as MTurk.

MTurk's more traditional competitors face widely varying misclassification risks. As discussed in greater detail *infra*, temp agencies commonly treat their service providers as employees. When temp agencies try to classify service providers as independent contractors, they face a strong likelihood of a dispute over their status as a sole or joint employer. By contrast, an advertising or listing service like Craigslist faces a very low risk of a lawsuit alleging that it is a sole or joint employer. Therefore, the question of whether a sharing service is more like a temp agency or a listing service has a strong bearing on its likely litigation risk.

Sharing businesses also face uncertain risks because they differ from traditional business models in legally relevant ways. As the trial court in the Lyft case observed, "[a]t first glance, Lyft drivers don't seem much like employees. . . . But Lyft drivers don't seem much like independent contractors either."[31] Because these businesses all have a peer-to-peer component, the service provider owns the equipment or property through which they provide the services. This fact weighs in favor of independent contractor status under a mechanical application of both the control test and the economic realities test.

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[30] TURO, *supra* note 14.

[31] Cotter v. Lyft, Inc., 60 F. Supp. 3d 1067, 1069 (N.D. Cal. 2015).

Sharing businesses also tend to lack brick-and-mortar locations for their service providers. While sharing businesses may have physical headquarters for their computer programmers, they typically have no physical location where service providers meet clients, or where the service provider interacts with the company. The absence of physical control over service providers also weighs in favor of independent contractor status under a purely mechanical application of the test.

Sharing companies mediate their interactions with service providers through software. Software can, though need not, exert control over service providers in several ways. Software can limit the service provider's access to the software platform or customers under certain conditions, and set the terms of the service provider's transactions with customers.[32] As Min Kyung Lee et al. argue:

> Increasingly, software algorithms allocate, optimize, and evaluate work of diverse populations ranging from traditional workers . . . to new crowd-sourced workers in platforms like Uber, TaskRabbit, and Amazon mTurk. . . . Algorithmic management is one of the core innovations that enables these [sharing] services. . . . Drivers' performance is evaluated by passengers' rating of their service quality and drivers' level of cooperation with algorithmic assignment. Algorithmic management allows a few human managers . . . to oversee hundreds and thousands of drivers on a global scale.[33]

Rather than a supervisor telling a worker that they cannot negotiate the amount or method of payment, software automatically deducts the company's share of the payment or prevents the worker from entering any amount other than the pre-specified rate. Likewise, a company's sharing platform could be structured to prevent a worker from establishing a direct relationship with the client. This form of control is much less visible to the outside observer. Courts then face the challenge of assessing whether the software that governs the service provider's client interactions is equivalent to the level of control normally exercised by a supervisor.

While litigation risks in the sharing industry remain uncertain, property-based service companies appear to be a particular target for lawsuits. A class of California Uber drivers sued the company, alleging they qualified as employees under the California Labor Code. In March 2015, the district court denied summary judgment for Uber, noting the company

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[32] *See* Min Kyung Lee et al., *Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers, in* PROCEEDINGS OF THE 33RD ANNUAL ACM CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS 1603, 1603 (2015), http://dx.doi.org/10.1145/2702123.2702548 (describing the software-based constraints that ride-sharing companies impose on drivers, and how drivers attempt to work around them).

[33] *Id.*

would not be "a viable business entity without its drivers" because its revenue depends on client payments to drivers. The court was also influenced by Uber's control over fares, prohibition on communications outside of the app, and role in selecting and qualifying drivers.[34] The ruling quoted heavily from a driver handbook that made "suggestions" about accepting ride requests, dress, and radio stations.[35] However, the court also observed several factors that weighed in Uber's favor, including that drivers have control over their hours, drive their own vehicle, that Uber permits subcontracting, and that the relevant agreement treats them as contractors.[36] The Oregon and California labor commissions have also ruled that Uber drivers qualify as employees.[37]

Similarly, a class of California drivers sued Lyft, another property-based service company, for misclassification. The district court in that case denied cross motions for summary judgment.[38] Citing similar facts to the Uber case, the court concluded that reasonable people could disagree as to their employee status and declared the issue a question for the jury.[39]

Service sharing companies have also been sued. A class of cleaners working for Handy attempted to bring a misclassification claim against the company, but the court in that case granted a motion to compel arbitration.[40] A separate class action complaint was filed against a competitor cleaning service, Homejoy.[41] That company shut down after multiple lawsuits, citing difficulty in raising additional venture capital funds.[42] In July 2015, the California district court approved a $585,507 collective action settlement against a sharing service known as Crowdflower for violating federal minimum wage laws. Crowdflower solicited projects from businesses, which it broke down into smaller tasks for individuals to complete over the Amazon MTurk platform.[43]

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[34] O'Connor v. Uber Tech., Inc., 82 F. Supp. 3d 1133, 1142 (N.D. Cal. 2015).

[35] *Id.* at 1149.

[36] *Id.* at 1152–53.

[37] Berwick v. Uber Tech., Inc., No. 11-46739 EK, 2015 WL 4153765, at *6 (Cal. Dep't Indus. Relations June 3, 2015); Or. Bureau of Labor & Indus. Comm'r, Advisory Opinion on the Employment Status of Uber Drivers (Oct. 14, 2015), http://www.oregon.gov/boli/SiteAssets/pages/press/101415%20Advisory%20Opinion%20on%20the%20Employment%20Status%20of%20Uber%20Drivers.pdf.

[38] Cotter v. Lyft, Inc., 60 F. Supp. 3d 1067, 1069 (N.D. Cal. 2015).

[39] *Id.* at 1076, 1082.

[40] Zenelaj v. Handybook Inc., 82 F. Supp. 3d 968, 970 (N.D. Cal. 2015).

[41] Complaint, Ventura v. Homejoy, Inc., No. CGC-15-544750 (Cal. Super. Ct. Cnty. of S.F. Mar. 16, 2015).

[42] Carmel DeAmicis, *Homejoy Shuts Down After Battling Worker Classification Lawsuits*, RE/CODE (July 17, 2015), http://recode.net/2015/07/17/cleaning-services-startup-homejoy-shuts-down-after-battling-worker-classification-lawsuits/.

[43] Otey v. Crowdflower, Inc., No. 12-cv-05524-JST, 2015 WL 4076620, at *1–2 (N.D. Cal. July 2, 2015).

The litigation risk associated with sharing businesses, or subsets thereof, will likely remain unsettled until a body of case law develops to assess employee status within these new business models. Those providing venture financing may not be willing to wait, and may stop financing all or part of the service-based sharing economy.[44] Alternatively, a decreased appetite for litigation—whatever the underlying merits—may lead the industry to reclassify their workers as employees. Some sharing companies have done just that.[45]

III. MISCLASSIFICATION RISKS OF COMPARATOR BUSINESSES

Without a body of settled case law, is it possible to develop a rough sense of whether certain service-based sharing businesses face a high or low risk of litigation? To answer this question, I generate a "control score" for sharing businesses and their comparator business models, derived from the common-law control test and economic realities test. I then compare the distribution of scores for each business model. This comparison provides a quantitative answer as to whether sharing businesses resemble their high-risk or low-risk comparators.

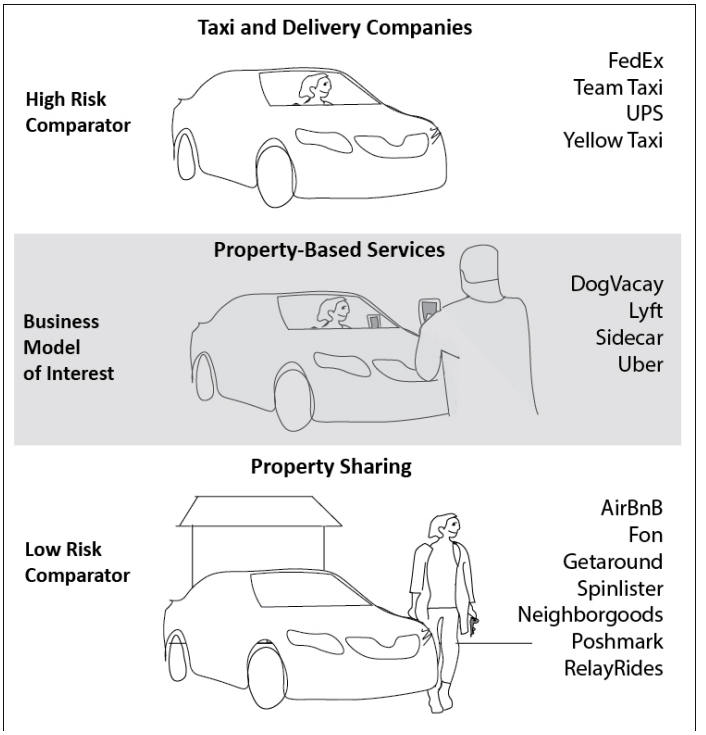
A. Comparators for Property-Based Service Businesses

For property-based service companies, I use taxi companies and delivery services as a high-risk comparator and property-sharing companies as a low-risk comparator (Figure 1, *infra*). The property-based service category includes Uber (ride sharing), Lyft (ride sharing), Sidecar (deliveries), and DogVacay (pet sitting).

[44] One headline in *Fast Company* magazine declared "The Gig Economy Won't Last Because It's Being Sued to Death." Sarah Kessler, *The Gig Economy Won't Last Because It's Being Sued to Death*, FAST COMPANY (Feb. 17, 2015), http://www.fastcompany.com/welcome.html?destination=http://www.fastcompany.com/3042248/the-gig-economy-wont-last-because-its-being-sued-to-death. *But see* Lauren Weber & Rachel Emma Silverman, *On-Demand Workers: "We Are Not Robots,"* WALL ST. J. (Jan. 27, 2015), http://www.wsj.com/articles/on-demand-workers-we-are-not-robots-1422406524.

[45] *See* Kessler, *supra* note 44 (describing sharing companies that hired or reclassified employees to avoid the litigation risk).

Figure 1. Comparators for Property-Based Service Businesses



1. High Risk Comparator—Taxi and Delivery Companies

Taxi companies are a relevant point of comparison because they compete with ride-sharing services for clients. I include delivery services (e.g., FedEx and UPS) because the service provider's work is functionally similar—delivering a person/thing from one location to another. Taxi and delivery cases were also discussed as relevant precedent in Uber and Lyft litigation.[46]

Taxi and delivery services are high risk in that both industries have faced considerable litigation over the employment status of their service providers. Court assessments of the employment status of taxi drivers depend heavily on the amount of control the company exercises over the driver.[47] Many taxi companies operate on a lease system, where the driver

[46] *See* O'Connor v. Uber Tech., Inc., 82 F. Supp. 3d 1133, 1141–42 (N.D. Cal. 2015); Cotter v. Lyft, Inc., 60 F. Supp. 3d 1067, 1078 (N.D. Cal. 2015).

[47] Yellow Taxi Co. v. NLRB, 721 F.2d 366, 373–74 (D.C. Cir. 1983); *see also* Kubinec v. Top Cab Dispatch, Inc., No. SUCV201203082BLS1, 2014 WL 3817016, at *1, 13–15 (Mass. Super. Ct. June 25, 2014) (driver who owned his own medallion and

leases the car for a fixed time period at a fixed rate. In a 1983 ruling, the D.C. Circuit declared taxi drivers properly classified as independent contractors under the National Labor Relations Act where the taxi company operates on a pure fixed-fee lease model, and exercises no control over passenger selection, routes, or driver presentation (e.g., dress code).[48]

Whenever taxi companies depart from fixed-fee lease models and attempt to control the quality of the service, they face a substantial risk of a misclassification dispute or adverse ruling. A taxi company was deemed an employer when it operated under a twelve-month contract, required their drivers to maintain trip sheets documenting their movements and fares, imposed a dress code, and controlled passenger selection through a mandatory radio dispatch system.[49] Another taxi company was deemed an employer when it imposed a weekly, automatically renewing vehicle lease, prohibited drivers from working for other companies, controlled their radio use, and instructed them on where to drive.[50]

Delivery services face similar risks when they treat their drivers as independent contractors.[51] In recent years, FedEx has faced multiple lawsuits for classifying its delivery drivers as independent contractors. The Ninth Circuit concluded that FedEx drivers were employees because they were required to wear uniforms, deliver assigned packages within a specific assigned territory, deliver on specific days and times, and were only allowed to work multiple routes and subcontract their work with FedEx's consent.[52] The Ninth Circuit assigned no weight to contract terms stating that drivers had control over the "manner and means of reaching [mutual business objectives]," and that "[n]o officer, agent or employee of FedEx . . . shall have the authority to prescribe hours of work . . . breaks [or] route."[53] Instead, the court focused on other policies and procedures that gave FedEx "a great deal of control over the manner in which its drivers do their jobs."[54] Managers reserved the right to "ride-along" to evaluate the driver's performance up to four times per year, observing

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car not misclassified where dispatch service paid on a fixed-fee basis and driver not required to accept dispatches).

[48] *Yellow Taxi*, 721 F.2d at 374–79 (describing the relevant factors from City Cab Co. of Orlando, Inc. v. NLRB, 628 F.2d 261, 264–65 (D.C. Cir. 1980), and applying them to the instant case).

[49] *Id.*

[50] Yellow Cab Coop. v. Workers' Comp. Appeals Bd., 277 Cal. Rptr. 434, 436 (Ct. App. 1991).

[51] UPS treats its delivery drivers as employees, and therefore has not faced litigation over the employment status of its drivers.

[52] Alexander v. FedEx Ground Package Sys., Inc., 765 F.3d 981, 989–94, 997 (9th Cir. 2014). *see also* Estrada v. FedEx Ground Package Sys., Inc., 64 Cal. Rptr. 3d 327, 331 (Ct. App. 2007).

[53] *Alexander*, 765 F.3d at 984.

[54] *Id.* at 989.

and recording "small details about each step of a delivery."[55] Also relevant to the Ninth Circuit's determination was the requirement that FedEx drivers complete training and follow FedEx's "Safe Driving Standards."[56] While FedEx drivers furnished and licensed their own vehicles, they were required to be painted with the FedEx logo and could not be used for other purposes without removing the logo.[57]

The D.C. Circuit reached a different conclusion based on the same facts. It applied a modified test, focusing on whether the contractors have a "significant entrepreneurial opportunity for gain or loss."[58] It concluded drivers were independent contractors, citing the same provisions in the contract drivers' ownership of the vehicles, their ability to use the truck for other purposes if they removed the logo, and their ability to subcontract or drive multiple routes if they obtained FedEx's permission.[59] The D.C. Circuit also focused on a driver's right to sell their route to third parties, which two drivers had done "for a profit ranging from $3,000 to nearly $16,000,"[60] as evidence of a significant entrepreneurial opportunity. In contrast to the Ninth Circuit's reasoning that uniforms and guidelines represented employer-like control, the D.C. Circuit further opined that "constraints imposed by customer demands and government regulations do not determine the employment relationship."[61]

In sum, taxi and delivery services can face a substantial risk of misclassification-related litigation when they treat service providers as independent contractors, unless they operate under a pure rental model and exercise no control over their drivers.

2. Low Risk Comparator—Property Sharing Companies

I treat property-sharing companies (e.g., AirBnB) as a low-risk comparator because they involve comparatively small amounts of labor. A property-sharing company sells access to the property itself. The labor associated with a rental service is incidental to the property, and primarily consists of transferring possession of the property to the customer.[62] A

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[55] *Id.* at 985.

[56] *Id.*

[57] *Id.* at 986.

[58] FedEx Home Delivery v. NLRB, 563 F.3d 492, 497 (D.C. Cir. 2009) (internal quotations and citation omitted).

[59] *Id.* at 504.

[60] *Id.* at 500.

[61] *Id.* at 501.

[62] A property-based sharing company could impose quality standards or delivery requirements that would require additional labor on the consumer's part. For example, a company could impose so many standards on property owners that they need to spend substantial amounts of time prior to, during, and after the rental ensuring that the property meets those standards. One car rental service, Turo,

sharing company that shares tools, like a tool rental service, transfers possession of the property for the customer's use. Neither sharing company nor the owner of the tool exercises control over the use of the property while it is rented. A consumer that shares a tool is free to sell her labor for some other purpose for the duration of the rental period.

Business models that involve negligible amounts of labor are at a considerably reduced risk of litigation in two respects. First, many misclassification claims relate to compensation, whether based on federal or state minimum wage or overtime laws, or state wage rules about tips, expense reimbursement or the timing of wage payments. Misclassification-based tax claims are a function of payroll, which itself is typically a function of the number of hours worked. When only a de minimus amount of wages are in dispute, it is difficult to attract a plaintiff's attorney working on a contingency fee basis.[63] Second, where service providers provide only small amounts of labor, they are less exposed to employment-related risks of harm—such as a physical injury—that would give rise to a dispute about their employment status.

As previously discussed, several service sharing and property-based service companies have been sued for independent contractor misclassification. By contrast, I was unable to identify any misclassification lawsuits against property sharing businesses.

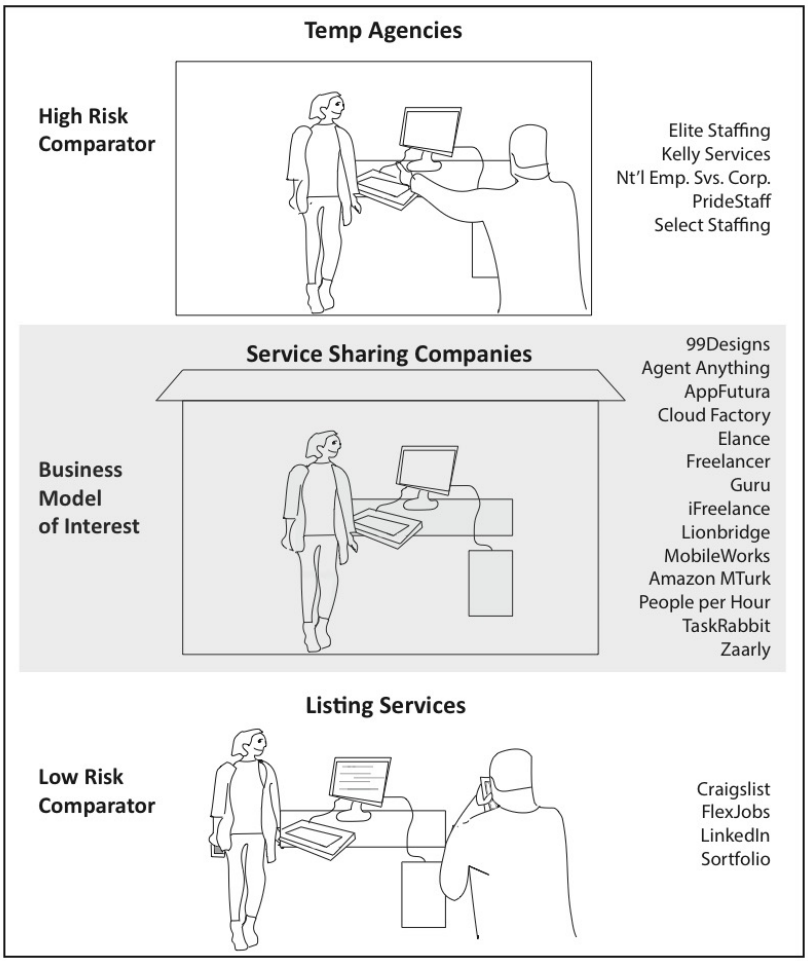
B. Comparators for Service Sharing Companies

For service sharing companies, I use temporary employment agencies as a high-risk comparator and listing companies as a low-risk comparator (see Figure 2). The service sharing category includes several companies: 99Desings, Agent Anything, AppFutura, Cloud Factory, Elance, Freelancer, Guru, iFreelance, Lionbridge, MobileWorks, Amazon MTurk, People per Hour, TaskRabbit, and Zaarly.

provides an ancillary service for owners willing to deliver the car to the customer. TURO, *supra* note 14. In these cases, the rental process imposes more than a de minimus amount of labor on the consumer's part.

[63] For example, in the Crowdflower lawsuit, most of the original plaintiffs performed less than $5 of work, forcing the plaintiffs to drastically cut back on the class size. Otey v. Crowdflower, Inc., No. 12-cv-05524-JST, 2015 WL 4076620, at *2 (N.D. Cal. July 2, 2015).

Figure 2. Comparators for Service Sharing Companies



1. High Risk Comparator—Temporary Employment Agencies

I use temporary-employment agencies[64] ("temp agencies") as a high-risk comparator for service sharing companies. Service sharing companies, like temp agencies, make individuals available to perform services for others. Unlike taxi and delivery companies, they are not high risk in the sense of a high volume of litigation. However, like taxi and delivery companies, individuals performing services through temp agencies are

[64] These types of firms are distinct from employee-leasing firms that place workers at a client site on a longer-term basis, and recruiting firms that help employers identify prospective candidates.

likely to be deemed misclassified where the temp agency classifies them as an independent contractors but exercises a lot of day-to-day control.

Most temporary-employment agencies treat their service providers as their sole or joint employees, which considerably reduces the volume of litigation. Indeed, the value proposition that many temporary-employment agencies provide to their clients is serving as an employer in identifying, screening, assigning, recordkeeping, and paying temporary employees to work in short-term positions for a client.[65]

Some statutes explicitly treat temp agencies as employers.[66] Otherwise, courts apply a common law control test, or a joint-employer test. Like taxi and delivery disputes, courts do not always find in favor of employee status. A federal district court in Minnesota found that a temp agency did not qualify as an employer where it did not select individual workers, did not have the power to hire, and did not control any aspect of the day-to-day work.[67] Although the temp agency managed payroll and some records, that relationship was deemed insufficient to establish an employment relationship under the FLSA.[68]

By contrast, where the temp agency assigned workers to jobs on a day-to-day basis, provided equipment and transportation to the job site, maintained records, and paid the workers, courts have held them to be employers.[69] Critically, a temp agency need not exercise control over the actual performance of the work in order to be deemed an employer: "An

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[65] U.S. EQUAL EMP'T OPPORTUNITY COMM'N, NOTICE NO. 915.002, ENFORCEMENT GUIDANCE: APPLICATION OF EEO LAWS TO CONTINGENT WORKERS PLACED BY TEMPORARY EMPLOYMENT AGENCIES AND OTHER STAFFING FIRMS (1997), http://www.eeoc.gov/policy/docs/conting.html ("[a temp agency] recruits, screens, hires, and sometimes trains its employees. It sets and pay the wages when the worker is placed in a job assignment, withholds taxes and social security, and provides workers' compensation coverage. The agency bills the client for the services performed.").

[66] *See id.* (noting that temp workers are employees of the temp agency in the "great majority of circumstances"); 29 C.F.R. § 825.106 (2015) (FMLA regulations provide that "joint employment will ordinarily be found to exist when a temporary placement agency supplies employees to second employer"); Stone, *supra* note 29, at 259, 269 (noting that the FLSA treats temp agencies as the statutory employer, rather than the client entity, and that some state statutes identify temporary agencies as the employer for unemployment insurance purposes).

[67] Catani v. Chiodi, No. Civ.00-1559(DWF/RLE), 2001 WL 920025, at *6 (D. Minn. Aug. 13, 2001).

[68] *Id.* at *7.

[69] Preston v. Settle Down Enters., Inc., 90 F. Supp. 2d 1267, 1274 (N.D. Ga. 2000). *See also* Baystate Alt. Staffing, Inc. v. Herman, 163 F.3d 668, 675–76 (1st Cir. 1998) (temp agency deemed employer where it was responsible for hiring temp workers; assigned them to particular job sites; had the power to terminate workers; screened workers; transported workers to a job site; and forbade workers from "contacting directly a client company about potential job opportunities").

employer does not need to look over his workers' shoulders every day in order to exercise control."[70]

2. Low Risk Comparator—Listing Companies

I use listing entities as a low-risk comparator for service sharing companies. Listing companies are relevant comparators for service sharing companies in two respects. First, they compete with them for business. Second, service sharing companies can be functionally similar to listing companies when they serve as referral aggregators.

I use the term "listing" to refer to companies that allow companies and individuals to post "help wanted" ads or "seeking employment" ads, but exercise no control over those postings, and provide little to no services beyond the mere ability to post and contact the poster.[71] Listing companies do not charge customers for the amount of labor produced as a result of the introduction, but through listing fees and advertising revenue (e.g., the "help wanted" section of a newspaper). Listing companies also exist in digital forms, as exemplified by Craigslist. I also include LinkedIn in this category because it sells advertising and recruiting tools for employers.[72]

Companies that provide listing services face a low risk of misclassification litigation. Indeed, the risk that a job-listing agency will be considered an employer is so minimal that it is difficult to find any cases that address the issue. There are, for example, cases where an individual applied for a job through Craigslist, and sued parties other than Craigslist as joint employers, suggesting that the plaintiff's attorney did not consider Craigslist a plausible joint employer.[73]

Comparisons to temp agencies are illustrative. Title VII holds temp agencies liable for discriminatory selection practices.[74] However, the

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[70] Brock v. Superior Care, Inc., 840 F.2d 1054, 1060 (2d. Cir. 1988).

[71] This definition is comparable to the EEOC's definition of employment agency: "The operative factor is whether the entity regularly refers potential employees to employers or provides employers with the names of potential employees." U.S. EQUAL EMP. OPPORTUNITY COMM'N, DECISION NO. N-917.002, POLICY GUIDANCE: WHAT CONSTITUTES AN EMPLOYMENT AGENCY UNDER TITLE VII? (Sept. 20, 1991), 1991 WL 11665181, at *2.

[72] *Business Services*, LINKEDIN, https://business.linkedin.com (detailing LinkedIn's hiring, marketing, and selling services for businesses); *see also* Sweet v. LinkedIn Corp., No. 5:14-cv-04531-PSG, 2015 WL 1744254, at *2 (N.D. Cal. Apr. 14, 2015) (describing LinkedIn's business model).

[73] *See* McKenna v. Healthease, Inc., Civ. No. 10-3940, 2013 WL 1702639, at *1 (E.D. Penn. Apr. 19, 2013) *aff'd*, 573 Fed. Appx. 190 (3d Cir. 2014) (unpublished); *In re* Scinta, 978 N.Y.S.2d 470, 470 (App. Div. 2014).

[74] 42 U.S.C. § 2000e-2(b) (2012).

EEOC has opined that job-listing entities that exercise no control over postings do not qualify as "employment agencies."[75]

IV. METHODS

A. Sample Selection

The sample of sharing companies included in the study was generated in 2013, based on references to companies in news articles written between 2011 and 2013.[76] At that time, there were no readily available directories of "sharing" businesses. As a result, the sample is biased towards more established companies in the sharing sector. A few of the companies in the original sample have since gone out of business and were excluded from the analysis.[77] This biased the sample somewhat towards profitable and/or well-funded ventures.

Comparator companies in the temp agency category were identified through Google searches. I selected listing companies that most closely resembled the definition of "listing companies" provided *supra*, limiting the category to online companies. For taxi and delivery companies, I used the two largest delivery companies (FedEx and UPS), a taxi company that had been the subject of a misclassification lawsuit, and an additional taxi company found on the internet. The selection of comparator

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[75] U.S. EQUAL EMP. OPPORTUNITY COMM'N, *supra* note 71, at *2 (noting that "newspapers that exercise control over discriminatory job listings rather than merely printing them" qualify as employment agencies).

[76] Jessica Bruder, *A Wave of Start-Ups Helps Small Companies Outsource Their Tasks*, N.Y. TIMES (Dec. 19, 2012), http://nyti.ms/TZ87Yh; *Daunting Task? Hire Someone from the Web*, WALL ST. J. VIDEO: DIGITS (Nov. 28, 2011), http://www.wsj.com/video/daunting-task-hire-someone-from-the-web/971E8FE5-B201-4406-8FDA-6B3CF3B60B01.html; Martha Crow, Sponsor Content, *The Ultra-Flexible Workforce Model: Talent as a Service*, WIRED (Oct. 2013), http://www.wired.com/insights/2013/10/the-ultra-flexible-workforce-model-talent-as-a-service/; Tomio Geron, *Airbnb And the Unstoppable Rise of the Share Economy*, FORBES.COM (Jan. 23, 2013), http://www.forbes.com/sites/tomiogeron/2013/01/23/airbnb-and-the-unstoppable-rise-of-the-share-economy/#6491db1b6790. Amazon's MTurk was not included in the original sample.

[77] The original sample included oDesk, which merged with Elance and was later renamed Upwork, and Donanza, which closed, but whose assets were acquired by Freelancer. *Upwork*, WIKIPEDIA, https://en.wikipedia.org/wiki/Upwork; Eloise Keating, *Freelancer Makes Its 14th Acquisition, Scooping Up Online Marketplace DoNanza*, STARTUP SMART (Mar. 12, 2015), http://www.startupsmart.com.au/advice/growth/freelancer-makes-its-14th-acquisition-scooping-up-online-marketplace-donanza/. The original sample also included a separate offering from TaskRabbit known as "TaskRabbit for Businesses," which TaskRabbit shut down. *See* Sarah Perez, *Taskrabbit for Business Service Portal Quietly Disappears*, TECHCRUNCH (Apr. 1, 2014), http://techcrunch.com/2014/04/01/taskrabbit-for-business-service-portal-quietly-disappears/. TaskRabbit itself was, however, included in the final sample.

companies was therefore heavily biased towards large, well-known companies.

The companies included in the sample are listed in Figures 1 and 2 *supra*. The final sample included 25 sharing companies, and thirteen non-sharing companies, for a total of 38 companies.

Research assistants collected data on an additional 11 sharing companies following the conclusion of the data analysis in order to test the results on out-of-sample data. These additional companies were identified using an industry analyst's 2013 "Master List of the Collaborative Economy."[78] Ten of these companies were included in the out-of-sample analysis; one proved not to be a sharing company upon further inspection.[79]

B. Coding for the Presence of Control Factors

Research assistants reviewed the websites of the companies[80] in the sample, and answered a series of factual questions about each company ("coding"). The questions were derived from the common law control test and economic realities test. They sought to identify as many facts as possible that might bear upon the company's status as an employer. Two research assistants each completed the coding instrument for each company.[81]

Two of the four research assistants had taken an employment law class, and the other two had not. An additional pair of research assistants gathered the out-of-sample data, neither of whom had taken employment law. None of the research assistants were informed of the purpose of the research, although those that had taken employment law almost certainly recognized that the questionnaire related to control factors from the common law test.

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[78] *See* Jeremiah Owyang, http://www.web-strategist.com/blog/2013/02/24/the-master-list-of-the-collaborative-economy-rent-and-trade-everything. I selected one or two companies from a variety of the categories that appeared to be service-based. I did not select companies that appeared to be overseas, or that were included in the original sample. Several of the companies originally identified for the out-of-sample analysis appeared to be out of business and were not selected.

[79] The companies included in the out-of-sample analysis were Desksurfing, Expertbids, Flipkey, Gigwalk, Redbeacon, RentaFriend, Rover, Wello, Urbangardenshare, and Zilok.

[80] In the case of one of the taxi companies, coders were instructed to base their answers on the facts of the case *Yellow Taxi Co. v. NLRB*, 721 F.2d 366 (D.C. Cir. 1983), and to disregard the legal analysis in doing so. The coders appear to have in fact disregarded the legal reasoning, as their results produced a relatively high control score even though the D.C. Circuit ultimately ruled that they were properly classified as independent contractors.

[81] In a very small number of cases, only one coder answered the majority of the survey instrument.

Not every factor in the common law and economic realities test was included in the questions. The questionnaire did not ask whether the work performed by service providers was "part of the regular business of the hiring party" or an "integral part of the alleged employer's business." Because that factor would almost certainly be present for every company in the sample, its measurement would not be helpful in making distinctions between different types of companies. Some factors that were measured produced no variance. For example, the survey asked whether the services were performed at the company's physical location. Because the coders answered "no" to that question for all companies in the sample, that factor was discarded from the analysis.

Some components of the control test and the economic realities test involve subtleties that could not be easily detected through a website description, and were excluded from the study. These include the right to subcontract, tax treatment, opportunities for profit or loss, and the duration and permanency of the relationship. For example, a question that sought to measure the degree of permanency of the working relationship produced so much inter-rater disagreement between coders that results were discarded. Consequently, the analysis leaves out facts that may be important to a court, particularly in applying the economic realities test.

The nine factors ultimately used in the analysis tended to be somewhat objective factors that could be readily discerned from a website—such as skill level, equipment, control over when and how long to work, and control over the amount of payment. A summary of the factors used to assess control are listed in Table 1 *infra*, along with the level of inter-rater agreement for each factor. The inter-rater agreement was rather low for many of the factors, with levels of agreement ranging from 0.17 to 0.56. Factors originally measured with levels of inter-rater agreement below 0.15 were discarded from the analysis.

I attribute the low level of inter-rater agreement to the limited and scattered information available online, as well as differences in judgment on the meaning of available facts.[82] Factors with the lowest level of agreement tended to be those that involved ambiguous facts and required some form of judgment.[83] This may be symptomatic of the diffi-

[82] One coder may have successfully found information about the pertinent fact on the website, while another may not have found any and thus responded "can't answer."

[83] *See* Erik J. Girvan, *Wise Restraints?: Learning Legal Rules, Not Standards, Reduces the Effects of Stereotypes in Legal Decision-Making*, 22 PSYCHOL., PUB. POL., & L. 31, 33 (2016) (describing legal standards as an example of "inferential coding systems" defined as "measures that require significant discretionary judgments on the part of people for them to produce a rating," and noting increased inter-rater variance in for inferential coding as compared to explicit coding systems); William T. Hoyt & Michael-David Kerns, *Magnitude and Moderators of Bias in Observer Ratings: A Meta-Analysis*, 4 PSYCHOL. METHODS 403, 413 (1999) (meta-analysis of 79 data sets, 49% of the variance in

culty of assessing whether a particular fact signifies greater or less control, similar to the disagreement between the Ninth Circuit and D.C. Circuit over the employment status of FedEx drivers.

C. Calculating the "Control Score" and Litigation Risk

1. Control Score

The scores for the nine factors in Table 1, *infra*, were added to create a "control score."[84] A higher score indicated a greater presence of factors indicating control over the service provider and/or economic dependence on the company.

For each metric, answers from coders were transformed into a variable, where "1" indicated that the service provider had no control, "0.5" indicated some control by both the service provider and the client/company, and "0" indicated control by the service provider. Answers from both coders were averaged to reflect the uncertainty inherent in the exercise.[85] For any factor where one or both coders answered "can't answer," that factor was assigned a score of 0.[86] This method for dealing with information gaps or uncertainty tended to bias the control score downward.[87]

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ratings for measures "that require rater inferences" was due to rater bias, compared to only 5% of the variance for explicit measures). The control test and economic realities test are good examples of inferential coding systems that produce a lot of variance. For example, one factor asked which party had control over when to work. In a service-based market, a service provider may choose which jobs to undertake, but the exact timing of performance is likely determined by the client. Should a coder indicate that the provider decides because they select the jobs, or the client because they select the exact timing of performance? Or should a coder indicate that it was a combination of both the provider and the client? Any of those answers would be reasonable.

[84] A comparison between the nine factors, the control test, and the economic realities test reveals that the measured factors predominantly consisted of factors from the control test. The subtlety of several aspects of the economic realities test made them difficult to measure.

[85] Averaging also tends to dilute the error and magnify the information in the shared variance. Suppose that one coder incorrectly provided an answer scored as 0, and the other coder correctly answered 1. The averaged score will still reflect the incorrect answer, because it will be off by 0.5, but the error will be smaller than if only the incorrect coder had answered the question.

[86] In other words, if one of the coders indicated there was insufficient information to answer the question, or that none of the answers fit the fact pattern, I assumed that the company was not exercising control over the service provider.

[87] For example, many companies received scores at the lower end of the range—between 1.5 and 2.0. It is possible that all of these companies exercised relatively little control over their service providers. It is also possible that some of them exercised greater control than others within the category, but informational gaps resulted in assigning those companies a 0 on certain metrics, where a 1 would have been more

Table 1. Components of Control Score[88]

Factor	Coding	Inter-Rater Reliability[89]
Skill required	1 = no skill 0.5 = some specialized skill or knowledge or 'it depends' 0 = high degree of specialized skill	0.3
Tools and equipment	1 = company provides tools & equipment 0.5 = both company & provider furnish tools & equipment 0 = all other answers	0.34
Control over when to perform work	1= provider has no control 0.5 = it depends/varies 0 = provider has control	0.21
Control over duration of work	1= provider has no control 0.5 = it depends/varies 0 = provider has control	0.25
Control over amount of payment	1 = provider has no control 0.5 = provider has some control 0 = provider has control	0.17
Screening of prospective service providers	1 = yes 0 = no	0.41
Background checks	1 = yes 0 = no	0.43
Interview	1 = yes 0 = no	0.56
Provides benefits	1 = yes 0 = no	0.31

The control score has additional limitations. Each factor is weighted equally. However, courts need not weigh each factor equally; they are free to place greater emphasis on some factors. Courts are also free to focus on facts outside of the test that may bear on control.[90] This disconnect can produce error in the control score to the extent it is viewed as a proxy for how a court would rule on whether the service providers are employees or independent contractors.[91]

accurate. In those cases, the control score underestimates the "actual" level of control.

[88] Most questions also had the option to select the response "can't answer," which were scored as 0 for the purposes of the data analysis, but as separate answers for the purposes of calculating inter-rater reliability.

[89] Cohen's Kappa score.

[90] *See* Rutherford Food Corp. v. McComb, 331 U.S. 722, 731 (1947) ("[T]he determination of the relationship does not depend on such isolated factors but rather upon the circumstances of the whole activity.").

[91] It is in theory possible to estimate the weight that courts assign to different factors based on a sample of court rulings, using a methodology described by Darren Lubotsky and Martin Wittenberg. *See* Daniel Lubotsky & Martin Wittenberg,

The control score also fails to distinguish between control exercised by the company at issue and by the client, for three of the factors: (1) control over when to perform work, (2) the duration of work, and (3) the amount of payment.[92] Where the client exercises complete and exclusive control over these factors, the measure produces a higher control score, even though it does not necessarily increase the company's litigation risk.[93]

Similarly, the score does not distinguish between control exercised by the company and control imposed by government regulation. For example, some state laws require that taxi companies conduct background checks on their drivers.[94] Conducting background checks would ordinarily be an indicator of control, and would increase a company's score on the control test. However, courts would disregard any forms of control imposed by regulation in assessing whether the service provider was misclassified.[95] In summary, the control score is imprecise.

2. Litigation Risk Score

The control score is not equivalent to a litigation risk estimate because it does not take into account whether the company classifies its service providers as independent contractors. For example, the metrics used in this study produced a high control score for UPS, which classifies its drivers as employees. Although UPS exercises a high degree of control, it does not face a high likelihood of a contractor misclassification lawsuit because it already properly classifies its service providers as employees.

The control score was thus converted into a "litigation risk score" by taking into account whether the company classified its service providers as independent contractors or employees.[96] Any company that treats its

Interpretation of Regressions with Multiple Proxies, 88 REV. ECON. & STAT. 549, 556, 559 (2006).

[92] Attempts to include factors disentangling client relationships from company relationships produced a high degree of inter-rater disagreement.

[93] This type of error appears to have been at work for a company called FlexJobs—a curated job-listing website, for varying forms of largely in-person, part-time, and temporary jobs for companies. Because those jobs involved a high degree of control by the putative employer listed on the website, the control score may have picked up the features of the underlying arrangements rather than the control exercised by the job-listing service. The website also included a lot of ambiguous language that made it appear to be a temporary-employment agency, rather than a job-listing service. The higher control score may also reflect coder uncertainty and confusion about the company's services. Consequently, that company received a higher control score than other companies within the job-listing category.

[94] *See, e.g.*, ARIZ. REV. STAT. ANN. § 41–2097 (2015); GA. CODE ANN. § 40-5-39 (2014); MINN. STAT. ANN. § 473.386 (West 2015).

[95] *See, e.g.*, Yellow Taxi Co. v. NLRB, 721 F.2d 366, 374 (D.C. Cir. 1983).

[96] I coded the employment status of service providers for each company, first by reviewing each company's website for terminology referring to themselves as an employer, or referring to service providers as employee. Where the website did not

service providers as employees was given a litigation risk score of zero.[97] All other companies were given a litigation risk score equal to their control score.

D. Contract Analysis

Research assistants were instructed to download all of the publicly available "Terms of Service" contracts and other contracts presented to clients and service providers. They were unable to locate any contracts for a few of the companies, and could not locate any contracts for taxi and delivery companies.[98] Most of the companies had multiple contracts, all of which were included in the analysis.[99]

I then coded the contract provisions using QDA Miner Lite, a text-analysis software program that facilitates coding and textual analysis across multiple documents using keyword searches. The keywords were devised by reviewing some of the contracts in the sample, and from form contracts obtained through a Google search.[100] Additional keywords were added based on the review of the initial results.

Based on the keyword searches, I identified 13 types of contract provisions that might serve to mitigate independent contractor misclassification risk.[101] Table 1 in the Appendix lists these different types of provisions and an example of each. Some of the provisions refer specifically to independent contractor/employee status (e.g., "Drivers are not Sidecar employees but independent workers."). Some attempt to mitigate liabilities and damages that typically accompany a misclassification determination (e.g., "You specifically acknowledge and agree to the following: . . . you are not eligible to recover worker's compensation benefits."). Others describe the conditions of the arrangement in a way that would be more consistent with contractor status (e.g., "MobileWorkers shall be responsible for providing all necessary tools or equipment").

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reveal their employment status, I reviewed the company's contract for language referring to service providers as employees.

[97] For example, a temp agency that concedes the status of its service providers as employees will not face litigation or administrative claims alleging they misclassified their independent contractors as employees. Their risk of litigation over misclassification is zero, even though their control score might be high.

[98] For that reason, the regressions involving contract provisions have a smaller number of observations than the number of companies in the sample (30 vs. 38).

[99] Fifty-four contracts were analyzed. Privacy policies were not included in the analysis.

[100] Initial keywords included variations of "employ," "contractor," "waive," "indemnif" (for indemnify and indemnification), "at-will," "consult," "tax," "benefits," and "subcontract."

[101] I use the term "might" broadly, to include provisions that may not actually mitigate any risk—a court might choose to disregard them—but that seemingly bear upon the amount of control exercised by the putative employer. *See supra* note 23.

V. RESULTS

A. Distribution of Control Scores

Figure 3 contains histograms illustrating the distribution of control scores by business model for taxi and delivery companies, property-based sharing services, and property sharing companies. The gray/red bars refer to companies that treat service providers as independent contractors; the black bars refer to companies that treat them as employees.[102]

Taxi and delivery companies scored between 3.5 and 5.5, with an average control score of 4.3. UPS had the highest score of these companies, which is consistent with their practice of classifying drivers as employees.[103] Property sharing companies had the lowest average control score (1.8). All but one had a control score between 1.0 and 2.0.[104]

Property-based service companies had an average control score of 4.1. The three companies with the highest control scores were ride-sharing companies, with control scores of 3.5 or higher. The remaining property-based service company was a dog-boarding service, which is similar in many respects to a property-only sharing company. That company received a score of 1.5, comparable to the scores for property-sharing companies.

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[102] Companies that treated their service providers as employees and also helped clients hire employees were nevertheless coded as employees of the company. For example, many of the temp agencies helped clients hire employees.

[103] Where a company classifies its service providers as employees, the employer is free to exercise additional control over those service providers without an attendant increase in their litigation risk. Indeed, exercising greater control over employees would likely reduce their litigation risk in other areas. For example, an alcohol and drug policy might reduce the risk of traffic accidents and accompanying litigation. Exercising control also has other business-related benefits—the company might improve productivity where it dictates driver routes. For that reason, one would expect UPS to have the highest rating on the control test.

[104] Fon, a wireless-sharing company, received the highest score: 3.25. This score reflects the error inherent in a mechanical application of the control test. Although this particular service involves no labor beyond setting up the equipment, it received higher scores on the control test because the company provides the equipment and dictates the price of sharing (free). Even with this "false positive" result, all of the property-sharing companies received a lower score than taxi and delivery companies.

Figure 3. Distribution of Control Scores for Property-Based Service Companies and Comparators

Figure 3 suggests that ride-sharing services exercise a similar level of control over their service providers as taxi and delivery companies, at least based on observable facts from their websites. While this result suggests a higher risk of being sued, it does not necessarily mean that ride-sharing companies have in fact misclassified their service providers. For example, Yellow Taxi received a control score of 3.75 based on the facts set forth in a D.C. Circuit case.[105] In that case, the court ultimately determined that the taxi drivers were properly classified as independent contractors.

Figure 4 compares the control score distribution for service sharing companies to temp agencies and listing services. Like Figure 3, the graphs are color-coded for independent contractor and employee treatment by the company. Figure 4 also included a third category, companies that treat their service providers as independent contractors but help connect prospective employers with prospective employees (designated in light gray/green as "client option to hire").

Listing services scored between 1.5 and 3.0, with an average score of 1.9. All of the listing services treated users of the site as independent contractors. Two of them help to connect prospective employers with prospective employees ("client option to hire"). Three out of four listing services received scores between 1.5 and 2.0. The fourth, FlexJobs, received a score of 3.0.[106] All of the companies in the listing services category received lower control scores than those in the temp agency category.

For service sharing companies, there is considerable variation in scores. Only three of the fourteen companies scored within the same range as temp agencies. The service-sharing company with the highest control score—Cloud Factory—hires its service providers as employees. The other two service sharing companies with relatively high control scores make use of independent contractors.

The remaining 11 service sharing companies are clustered near the low end of the scale, between 1.0 and 3.0. Their control scores more closely resemble listing companies than temp agencies.

[105] For an explanation of the methodology involved in coding the facts from the D.C. Circuit case, see *supra* note 80.

[106] As previously discussed, this score appears to misattribute control by the client for control by the company. *See supra* note 93.

Figure 4. Distribution of Control Scores for Service_Sharing Companies and Comparators

Temp agencies scored between 3.5 and 6.0, with an average score of 4.7. Available information suggested that they classified all their service providers as employees.

There are multiple ways to interpret the bimodal distribution for service sharing companies. It is possible that the control score accurately sorts higher-control companies and lower-control companies. Under this interpretation, service sharing companies vary widely in the level of control they exercise over their service providers, wherein some face a higher misclassification risk than others. Those scoring on the low end of the scale, much like listing companies, do little more than facilitate transactions between customers and service providers. Those higher on the scale exercise similar levels of control as temp agencies.

Alternatively, the cluster of service sharing companies on the low end of the scale may reflect a lack of information about the relationship between the company and its service providers. As previously discussed, whenever either of the coders indicated that they couldn't answer a question about one of the control factors, that factor received a score of zero. That presumption biased scores towards zero for companies that provided limited information on their websites. This would produce a "false negative," whereby some service sharing companies might have received higher scores had more information been available.

B. Contract Analysis

Next, I examine whether the presence or absence of certain contract provisions can predict a company's litigation risk score.[107] I hypothesize that a company's attorneys will include certain contract provisions where they perceive a potential litigation risk. I also hypothesize that attorneys will include more such provisions when they perceive a greater risk.

Table 1 of the Appendix lists thirteen types of contract provisions that may have been intended to mitigate independent contractor misclassification risk ("misclassification provisions"), along with the number of companies whose contracts contained such a provision. The most common type of risk-mitigation provision consisted of defining the company's business as a mere intermediary or platform for consumers to connect. Other common misclassification-related provisions include language affirming the service provider's status as an independent contractor; language denying an employment relationship; and confirmation of the service provider's obligation to provide his own insurance.

Figure 5 illustrates the average number of misclassification provisions, and average litigation risk score by business type.[108] Figure 5 suggests a positive relationship between litigation risk scores and misclassifi-

[107] See *supra* Part IV(C)(2) for a description of how the litigation risk score was calculated.

[108] Taxi and delivery companies are not listed in Figure 5 because the research assistants were unable to locate any contracts for those companies.

cation provisions. Temp agencies have the fewest misclassification provisions and the lowest average litigation risk score (zero) because they directly employ their service providers. Listing services and property-sharing companies have relatively few misclassification provisions, and low litigation risk scores. Service sharing companies have a much higher number of misclassification provisions than their litigation risk score would suggest. Property-based sharing services have the most misclassification provisions, and the highest litigation risk score.

Figure 5. Average Misclassification-Related Provisions and Estimated Litigation Risk, by Business Type

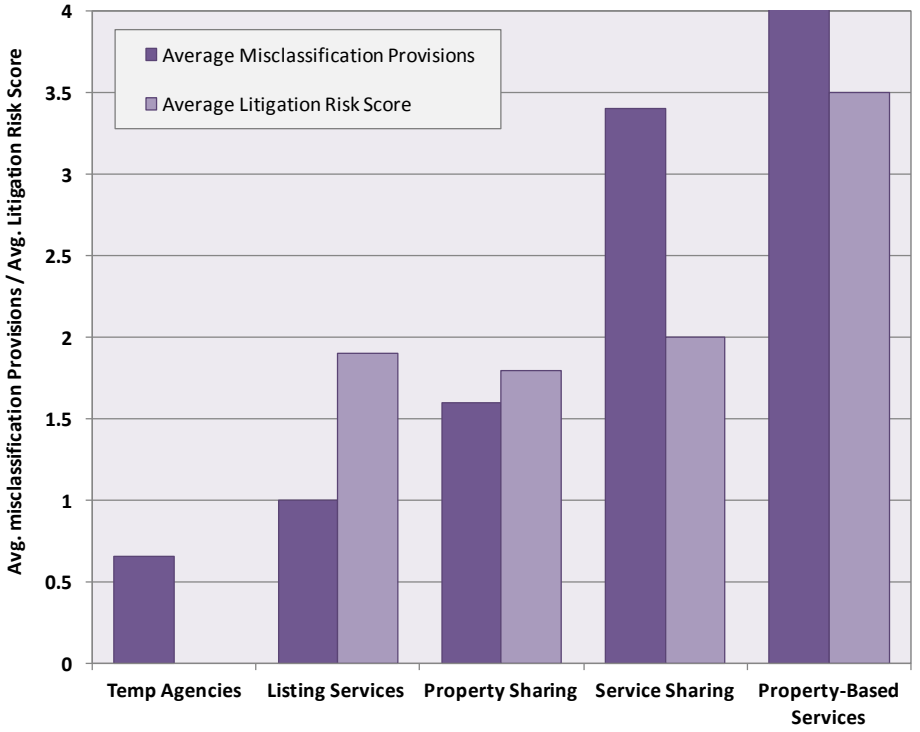


Table 2 summarizes a series of linear regressions using the contract provisions most closely correlated to the litigation risk score. Linear regression presents several limitations in this study. Because the sample size is small, each data point is disproportionately important. Linear regression also assumes a normal distribution, and the distribution here is right-skewed.[109]

[109] I tested some transformations of the distribution to address the positive skewedness, including a log-log transformation. The log-log transformation produced a similar R-squared value and did not produce more accurate predicted values than those reported in Table 2.

The independent variables in the table include:

- *Affirms contractor status*, a dummy variable equal to 1 where one (or more) of the company's contracts contains a provision confirming that the service provider is an independent contractor.
- *Denies employee status*, a dummy variable equal to 1 where one (or more) of the company's contracts contains a provision denying the employment status of an employee.
- *Sum misclassification provisions*, the total number of misclassification provisions in the company's contracts (summarized in the Appendix, Table 1).
- *Misclassification clauses per five pages*, the *sum misclassification provisions* variable multiplied by the word count of the company's contracts, and divided by 2,500.[110]

Table 2. Relationship between Contract Provisions and Litigation Risk-Score

	(1)	(2)	(3)	(4)
Affirms contractor status	1.43*** (0.47)			
Denies employee status		1.40*** (0.45)		
Sum misclassification provisions			0.36*** (0.09)	
Misclassification provisions per 5 pages				0.85*** (0.24)
Constant	1.54*** (0.27)	1.46*** (0.28)	1.05*** (0.30)	1.24*** (0.31)
Observations	30	30	30	30
Adjusted R-squared	0.23	0.23	0.37	0.27

*** p< 0.01, ** p <0.05, * p< 0.1

All of the independent variables in the regressions produced statistically significant results at the 0.05 level or better. The presence of a provision affirming contractor status was associated with a higher litigation risk score (Model 1). Likewise, the presence of a provision denying employee status was also associated with a higher litigation risk score (Model 2).

[110] Twenty-five hundred is the equivalent of 5 pages of contract terms, on the assumption that the average page comprises 500 words.

Models 1 and 2 each produced adjusted R-squared values of 0.23. The sum misclassification provisions variable was also positively associated with the litigation risk score (Model 3), with an adjusted R-squared value of 0.37. Controlling for the contract length (Model 4) did not improve the model, producing a lower adjusted R-squared value. The statistically significant results and relatively high R-squared value suggests that this approach may be relatively robust.

I tested several other individual contract provisions listed in Table 1 of the Appendix which did not produce statistically significant results. In particular, a substantial proportion of sharing companies (12 of 25) included provisions defining the company's business as a mere "platform" or "intermediary" for consumers to connect. Only one of the non-sharing companies (LinkedIn) defined its business that way, although contracts were missing for several of the non-sharing companies. These platform or intermediary provisions had no measurable relationship—positive or negative—to a company's litigation risk score. Likewise, other individual provisions in Table 1 of the Appendix, such as provisions denying control over performance of the contract or tax indemnification provisions, did not produce significant results on their own.[111]

Lastly, I also tested whether a "non-circumvention" provision predicted the litigation risk score. Non-circumvention provisions prohibit service providers from directly contacting or contracting with the client outside of the site. At least eight of the companies in the sample had such a provision.[112] However, the presence or absence of such a provision was not predictive of litigation risk.

The absence of a statistical relationship between these other provisions and misclassification risk suggests that those provisions serve other functions. A sharing company might have other reasons for defining itself as a mere intermediary that has little to do with independent contractor misclassification. For example, a property-sharing company might want to include such a term to avoid tort liability or certain industry-specific taxes. The "mere intermediary" definition may also be accurate

[111] These variables were, however, included in the *sum misclassification provisions* variable, which produced statistically significant results.

[112] For example, 99Designs includes the following non-circumvention provision in its contract: "You agree not to circumvent the payment methods offered by the Site. By way of illustration and not in limitation of the foregoing, you must not: (a) Submit proposals or solicit parties identified through the Site to contact, hire, manage, or pay outside the Site. (b) Accept proposals or solicit parties identified through the Site to contact, deliver services, invoice, or receive payment outside the Site. (c) Cancel any Design Contest for the purpose of contracting separately with a Designer who Customer meets through the Site. . . . You agree to notify 99designs immediately if another person improperly contacts you or suggests making or receiving payments outside of the Site."

in some cases, or used strategically in others, making it an unreliable marker of liability.

Likewise, a provision where the company denies control over the parties might be intended to avoid tort liability or liability to the client for the service provider's failure to perform. Where a provision is used for a purpose other than to mitigate misclassification risk, its presence or absence would not meaningfully predict exposure to that particular risk. By contrast, a provision denying employee status or affirming independent contractor status would likely be inserted for the sole or primary purpose of mitigating misclassification liability.

C. Predictive Modeling

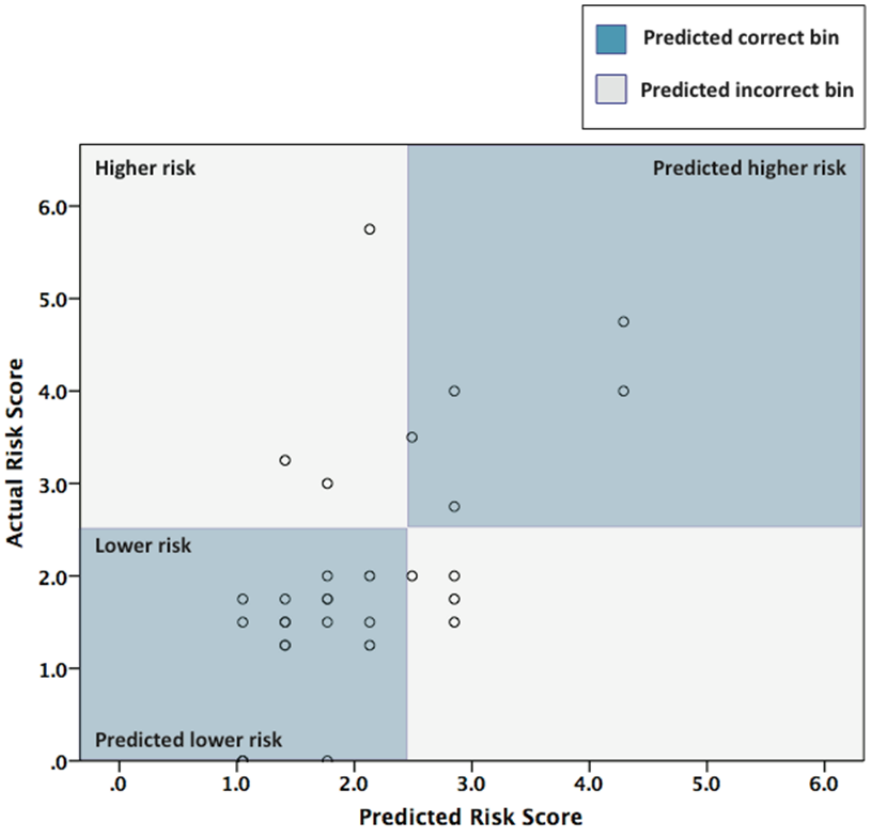
Next, I measured how well the *sum misclassification provisions* predicted litigation risk. I used the regression equation from Model 3 (Table 2) to generate predicted litigation risk scores and compared the predicted scores to the actual risk scores. Table 3, below, illustrates the difference between actual and predicted scores. The model predicted the score within 1 point on the risk scale for 63% of companies, and within 1.5 points on the scale for 87% of companies.

Table 3. Residuals for Predicted Values Based on Model 3 (predictor variable *sum misclassification provisions*)

Residuals (litigation risk score units)	Frequency	Cumulative Percentage
+/- 0.5	14	47%
+/- 0.51 – 1.0	5	63%
+/- 1.01 – 1.5	7	87%
+/- 1.51 – 2.0	2	93%
> 2.01	2	100%

Figure 6, below, illustrates the predictive value of Model 3. It is a scatterplot comparing predicted risk values to actual risk scores. It tests how well the prediction model sorts values into "higher risk" or "lower risk" categories. I set lower risk as any value equal to or below 2.5, on the hypothesis that almost all of the listing companies and property sharing companies scored 2.5 or below. The blue/dark area of the graph represents the segments of data that the model predicted correctly, and the grey/light represents those portions that the model predicted incorrectly.

Figure 6. Predicted Values Based on Model 3
(predictor variable: *sum misclassification provisions*)



The model placed the data in the "correct" bin a little over 75% of the time. It incorrectly placed three companies in the lower risk bin ("false negative"),[113] and incorrectly placed four companies in the higher risk bin ("false positive"). The directional effect of the predicted values was generally accurate—higher predicted values tended to correspond with higher risk values. Choosing a different juncture in the graph in which to sort the data would have produced similar rates of accuracy.

It is possible that the contract provisions represent a more sensitive measure of litigation risk than the control score. Attorney work product may reflect a more nuanced assessment of risk based on case law. Lawyers are also likely to have additional information about their client's litiga-

[113] Some of the error produced by the prediction model is also consistent with known limitations in the underlying data. Two of the companies for which the prediction model underestimated the "actual" risk scores were Fon and FlexJobs. As previously discussed, the litigation risk scores for those two companies were likely inflated. *See supra* notes 93 and 104.

tion risks, which is not disclosed on the company's website. Thus, some of the false positives and false negatives may reflect measurement error in the control score, rather than error in the regression model. For example, the regression model seemingly underestimated the litigation risk score for one of the listing companies (Flexjobs) and one of the property sharing companies (Fon). As previously discussed, measurement error in the control score likely overestimated the litigation risk for both companies. The regression model correctly predicted that both companies present a low litigation risk.

D. Testing the Model on Out-of-Sample Data

To further test the predictive value of the regression models, I applied the regression equations from Model 3 (Table 2) to the out-of-sample data.

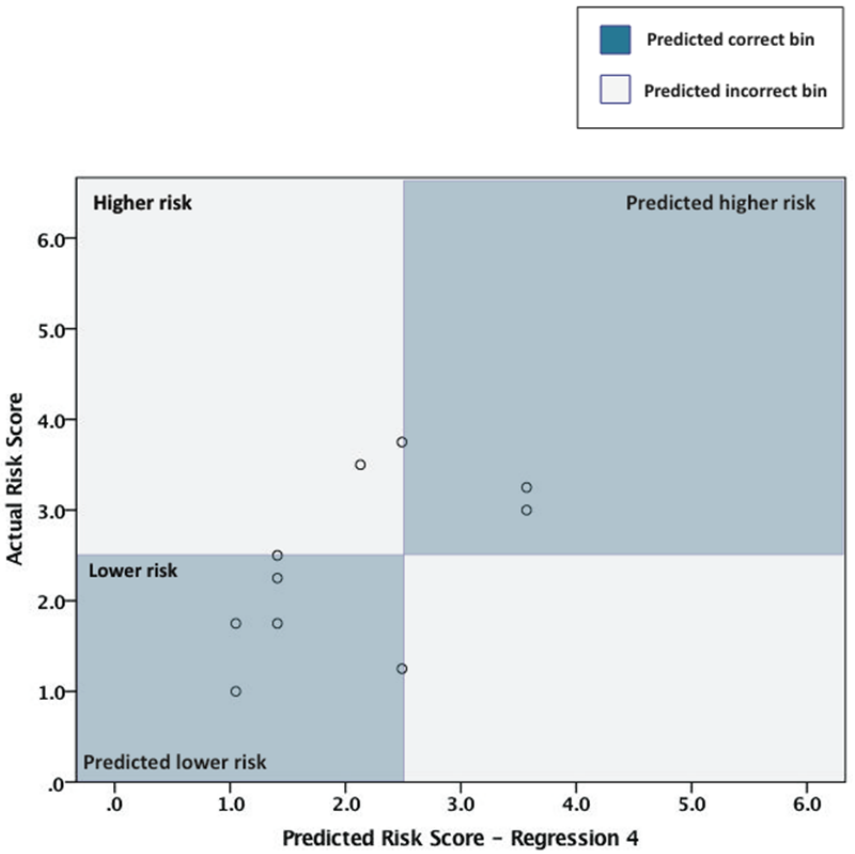
Table 4, below, lists the residuals from Model 3 applied to the out-of-sample data. The residuals are comparable to those for the in-sample data (Table 3). Model 3 predicted a somewhat smaller proportion of the out-of-sample results to within 0.5 points on the litigation risk score metric. However, it was more accurate overall, predicting all of the results within 1.5 points.

Table 4. Residuals for Predicted Values Based on Model 3 (predictor variable: *sum misclassification provisions*)

Residuals (litigation risk score units)	Frequency	Cumulative Percentage
+/- 0.5	3	30%
+/- 0.51 – 1.0	6	60%
+/- 1.01 – 1.5	10	100%
+/- 1.51 – 2.0	0	
> 2.01	0	

A scatterplot of the predicted out-of-sample values from Model 3 against the litigation risk score, shows a positive correlation between predicted and actual scores (Figure 7). Because the high and low risk bin ranges were generated using in-sample data, they do not cleanly demarcate the line between high and low risk for the out-of-sample data, with three data points straddling the high and low risk bin.

Figure 7. Predicted Values Based on Model 3 – Out-of-Sample
(predictor variable: *sum misclassification provisions*)



Numerically, Model 3 sorted 7 out of 10 of the data points into the correct bin, 2 into the incorrect bin, and 1 exactly on the dividing line. Results would have been similar had the high/low risk demarcation been at a risk score of 2 (7 correct, 3 incorrect); or at a risk score of 3 (7 correct, 2 incorrect, 1 on the dividing line). Overall, the out-of-sample results generally support the model produced by the in-sample analysis. Model 3 was about as accurate at predicting out-of-sample data as it was at predicting in-sample data.

VI. DISCUSSION

This study produces several insights into the sharing business that would not otherwise be available through a qualitative analysis of extant case law. First, the distribution of control scores for ride-sharing services

looks more like the distribution for taxi and delivery companies than property sharing companies. This tentatively suggests that ride sharing companies exercise a similar level of control over their drivers as taxi and delivery companies, notwithstanding their software-based platform. As previously noted, this result does not necessarily mean that drivers for ride-sharing companies are misclassified. Rather, it suggests a higher likelihood of disputes, consistent with the misclassification lawsuits already asserted against Uber and Lyft.

Second, the bimodal distribution of control scores for service sharing companies suggests that service sharing companies face widely varying risks. Media coverage of the sharing economy tends to assume that any adverse legal rulings against sharing companies will have a domino effect on the industry.[114] While that may be the case if fearful investors withdraw their funding following any adverse court rulings, results do not support the hypothesis that all, or substantially all, service sharing companies have misclassified their independent contractors.

Third, results also revealed that nearly half of sharing companies defined their business as a platform or intermediary in their form contracts. However, this definitional sleight-of-hand had no statistical relationship to the amount of control these companies exercised over their service providers. Courts have already intuited that a lawyer's carefully crafted business definitions may have little to no bearing on the actual business. In the Lyft class action, the company argued:

> [T]here is no need to decide how to classify the drivers, because they don't perform services for Lyft in the first place. . . . Lyft is an uninterested bystander of sorts, merely furnishing a platform that allows drivers and riders to connect, analogous perhaps to a company like eBay.[115]

The court found this claim so ludicrous that it implied that even Lyft was not persuaded by its own argument.[116] Likewise, when Uber argued that it was a technology company, the District Court responded:

> Uber is no more a "technology company" than Yellow Cab is a "technology company" because it uses CB radios to dispatch taxi cabs, John Deere is a "technology company" because it uses computers and robots to manufacture lawn mowers, or Domino Sugar is a "technology company" because it uses modern irrigation techniques to grow its sugar cane.[117]

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[114] *See* Kessler, *supra* note 44.

[115] Cotter v. Lyft, Inc., 60 F. Supp. 3d 1067, 1078 (N.D. Cal. 2015).

[116] The court characterized the argument as "tepidly assert[ed]." *Id.* After summarizing Lyft's argument, the court responded that it was "obviously wrong." *Id.*

[117] O'Connor v. Uber Tech., Inc., 82 F. Supp. 3d 1133, 1141 (N.D. Cal. 2015).

Fourth, results of the regression analysis and predictive modeling tentatively support the hypothesis that contracts can be reverse-engineered to guess a company's litigation risk. The presence of a relationship between a particular litigation risk and provisions intended to mitigate that risk is, in one sense, reassuring. Lawyers are paid to mitigate risk. If the content of their contracts were to have no observable relationship to underlying risk, that would raise more profound questions as to the value of legal services.

On the other hand, the idea that contracts can be reverse-engineered is also unsettling. A company's communications with its lawyers about litigation risk are closely guarded as attorney-client privilege.[118] An attorney's judgment as to a client's level of risk exposure is also protected as attorney work product.[119] When attorneys include contract provisions to mitigate legal risks, they don't assume that they are broadcasting their risk assessments. Nor do they expect that such information could be used as a sorting mechanism for differentiating between high-risk and low-risk companies.

Can or should government agencies use this form of reverse-engineering to screen companies for further investigation? Where sharing companies profit from massive quantities of consumer data,[120] a small reciprocal dose of predictive analytics seems inoffensive. Nevertheless, predictive modeling raises due process concerns, as several commentators have observed.[121] In particular, decisions about acceptable levels of predictive error "are rarely made public."[122] As these companies know well from their own extensive use of consumer data, companies may never learn whether predictive analytics are used against them.[123]

Federal and state agencies may soon be using predictive analytics to identify companies that misclassify independent contractors. Federal and state agencies already use predictive modeling to identify healthcare

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[118] MODEL RULES OF PROF'L CONDUCT r. 1.6 (AM. BAR ASS'N 2013).

[119] Hickman v. Taylor, 329 U.S. 495, 510 (1947).

[120] *See e.g.*, Sam Frizell, *What Is Uber Really Doing with Your Data?*, TIME (Nov. 19, 2014), http://time.com/3595025/uber-data/; Jason Tanz, *The Sharing Economy Needs to Start Sharing Its Data Too*, WIRED (May 5, 2014), http://www.wired.com/2014/05/sharing-economy-fico/.

[121] Danielle Keats Citron, *Technological Due Process*, 85 WASH. U. L. REV. 1249, 1254 (2008) ("Automation also impairs the rulemaking procedures that traditionally substituted for individualized consideration with procedural due process. Although programmers building automated systems may not intend to engage in rulemaking, they in fact do so. . . . The opacity of automated systems shields them from scrutiny. Citizens cannot see or debate these new rules. In turn, the transparency, accuracy, and political accountability of administrative rulemaking are lost."); Kate Crawford & Jason Schultz, *Big Data and Due Process: Toward a Framework to Redress Predictive Privacy Harms*, 55 B.C. L. REV. 93, 95 (2014).

[122] Tal Z. Zarsky, *Transparent Predictions*, 2013 U. ILL. L. REV. 1503, 1519.

[123] *See* Crawford & Schultz, *supra* note 121, at 95.

fraud,[124] quality gaps in nursing home care,[125] and patients that would benefit from additional social services.[126] Government agencies also use predictive analytics to detect tax evasion, student-loan fraud, and waste in government travel expenses; track adverse medical events; identify crime patterns; and predict mines likely to be abandoned.[127] More than 10 years ago, a General Accounting Office study identified 52 federal agencies that used data mining for varying purposes.[128]

Predictive modeling has also been used in the employment law context. Illinois passed legislation in 2011 requiring its worker's compensation division to use "predictive modeling, data mining, social network analysis, and scoring algorithms" to detect fraud and abuse.[129] As of 2004, the Department of Labor used data mining to monitor compliance with ERISA, identify safety concerns in mining operations, and identify entities that failed to respond to Bureau of Labor Statistic surveys.[130]

State and federal agencies responsible for enforcing misclassification of independent contractors certainly could use some form of data mining or predictive modeling, assuming they aren't already doing so. Federal and state tax agencies periodically enforce contractor misclassification,[131] and the IRS has been using data mining for other purposes for years.[132] The Department of Labor's Wage and Hour Division has an information sharing agreement with the IRS, through which the Department of Labor shares investigation results with the IRS for further investigation and en-

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[124] *See, e.g.*, 42 U.S.C. § 1320a-7m (2012) (predictive modeling to identify health care fraud); WASH. REV. CODE § 74.64.020 (2014) (same); 2014 Or. Laws 36 (same). In 2012, the White House announced that it had been "using 'predictive modeling' technology—similar to technology used by credit card companies to identify and fight [Medicare] fraud nationwide," from which they had "stopped, prevented or identified $20 million" in fraud, and produced 2,500 leads. *See* Marilyn Tavenner, *Fighting Improper Payments and Fraud: Protecting Taxpayer Dollars*, CMS BLOG (Feb. 24, 2012), http://blog.cms.gov/2012/02/24/fighting-improper-payments-and-fraud-protecting-taxpayer-dollars/.

[125] R.I. GEN. LAWS § 23-17-12.10 (2015) (predictive modeling to identify high and low performance in nursing care).

[126] WASH. REV. CODE § 41.05.023 (2014).

[127] *See* U.S. GEN. ACCOUNTING OFF., GAO-04-548, DATA MINING: FEDERAL EFFORTS COVER A WIDE RANGE OF USES 2 (2004), http://www.gao.gov/new.items/d04548.pdf; *see also* Laura Myers, Allen Parrish & Alexis Williams, *Big Data and the Fourth Amendment: Reducing Overreliance on the Objectivity of Predictive Policing*, 8 FED. CTS. L. REV. 231, 232 (2015); Zarsky, *supra* note 122, at 1510.

[128] *See* U.S. GEN. ACCOUNTING OFF., *supra* note 127, at 2.

[129] 820 ILL. COMP. STAT. 305/25.5 (e-5) (2014).

[130] U.S. GEN. ACCOUNTING OFF., *supra* note 127, at 49.

[131] *See* Memorandum of Understanding Between the Internal Revenue Serv. and the U.S. Dep't of Labor, http://www.dol.gov/whd/workers/MOU/irs.pdf (describing IRS role in investigating misclassification).

[132] *See* Zarsky, *supra* note 122, at 1510; *see also* U.S. GEN. ACCOUNTING OFF., *supra* note 127, at 52.

forcement.[133] The IRS also shares "aggregate data relating to trends in misclassification" with the Department of Labor.[134]

The predictive modeling in this study represents a rough sorting mechanism, and its usefulness depends on access to the applicable contracts. Government agencies often use multiple sources of data for their analytics,[135] such that a model of this sort could be usefully combined with other data sets and models for improved accuracy. For example, an IBM white paper described a data-mining process used by a state tax agency, which combined sales-tax filings, other tax filings, employment records, audit history, and other business information.[136] As federal and state employment agencies make increasingly sophisticated use of the data already available to them, service provider contracts might usefully be added to the overall model.

Once government agencies start mining contracts for glimmers of liability, lawyers may reconsider the value of such provisions. As previously noted, such contract terms are already of limited legal value—courts largely ignore contract designations and focus on the underlying realities of the relationship.[137] However, where there is no perceived cost to inserting such provisions beyond the lawyer's time/fees, lawyers can, and apparently do, fill the contracts with provisions intended to mitigate a perceived risk.

These provisions are not cost-free from a public policy perspective. The primary audience for provisions denying employee status and affirming contractor status is not courts, but the service providers themselves. Employees misclassified as independent contractors may reasonably assume that they have made a binding agreement to serve as independent contractors and have no legal remedy. Likewise, they may be deterred from suing by a provision requiring them to indemnify the company for any tax liabilities associated with misclassification, even though a court may ultimately rule such a provision unenforceable.

The results of this study suggest that such provisions are not mere legalese, unmoored to the facts of the case. If that were true, there would

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[133] Memorandum of Understanding Between the Internal Revenue Serv. and the U.S. Dep't of Labor, *supra* note 131.

[134] *Id.* at 3.

[135] Daniele Micci-Barreca & Satheesh Ramachandran, *Improving Tax Administration with Data Mining*, IBM SOFTWARE: BUS. ANALYTICS (May 2010), http://eliteanalytics.com/wp-content/uploads/2015/04/Elite-White-Paper1.pdf; *see also* Martin Finucane, *State Tax Agencies Ferret Out Scofflaws with Database Tech*, USA TODAY (Apr. 5, 2004), http://usatoday30.usatoday.com/tech/news/internetprivacy/2004-04-05-state-tax-scofflaws_x.htm (describing how tax agencies use motor vehicle records to identify individuals that drive luxury cars but only declare a small amount of income).

[136] Micci-Barreca & Ramachandran, *supra* note 135, at 7.

[137] *See supra* notes 22–23 and accompanying text.

be no statistical relationship between underlying risk and the presence of such provisions. Instead, these provisions have a deceptive quality—lawyers tend to include provisions reinforcing a service provider's status as a contractor where the underlying realities of the relationship suggest the opposite. Companies unconcerned with misclassification risk tend to include few if any provisions reinforcing the contractor status of their service providers.

Imposing additional costs upon the use of such provisions, through greater regulatory scrutiny for potential misclassification, may ultimately discourage their use. Doing so would help detect the underlying harm, while also reducing the prevalence of misleading contract provisions that deter affected employees from availing themselves of legal remedies.

VII. CONCLUSION

This study examines whether the presence or absence of certain contracts terms reveals underlying litigation risks. While results support the proof-of-concept, the study presents several opportunities for further investigation and refinement of the model.

APPENDIX

Table 1. Examples of Contract Provisions Intended to Mitigate Misclassification Risk

Description	Example of Contract Language	Frequency
Refers to business as a platform or intermediary	The Lyft Platform provides a marketplace where persons who seek transportation to certain destinations ('Riders') can be matched with persons driving to or through those destinations ('Drivers').	13
Denies employee status	Drivers are not sidecar employees, but independent workers who voluntarily use our mobile platform to be matched with passengers and obtain payment cashlessly through the App.	12
Affirms independent contractor status	Each User acknowledges and agrees that the relationship between Buyers and Sellers is that of an independent contractor.	10
Provide your own insurance	As part of your participation in the marketplace, you must maintain your own insurance policy and meet any minimum insurance levels required by law.	10
Denies control	The Company does not have control over the quality, timing, legality, failure to provide services, or any other aspect whatsoever of the services provided by the Agents.	9
Not a party to the contract	Elance is not a party to the dealings between Client and Freelancer, including posts, proposals, screening selection contracting, provision of Freelancer Services, and payment for an Engagement.	7
Indemnification for tax risks	You understand and agree that if DogVacay is found to be liable for any tax or withholding tax in connection with your use of the Site, then you will immediately reimburse and pay to DogVacay an equivalent amount, including any interest or penalties thereon.	6
Denies benefits	You specifically acknowledge and agree to the following: . . . you will not be entitled to any of the benefits that a Requester or Amazon Mechanical Turk may make available to its employees, such as vacation pay, sick leave, insurance programs, including group health insurance or retirement benefits	4
Own tools and equipment	MobileWorkers shall be responsible for providing all necessary tools or equipment that they need to perform services on behalf of MobileWorks' clients.	3
You set your own schedule	As a freelancer, you're responsible for managing your projects, your schedule, and	2

	your client relationships.	
Denies unemployment insurance	As such, DogVacay will not be liable for any tax or withholding, including but not limited to unemployment insurance	2
Permits subcontracting	Vendor is responsible for its operation and any subcontracted operations.	2
Denies workers' compensation	You specifically acknowledge and agree to the following: . . . you are not eligible to recover worker's compensation benefits in the event of injury	2