

# Raising Barriers, Not Quality

Occupational Licensing Fails to Improve Services

By Kyle Sweetland and  
Dick M. Carpenter II, Ph.D.

Revised October 2022

 INSTITUTE  
for JUSTICE



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**Revised October 2022**

An earlier version of this report was released in September 2022.

This revision uses an improved technique for examining cross-border differences and corrects underlying calculations.

The original report is on file with the Institute for Justice.

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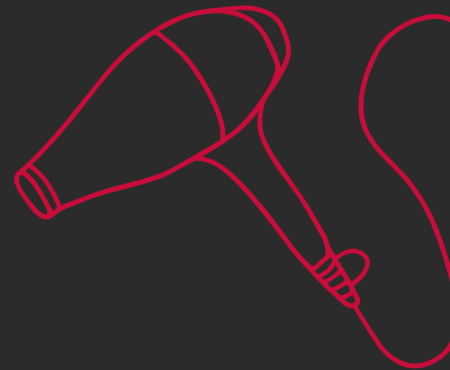
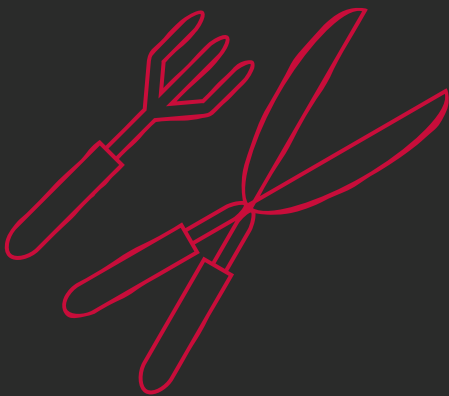
## Executive Summary

About a quarter of the American workforce must get a permission slip from the government—known as an occupational license—to legally work in their chosen occupations. Getting a license can be costly and time-consuming, requiring fees, exams and many hours—sometimes amounting to several years—of education and experience. Steep licensing requirements serve as a barrier to occupational entry, imposing costs on workers, consumers and the wider economy. But proponents claim they improve service quality by screening out workers likely to provide inferior service.

This study tests proponents' claims by comparing consumer Yelp ratings for

service providers in neighboring states with different regulatory regimes. For four types of service providers—interior designers, locksmiths, manicurists and tree trimmers—we compare quality in licensed states with that in unlicensed states. For two other types of service providers—barbers and cosmetologists, which are both universally licensed—we compare quality in states with more and less burdensome licenses. In all, across the six occupations, we look at nine sets of state pairings.

We limit our analyses to providers located within a certain narrow distance from either side of state borders, which helps ensure that the primary difference between providers is the regulatory



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regime under which they operate. This creates an apples-to-apples comparison.

Our results run counter to the theory that licensing improves service quality. Licensing, and progressively stricter forms of it, is not associated with greater service quality across any of our nine comparisons. In fact, in seven of the nine comparisons, we find no statistically significant difference in quality at all. In the other two—our comparisons of cosmetologists in New York (lower licensing burdens) to those in Connecticut and New Jersey (higher licensing burdens)—quality is higher in less burdensome New York and statistically significantly so.

These results add to mounting research suggesting the benefits of licensing are overstated and licensing may even be counterproductive. In light of this research and an even larger body

of evidence showing licensing's negative effects, policymakers should be highly skeptical of occupational licensing. To ensure licenses are not needlessly shutting workers out of occupations, policymakers should carefully consider whether proposed and existing licenses are necessary to protect the public and reject or repeal those that are not. They should also ensure requirements for any licenses deemed essential are only as burdensome as necessary to protect the public. To do otherwise is only to raise barriers, not quality.





## Introduction

Until recently, Connecticut held a unique, although little-known, distinction among the 50 states: For nearly 40 years, it allowed manicurists—also known as nail technicians—to work without an occupational license.

For many years, Connecticut *did* require manicurists to obtain a government permission slip to work.<sup>1</sup> However, the state repealed its manicurist license in 1980 after a government review concluded the license was unnecessary.<sup>2</sup> Then things changed again in 2019 when the legislature voted to relicense the occupation.<sup>3</sup>

Advocates argued nail tech licensing was necessary to protect workers and consumers and ensure safe, quality service.<sup>4</sup> Opponents, meanwhile, argued the costs of licensing would outweigh any benefits.<sup>5</sup>

One opponent of relicensing was Tara Swagger, who owns a salon in Putnam and has two decades of industry experience.<sup>6</sup> In public testimony, Swagger argued the cost of licensing would add a significant burden to her and other salon owners' operations.<sup>7</sup>

Swagger, who estimates she has served more than a thousand clients over her career, also pointed out that licensing is no guarantee of customer safety or satisfaction: "Licensed trades have plenty of lousy technicians and improper work resulting in bad experiences. Many people have stories for just about any industry and beauty is no exception."<sup>8</sup>

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She said that in her experience, bad experiences at nail salons are an issue “not . . . of untrained or unlicensed technicians but [of] simple mistakes or unforeseen reactions or allergies that are part of the risk in this business.”<sup>9</sup>

Swagger also noted that the state already had mechanisms in place to protect customers. “The health department is already in charge of regulating these businesses for the purpose of public health.”<sup>10</sup> She pointed out that the state’s salon inspection format already checked for proper sanitation.<sup>11</sup>

The debate over nail tech licensing in Connecticut is, in many ways, representative of the ongoing national debate over occupational licensing, which now affects about 1 in 4 American workers compared to 1 in 20 in the 1950s.<sup>12</sup>

On one side of the debate are those who argue licensing protects the public and keeps service quality high. It does this, the argument goes, by shutting out service providers who have not met certain minimum standards and who are therefore likely to provide low-quality service.<sup>13</sup> On the other side are those who argue licensing comes at too high a cost—to workers, to consumers, and to society and the economy at large.<sup>14</sup> Critics say that licensing burdens often appear arbitrary and that other, less onerous, regulations—and often just ordinary market competition—can protect the public and keep quality high without licensing’s costs.<sup>15</sup>

But which side is right? Does licensing, in fact, promote safe, quality service?

We are not, of course, the first to ask this question, but our research is unique in that we examine occupations that others have not. Specifically, we explore differences in service quality—as measured by average consumer Yelp ratings of businesses—for six occupations. For four of the occupations—interior designer, locksmith, manicurist and tree trimmer—we compare quality in an unlicensed state with that in a bordering licensed one. For example, we compare manicurists in Connecticut before they were licensed with those in neighboring states that have long required licenses. For the other two occupations—barber and cosmetologist—we compare quality in a licensed state with that in a bordering one with stricter licensing requirements. If licensing produces better, safer service in these occupations, we would expect to see higher Yelp ratings in licensed states or in states with more stringent licensing requirements.

Our results cast doubt on the notion that licensing increases quality. Licensing is not associated with greater service quality in any of the occupations or states we studied. In all but two of our comparisons, state licensing—and progressively stricter forms of it—fails to produce statistically significant differences in quality. And in the two comparisons where we do see a significant difference, the state with lighter licensing burdens has *higher* consumer ratings than the neighboring states with steeper burdens. These results suggest policymakers and the public should be skeptical of the argument that licensing is necessary to ensure service quality.

## Prior Research Findings: A Mixed Picture

Studies examining the relationship between licensing and service quality date back to the 1970s and cover occupations including physicians,<sup>16</sup> nurse practitioners,<sup>17</sup> pilots,<sup>18</sup> florists,<sup>19</sup> tour guides,<sup>20</sup> massage therapists<sup>21</sup> and many others. The results have been mixed, but most studies have found licensing to share either no relationship or a mixed relationship with service quality. Appendix C lists relevant studies since the 1970s and shows what relationship, if any, they found between licensing and quality.

Of those studies, the most relevant to the occupations we analyzed are four examining general services (florists and tour guides), home improvement services, and personal care services (barbers, cosmetologists, manicurists and massage therapists). These studies provide some indication of what we might expect to find in our own analyses.

Three of the four studies suggest licensing has no effect on service quality. The first is another Institute for Justice study. It used a field experiment to examine whether Louisiana's florist license resulted in better floral arrangements.<sup>22</sup> For the experiment, IJ procured arrangements from licensed Louisiana florists and unlicensed Texas florists. We then asked judges—randomly selected florists from both states who possessed

no knowledge of the study's purpose—to score them. The results showed no difference in quality between the states.

The second study, also from IJ, used a measure of quality similar to the one we use here—consumer reviews.<sup>23</sup> Exploiting a change in a licensing law, the research compared Tripadvisor reviews of tour guides in the District of Columbia before and after the city repealed its mandatory licensing exam. The results showed no significant difference in quality after the exam requirement ended.

The third study used consumer hiring decisions to examine licensing and perceived service quality in home improvement occupations (e.g., painters and interior designers).<sup>24</sup> Using data from an online platform that allows consumers to find home improvement service providers, the study measured quality based on whether a consumer hired a tradesperson for a job. The platform does not require service providers to provide proof of licensure, but consumers can use the platform to verify licensure. Exploiting this verification tool, the study compared (1) the number of consumers who hired a provider after verifying their license to (2) the number of consumers who hired a provider without verifying their license. If licensure really mattered to con-



sumers, it would be reasonable to expect more consumers to hire service providers after verifying their license. Yet this was not the case—licensure appeared to play no significant role in consumers' hiring decisions. The study did, however, find that positive reviews had a significant influence on consumers' decisions. The researchers conducted an independent survey of recent consumers of home improvement services, which confirmed both findings. When the researchers asked consumers to list up to three reasons why they selected a particular service provider, 13% mentioned reviews, while less than 1% mentioned licensing.

Like the first three studies, the fourth found licensing did not increase quality overall.<sup>25</sup> But unlike those studies, it found licensing actually had a negative effect on quality. The study used the same measure of quality as our analyses here—consumer Yelp ratings—and examined whether more stringent licensing requirements (fees, minimum education and experience, minimum age, minimum grade, and exams) produced greater service quality for barbers, cosmetologists, manicurists and massage thera-

pists, in a combined model. The effects of the burdens of licensing requirements for each occupation were considered, along with whether licensing or an individual requirement type was required at all. Requiring education and experience, exams, or any licensing at all reduced quality as measured by ratings. Requiring any fees or minimum grade was weakly negative on quality, while requiring a minimum age was not significant. Overall, requiring licensing reduced Yelp ratings.<sup>26</sup>

Thus, among occupations similar to those we studied, licensing and service quality more often appear unrelated, whether quality is measured by practitioners, consumer reviews or consumer hiring decisions. To the extent there is a relationship, licensing appears to produce lower service quality. These earlier studies suggest that, in our analyses of states with and without licensing or with more stringent and less stringent licensing requirements, we might find no difference in Yelp ratings across states and perhaps even lower quality in states with stricter requirements. Such results would contradict licensing proponents' claims.



## Methods

To study licensing’s impact on quality, we used regressions to compare average consumer Yelp ratings for individual businesses in bordering states with different licensing schemes. More specifically, for each set of comparison states, we looked at Yelp ratings for businesses located within a certain narrow distance, or “bandwidth,” from either side of the border.<sup>27</sup>

Because such businesses are geographically close, they should be similar, with the primary difference being that they operate under different regulatory regimes.

We used businesses’ Yelp ratings in our regressions because they represent a widely known and used measure of service quality. Because Yelp’s platform relies on consumer input, it harnesses the power of crowdsourcing. In addition, the five-point rating scale is an easy-to-understand measure of quality, and its quantitative nature

makes it ideal for analyses like ours. Finally, past studies have shown Yelp ratings to be a valid measure of quality.<sup>28</sup>

We chose occupations and states with widely divergent regulatory regimes to have the best chance of uncovering the relationship—if any—between licensing and quality. We compared ratings across nine sets of state pairings and six occupations. The specific occupations and states we studied, as well as the licensing requirements for each state, are presented in Table 1.<sup>29</sup> The ratings span the period from October 2004 through October 2020 for locksmiths and from October 2004 through June/July 2019 for the other five occupations, although not all businesses may have had ratings in every year of those time spans. (For more details on our methodology, including the number of businesses in each comparison, see Appendix A.)



**Table 1: Licensing Requirements for States Observed in Comparisons**

Occupation/State	Fees	Estimated Days Lost to Education and Experience	Exams	Min Grade	Min Age
<b>Barber</b>					
NJ (less burdensome)	\$80	210	2	12	17
PA (more burdensome)	\$150	292	2	8	16
<b>Cosmetologist</b>					
NY (less burdensome)	\$70	233	2	0	17
CT (more burdensome)	\$100	350	1	9	0
NJ (more burdensome)	\$119	280	2	12	17
<b>Interior Designer</b>					
CA (unlicensed)*	--	--	--	--	--
NV (licensed)	\$1,215	2,190	1	0	0
<b>Locksmith</b>					
PA (unlicensed)	--	--	--	--	--
NJ (licensed)	\$217	732	1	12	18
<b>Manicurist</b>					
CT (unlicensed)†	--	--	--	--	--
MA (licensed)	\$188	23	2	0	0
NY (licensed)	\$70	58	2	0	17
<b>Tree Trimmer</b>					
NV (unlicensed)	--	--	--	--	--
CA (licensed)	\$529	1,460	2	0	18
VA (unlicensed)	--	--	--	--	--
MD (licensed)	\$30	1,095	1	0	18

\* Though California does not license interior designers, it does offer title protection to those who hold certification with the California Council for Interior Design Certification. Cal. Bus. & Prof. Code §§ 5800-12.

† As of January 1, 2021, Connecticut licenses manicurists. H.B. 7424, 2019 Gen. Assemb., Reg. Sess. (Conn. 2019); Connecticut State Department of Public Health. (n.d.). *Nail technician*. <https://portal.ct.gov/DPH/Practitioner-Licensing--Investigations/Nailtechs/Nail-Technician>. However, it did not do so during our study period.

Note: Any education captured in estimated days lost to education and experience is postsecondary education, or training, required for licensure. Estimated days lost does not include any minimum K-12 grade requirement for licensure.

## Findings: Licensing Consistently Has No Positive Effect on Service Quality

The primary findings from this study are two-fold.

First, across the multiple occupations and states, licensing (or stricter forms of it) consistently does not appear to produce greater service quality. In seven of the comparisons, there are no statistically significant differences in Yelp ratings. Quality in unlicensed or less burdensomely licensed states is essentially equivalent to that in licensed or more burdensomely licensed states.

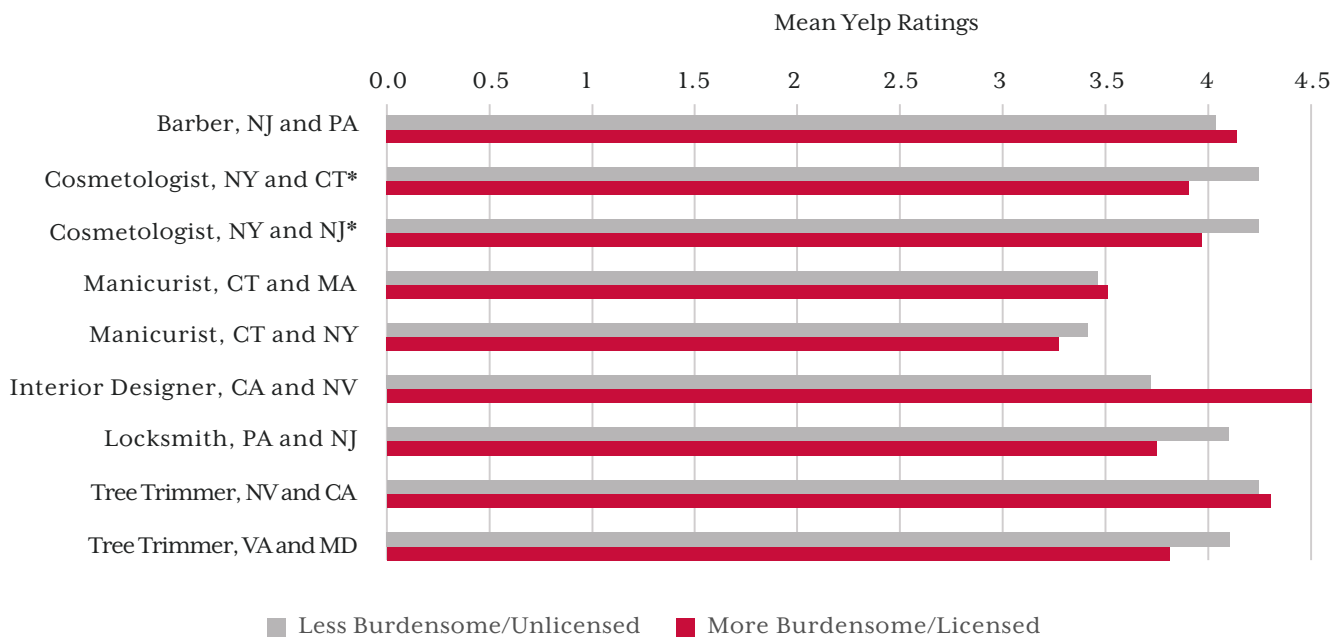
Second, where there is a measurable difference between states as indicated by statistical significance, the state with lighter regulation has *higher* quality. Specifically, cosmetologists in New York, with a less burdensome license, receive higher Yelp ratings than those in Connecticut and New Jersey, with more burdensome licenses.

If we look at the results in more detail, based on the average Yelp ratings for businesses on either side of state borders, licensing regime does not appear to make a meaningful difference in ser-

vice quality. As Figure 1 illustrates, the differences are small, never exceeding one point in the five-point Yelp scale. On average, the absolute difference in businesses' ratings between unlicensed or less burdensomely licensed states and their licensed or more burdensomely licensed counterparts comes to approximately 0.27 points.

We also observe no consistent patterns in the states with higher or lower Yelp ratings. In five of the nine comparisons, businesses in unlicensed or less burdensomely licensed states receive higher ratings, while in the other four comparisons, businesses in licensed or more burdensomely licensed states do. If licensing, or stricter forms of it, truly produces greater service quality, we would expect businesses in licensed, or more burdensomely licensed, states—the red bars in Figure 1—to consistently receive higher Yelp ratings. Yet our results show no such consistent pattern.

**Figure 1: Across Nine Comparisons, Licensing Never Produces Statistically Greater Quality**



\*Difference is statistically significant at  $p < 0.05$ .

Even stronger evidence comes from our statistical analysis. All but two of the differences shown in Figure 1 are no greater than what we might expect to see through random chance. Across seven of nine comparisons in which businesses were effectively alike, save for their regulatory environments, licensing is not associated with differences in quality that exceed what we would expect from chance alone. And because the nine comparisons cover six occupations and nine states, our findings are unlikely to be an artifact of any particular occupation, type of occupation or state.

Where we do find a statistically significant difference—the comparisons with asterisks in Figure 1—the state with less stringent requirements has *higher* quality. Cosmetologist ratings in less bur-

densomely licensed New York are, on average, approximately 0.34 points higher than those in Connecticut and 0.28 points higher than those in New Jersey, both of which have greater licensing burdens. (Appendix B provides our full results.)

If licensing proponents are right and licensing leads to greater service quality, we should see higher cosmetologist ratings in Connecticut and New Jersey—and with a clear, statistically significant difference. That we find precisely the opposite—plus no statistically significant differences in our seven other comparisons—strongly suggests licensing’s purported benefits for consumers are overstated for at least the occupations we studied and perhaps for others.



## Discussion: Why Licensing Fails

Our finding that licensing has no effect on quality is similar to results from other studies of licensing and service quality that looked at different states and occupations, including the studies of florists,<sup>30</sup> tour guides<sup>31</sup> and home improvement occupations<sup>32</sup> discussed above.

One area of difference between our study and many others is that, in two of our comparisons—cosmetologists in New York compared to those in Connecticut and New Jersey—we find quality to be higher in the less burdensomely licensed state. To our knowledge, only one other study, of barbers, cosmetologists, manicurists and massage therapists, has found similar results. As described above, that study, which also measured service quality by consumer Yelp ratings, found licensing, and stricter licensing requirements, were related to lower quality.<sup>33</sup>

All of our findings run counter to licensing proponents' argument that licensing improves service quality. There are several plausible reasons why licensing and progressively stricter forms of it might fail to generate better quality—and, in some cases, produce lower quality.

First, licensing could produce muted effects on service quality because other voluntary (i.e., non-regulatory) factors are already working to promote quality. For example, strong market competition can give businesses incentives to improve service quality as they seek to differentiate themselves and win customers.<sup>34</sup> Consumer reviews also keep companies accountable, helping promote safe, quality service.<sup>35</sup>

A second plausible explanation is that licensing can shut out aspiring workers of all quality levels—not just ones who are likely to provide low-quality service. Licensing proponents argue licensing keeps quality high by weeding out people who cannot meet minimum standards. But not everyone shut out by licensing barriers is shut out for lack of ability. The high costs in time

and money of fulfilling licensing requirements may deter some aspirants from even trying to become licensed—and this includes high-ability aspirants as well as low. High-ability aspirants are likely to have an abundance of other opportunities open to them such that the opportunity cost of pursuing a license is high and deterrent.

An example of this can be found in the accounting industry, where research has found a 15% reduction in first-time candidates for certified public accountant exams when licensure requires an additional year of education but no difference in CPA quality as measured by time to promotion and duration of employment.<sup>36</sup> The researcher found the additional year of education deterred both low-ability candidates and high-ability ones (as measured by exam passage rates) from pursuing the career path. The researcher also noted that the additional education “appears costly to high-ability candidates, potentially because of their higher opportunity cost.”<sup>37</sup>

Similarly, in the teaching industry, more stringent education requirements for teachers may negatively affect students' performance. One study found students' SAT scores were lower in states that required a master's degree for teachers.<sup>38</sup> On the other hand, giving teachers alternative pathways to licensure over the traditional education degree appears to bring in higher-quality teachers as measured by licensure exam scores.<sup>39</sup>

Finally, licensing and progressively restrictive forms of it might fail to produce higher quality because, in at least some cases, licensing requirements simply are not attuned to quality. Required training may not help aspirants acquire the knowledge and skills necessary to do a job or to do it well.

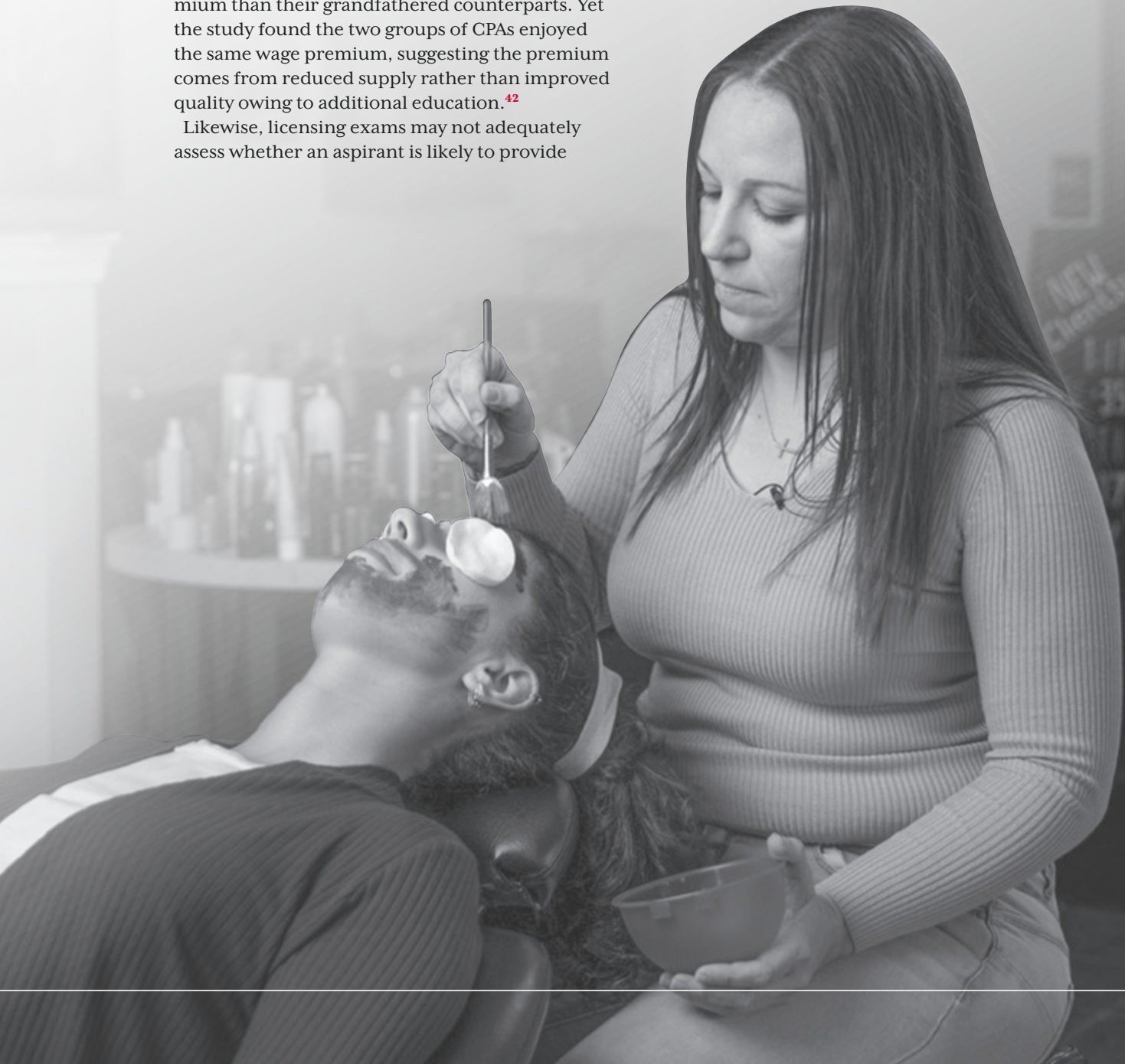
Illustrating this possibility, a study compared the licensing wage premiums for CPAs forced to complete an additional year of education for



licensure and CPAs grandfathered into the new licensing scheme.<sup>40</sup> A licensing wage premium is the amount licensed workers can earn over and above what they would if they did not need a license to work. Licensing proponents often attribute licensing wage premiums to higher quality. But there is another competing, or possibly complementary, explanation: In reducing the supply of workers in an occupation, licensing allows licensees to charge higher prices, whether or not they provide higher quality.<sup>41</sup> If stricter licensing leads to higher quality, CPAs with an additional year of education should have a higher wage premium than their grandfathered counterparts. Yet the study found the two groups of CPAs enjoyed the same wage premium, suggesting the premium comes from reduced supply rather than improved quality owing to additional education.<sup>42</sup>

Likewise, licensing exams may not adequately assess whether an aspirant is likely to provide

quality service. For example, following IJ's experiment testing whether Louisiana's florist license produced better floral arrangements, IJ invited the florists who blind-judged the arrangements to participate in focus groups. After IJ revealed the "floral design competition" was actually an experiment and the arrangements were from licensed Louisiana and unlicensed Texas, the judges were unsurprised to learn that the ratings did not differ by state or, for that matter, regulatory regime. In fact, the 10 judges from Louisiana—all state-licensed florists—derided their state's licensing test as outdated and irrelevant.<sup>43</sup>



# Implications and Policy Recommendations

Our findings offer no reason to believe licensing, and progressively stricter forms of it, promotes safe, quality service. Instead, in the occupations and states we studied, licensing appears to force workers to fulfill various requirements while fencing others out needlessly, imposing costs not only on workers but also on consumers and on society and the economy at large. In light of these findings—including our finding of no difference in manicurist quality between unlicensed Connecticut and licensed Massachusetts and New York—Connecticut’s decision to relicense manicurists seems particularly unwise.<sup>44</sup>

And it is unlikely the occupations we studied are the only occupations to which our findings apply. The diversity of the occupations we studied—representing general services, home improvement

services and personal care services—means it would be surprising if licensing failed to produce quality only in these occupations.

Moreover, licensing likely fails to produce higher quality in other states that regulate the occupations we studied. This is because the states we compared had some of the starkest differences in licensing burdens. As Figure 2 illustrates, while some of the occupations we studied are licensed by fewer than half the states, others are universally licensed. For example, interior designers are licensed by only two states and the District of Columbia, while barbers and cosmetologists are licensed by every state and the District. In recent years, states have delicensed some of these occupations,<sup>45</sup> suggesting they realized their licenses were not in the public interest.

**Figure 2: Licensing Likely Fails to Produce Higher Quality in Other States That License the Occupations Studied Here**

■ State Requires License to Practice      ● State Examined in This Study

State	Interior Designer	Barber	Cosmetologist	Manicurist	Locksmith	Tree Trimmer
Alabama		■	■	■	■	
Alaska		■	■	■		
Arizona		■	■	■		
Arkansas		■	■	■		
California	●	■	■	■	■	●
Colorado		■	■	■		
Connecticut		■	●	●	■	■
Delaware		■	■	■		
D.C.	■	■	■	■		
Florida		■	■	■		
Georgia		■	■	■		
Hawaii		■	■	■		■
Idaho		■	■	■		
Illinois		■	■	■	■	
Indiana		■	■	■		
Iowa		■	■	■		
Kansas		■	■	■		

State	Interior Designer	Barber	Cosmetologist	Manicurist	Locksmith	Tree Trimmer
Kentucky						
Louisiana						
Maine						
Maryland						
Massachusetts						
Michigan						
Minnesota						
Mississippi						
Missouri						
Montana						
Nebraska						
Nevada						
New Hampshire						
New Jersey						
New Mexico						
New York						
North Carolina						
North Dakota						
Ohio						
Oklahoma						
Oregon						
Pennsylvania						
Rhode Island						
South Carolina						
South Dakota						
Tennessee						
Texas						
Utah						
Vermont						
Virginia						
Washington						
West Virginia						
Wisconsin						
Wyoming						

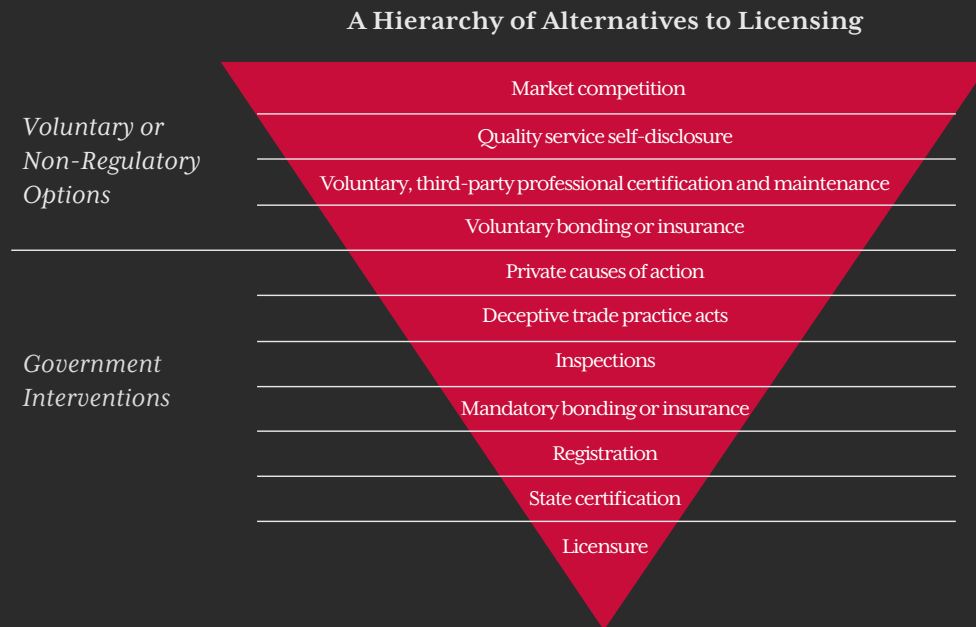
Note: Most of the data for this figure come from Carpenter, D. M., Knepper, L., Sweetland, K., McDonald, J. (2017). *License to work: A national study of burdens from occupational licensing* (2nd Ed.). Arlington, VA: Institute for Justice. See, specifically, the complete updated dataset here: <https://ij.org/report/license-work-2/tw2-data/>. However, since the publication of that report, some states have either licensed or delicensed the relevant occupations. Specifically, while Connecticut did not license manicurists at the time of that report, or during our study period here, it has done so since January 1, 2021. H.B. 7424, 2019 Gen. Assemb., Reg. Sess. (Conn. 2019); Connecticut State Department of Public Health. (n.d.). Nail technician. <https://portal.ct.gov/DPH/Practitioner-Licensing--Investigations/Nailtechs/Nail-Technician>. In addition, Florida has delicensed interior designers. H.B. 1193, 2020 Leg., Reg. Sess. (Fla. 2020). and Nebraska and Tennessee have delicensed locksmiths. L.B. 169, 2021 Leg., Reg. Sess. (Neb. 2021) and S.B. 0012, 2021 Gen. Assemb., Reg. Sess. (Tenn. 2021). We also discovered that we erred in counting tree trimmers as unlicensed in Minnesota. S.F. 905, 2003 Leg., Reg. Sess. (Minn. 2003). This figure reflects these updates and corrections.

All of this suggests our findings apply to other occupations and states not included in our analyses. If this is true, the benefits of licensing may be exaggerated, particularly compared to the costs as cataloged by others. This may mean there are many licenses that serve as nothing more than needless barriers to work and consumer choice.

Moreover, although lawmakers, and others, often assume licensing is the only way to pro-

tect the public from occupational harms, there exists a whole range of alternatives between no regulation and licensing (see Figure 3), including voluntary measures and less restrictive government interventions.<sup>46</sup> Depending on the harms presented by an occupation—if any—one or a combination of some of these alternatives may be adequate to protect the public without all of licensing’s costs.

**Figure 3: The Inverted Pyramid Offers Many Less Burdensome Alternatives to Licensing**



Many occupations may not require any government intervention. If there is no threat to public health or safety, the government should not get involved. Not only is poor, though safe, service—a bad haircut or an ugly floral arrangement, say—an illegitimate reason for government intervention, but, as our results and the results of other research show, government intervention may not even work to promote quality.<sup>47</sup> In fact, the costs of government intervention are likely to outweigh any benefits where there is no threat to public health or safety.

Occupations that the government does not regulate are not “unregulated.” Indeed, ordinary market competition gives businesses incentives to provide safe, quality service. Businesses that fail to provide such service will suffer loss of reputation—and customers.<sup>48</sup> This has always been the case, but it is truer now than ever thanks to the ease with which modern telecommunications and consumer review platforms such as Yelp and Tripadvisor allow consumers to share information, not just with people they know but with complete strangers.<sup>49</sup>

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Alone, or in tandem with other voluntary alternatives, market competition may be enough to ensure safe, quality service in many occupations. For example, service providers who want to assure prospective consumers of their commitment to safety and quality can proactively share prior consumer feedback, such as by linking to their Yelp or Tripadvisor pages from their websites or other marketing materials. Such quality self-disclosures can send a powerful signal to consumers.

Service providers can also signal their commitment to safety and quality by voluntarily obtaining and maintaining third-party professional certifications, or pursuing other training, or becoming bonded or insured. Tara Swagger, the Connecticut salon owner from our introduction, for example, can boast numerous credentials that she obtained voluntarily. As she put it, her clients are “very happy to know [her] long list of credentials and commitment to education has them in safe hands.”<sup>50</sup>

If these fully voluntary measures are not enough to protect the public, consumers can bring lawsuits against service providers under private causes of action. And all 50 states and the District of Columbia have consumer protection laws called deceptive trade practice acts that allow both attorneys general and consumers to sue service providers engaged in certain practices deemed false, misleading or deceptive.<sup>51</sup>

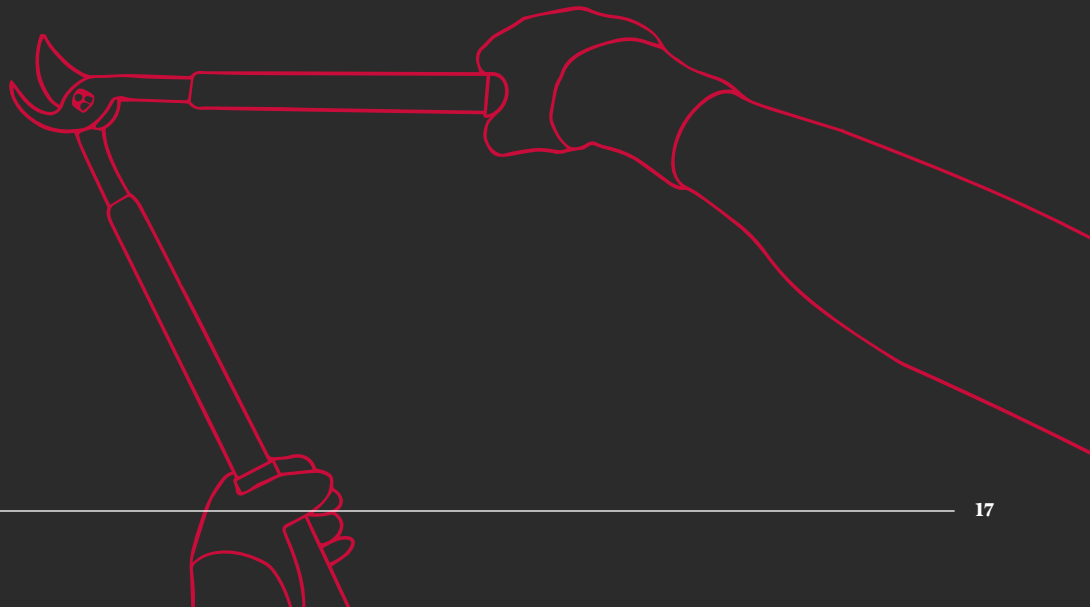
Governments should consider more restrictive alternatives if and only if there is systematic, em-

pirical evidence of a significant threat to public health and safety not adequately addressed by voluntary alternatives or less restrictive preexisting government interventions such as those described above. Where they find real evidence of such threats, governments should adopt the least restrictive intervention (or combination of interventions) that would address the problem, with licensing being their last resort.

They may well find that inspections, mandatory bonding or insurance, registration requirements, or state certification as a condition for using a particular title are adequate to protect the public. And if governments determine licensing is the only way to protect the public, they should ensure licensing requirements are no more restrictive than necessary.<sup>52</sup>

Following this approach would help ensure any new licenses or other occupational regulations are both necessary and no more restrictive than necessary to protect the public. But as this and other research suggests,<sup>53</sup> many unnecessary licenses are already on the books. And many requirements of existing licenses seem dubiously related to health and safety. For example, a recent study found that, on average, only about 25% of barber and cosmetologist curricula and 40% of manicurist curricula cover health and safety.<sup>54</sup>

Governments should therefore review existing licenses and other occupational regulations to determine whether they are necessary and properly targeted to protect the public.



## Conclusion

Our study adds to the mounting evidence that licensing does not promote safe, quality service—one of its major purported benefits. It also suggests licensing may actually decrease service quality in some cases. Given licensing’s growth over the past several decades and copious prior research finding licensing imposes significant costs, it is time to question whether licensing’s expansion has been wise. To rein in ever-expanding licensing and its high costs, governments should carefully consider whether proposed and existing licenses are necessary to protect public health and safety and reject or repeal those that are not. They should also ensure requirements for any licenses deemed necessary are narrowly targeted to health and safety. In so doing, governments can transform licenses into liberty to the benefit of workers, consumers, and society and the economy at large.



## Appendix A: Methods

The following question guided this study: Is there a significant difference in service quality between providers in states with no or lighter license requirements and those in neighboring states with more burdensome requirements?

### Data

To measure quality, we relied on Yelp business ratings, which others have found to accurately reflect service quality.<sup>55</sup> These ratings span the period from October 2004 through October 2020 for locksmiths and from October 2004 through June/July 2019 for all other occupations, although not all businesses may have had ratings in every year of those time spans. All ratings are on a five-star scale, with one star being the worst rating a business can receive and five stars the best. Businesses on Yelp also have written reviews, but our analysis used only the numerical rating. For each business, the rating represents the average across the entire time span. Average ratings are not available by year.

### Sample

The sampling unit (and the unit of analysis) was businesses within specific occupations. To determine the sample of occupations and states in our study, we used data from the second edition of the Institute for Justice's *License to Work* report to identify occupations with stark licensing differences across neighboring states.<sup>56</sup> Because IJ released the second edition of *License to Work* in 2017, we checked relevant licensing requirements

to ensure nothing significant had changed in the intervening years.

Licensing is not limited to state laws. Counties and cities can and often do enact their own licensing laws.<sup>57</sup> Failing to account for such laws, where they exist, would produce spurious analytical results. We therefore also examined a small sample of cities in border counties in our states of interest to determine whether local licensing was present (it was not). We also examined salon/shop licensing at the state and local levels for barbering- and cosmetology-related occupations as this, too, can sometimes affect licensing requirements for workers. However, such requirements had no impact on our analyses.

We limited the businesses in our sample to those within narrow bandwidths on either side of state borders. For each occupation-state comparison, bandwidths were determined independently and automatically for each comparison using MSE-optimal procedures in Stata's `rdrobust` program. Consequently, bandwidths differ by occupation-state comparison (see Table A1). Before creation of the bandwidths, comparisons that used the CA-NV border (interior designer and tree trimmer) were first narrowed only to counties in the Lake Tahoe region. This is due to a lack of businesses anywhere else along the states' shared border.<sup>58</sup> These counties provided a sufficient number of firms for our analyses, while other regions along the CA-NV border were too rural to do so. Final sample sizes for businesses by occupation-state comparisons are presented in Table A2.



**Table A1: Final Comparisons and Bandwidths**

Occupation	States	Bandwidth
Barber	NJ to PA	21 miles
Cosmetologist	NY to CT	16 miles
Cosmetologist	NY to NJ	16 miles
Interior Designer*	CA to NV	11 miles
Locksmith	PA to NJ	12 miles
Manicurist†	CT to MA	23 miles
Manicurist	CT to NY	17 miles
Tree Trimmer	NV to CA	19 miles
Tree Trimmer	VA to MD	19 miles

\* Though California does not license interior designers, it does offer title protection to those who hold certification with the California Council for Interior Design Certification. Cal. Bus. & Prof. Code §§ 5800-12.

† As of January 1, 2021, Connecticut licenses manicurists. H.B. 7424, 2019 Gen. Assemb., Reg. Sess. (Conn. 2019); Connecticut State Department of Public Health. (n.d.). *Nail technician*. <https://portal.ct.gov/DPH/Practitioner-Licensing--Investigations/Nailtechs/Nail-Technician>. However, it did not do so during our study period.

**Table A2: Number of Businesses for Each Occupation-State Comparison**

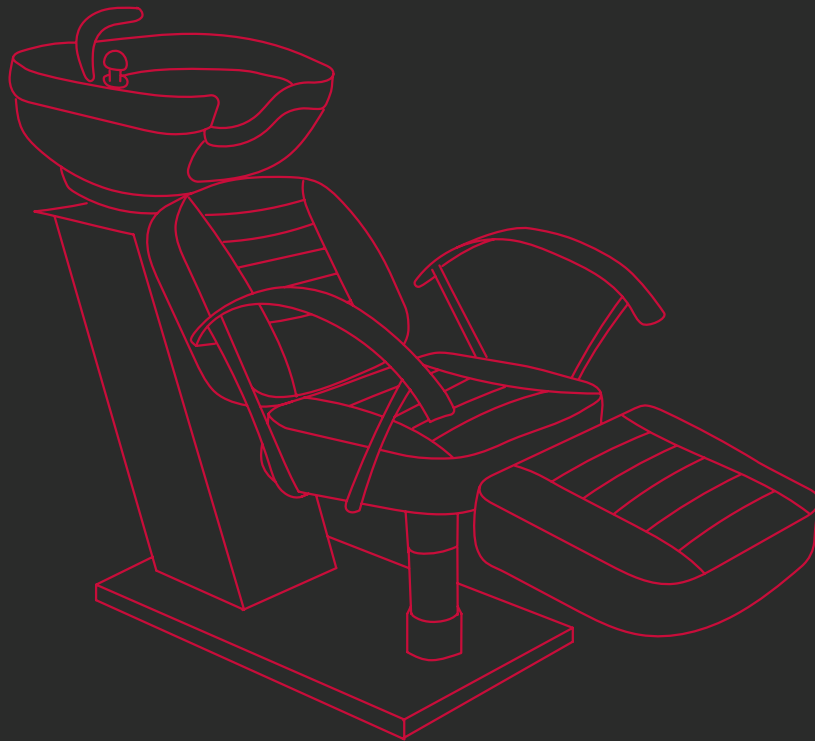
Occupation	Lower Burden/Unlicensed		Higher Burden/Licensed		Total
	State	# of Firms	State	# of Firms	# of Firms
Barber	NJ	237	PA	507	744
Cosmetologist	NY	1,241	CT	120	1,361
Cosmetologist	NY	1,234	NJ	610	1,844
Interior Designer	CA	16	NV	20	36
Locksmith	PA	169	NJ	157	326
Manicurist	CT	282	MA	106	388
Manicurist	CT	185	NY	226	411
Tree Trimmer	NV	31	CA	15	46
Tree Trimmer	VA	83	MD	81	164

## Analysis

We analyzed these data using regression models, treating individual businesses as the unit of analysis. In the analyses, we employed a geographic regression discontinuity design to isolate the potential effect of high licensing burdens in counties bordering either unlicensed or less burdensomely licensed states.<sup>59</sup> The areas in which these businesses are located should be similar except for variation in state licensing requirements. In geographic discontinuity, if a license were an important determinant of service quality, we would expect to find a measurable difference in service quality between states when comparing businesses across borders.

We ran separate regressions for each occupation-state comparison. This allowed for a clear interpretation of a specific license's effect rather than the general effect of all the licenses captured in our models, which vary in their burden. We also performed manipulation testing on density dis-

continuity.<sup>60</sup> This addressed the common concern in geographic regression discontinuity that firms are not randomly distributed around the border (in this case) and may, instead, show evidence of self-selection or nonrandom sorting into control and treatment status. Specifically, businesses may choose, for example, to locate more frequently on the unlicensed side of the border, and those that do may have some characteristics that may produce a systematic effect on service quality. The implication is that those characteristics—rather than licensing—may explain differences, or lack thereof, in service quality. Density checks revealed an inconsistent pattern, with a mixture of non-significance, greater density in licensed states and greater density in unlicensed states. If anything, the clearer trend showed greater density in the more populated state in each comparison (e.g., greater density in NY compared to CT for the manicurist comparison). Thus, results do not suggest a clear indication of selection bias.



## Appendix B: Results

This appendix presents detailed findings from the analyses described in Appendix A. Table B1 presents descriptive statistics from each of the occupation-state comparisons.

**Table B1: Descriptive Statistics of Yelp Ratings for Each Occupation-State Comparison**

Occupation	Lower Burden/Unlicensed			Higher Burden/Licensed		
	State	Mean Rating	Standard Deviation of Rating	State	Mean Rating	Standard Deviation of Rating
Barber	NJ	4.0	1.1	PA	4.1	1.0
Cosmetologist	NY	4.2	0.6	CT	3.9	0.8
Cosmetologist	NY	4.2	0.6	NJ	4.0	0.7
Interior Designer	CA	3.7	1.4	NV	4.5	1.0
Locksmith	PA	4.1	1.3	NJ	3.7	1.5
Manicurist	CT	3.5	0.8	MA	3.5	0.8
Manicurist	CT	3.4	0.7	NY	3.3	0.8
Tree trimmer	NV	4.2	1.2	CA	4.3	1.2
Tree trimmer	VA	4.1	1.2	MD	3.8	1.4

Table B2 provides regression results for each of the occupation-state comparisons. Nearest-neighbor robust standard errors are used throughout.

**Table B2: Regression Results**

Occupation	Coefficient	SE
Barber	0.07	0.22
Cosmetologist - NY and CT	-0.53*	0.14
Cosmetologist - NY and NJ	-0.22*	0.05
Interior Designer	-1.36	3.89
Locksmith	-0.36	0.33
Manicurist - CT and MA	-0.20	0.32
Manicurist - CT and NY	-0.17	0.21
Tree Trimmer - NV and CA	0.32	1.15
Tree Trimmer - VA and MD	-0.96	0.63

\*p < 0.05

## Appendix C: Relevant Prior Literature

Study	Occupation(s)	Measure(s) of Quality	Relationship of Licensing to Quality
Anderson, D. M., Brown, R., Charles, K. K., & Rees, D. I. (2020). Occupational licensing and maternal health: Evidence from early midwifery laws. <i>Journal of Political Economy</i> , 128(11), 4337–4383. <a href="https://doi.org/10.1086/710555">https://doi.org/10.1086/710555</a>	Midwife	Maternal mortality	Positive
Barrios, J. M. (2022). Occupational licensing and accountant quality: Evidence from the 150-hour rule. <i>Journal of Accounting Research</i> , 60(1), 3–43. <a href="https://doi.org/10.1111/1475-679X.12408">https://doi.org/10.1111/1475-679X.12408</a>	Accountant	Time to promotion and tenure at a firm	No effect
Berger, M. C., & Toma, E. F. (1994). Variation in state education policies and effects on student performance. <i>Journal of Policy Analysis and Management</i> , 13(3), 477–491. <a href="https://doi.org/10.2307/3325387">https://doi.org/10.2307/3325387</a>	Teacher	SAT scores	Negative
Boyd, D., Lankford, H., Loeb, S., Rockoff, J., & Wycoff, J. (2008). <i>The narrowing gap in New York City teacher qualifications and its implications for student achievement in high-poverty schools</i> (NBER Working Paper No. 14021). Cambridge, MA: National Bureau of Economic Research. <a href="https://www.nber.org/papers/w14021">https://www.nber.org/papers/w14021</a>	Teacher	Student test scores	Positive
Carpenter, D. M. (2010). <i>Blooming nonsense: Experiment reveals Louisiana's florist licensing scheme as pointless and anti-competitive</i> . Arlington, VA: Institute for Justice. <a href="https://ij.org/report/blooming-nonsense-2/">https://ij.org/report/blooming-nonsense-2/</a>	Florist	Judges' scores	No effect
Carpenter, D. M. (2012). Testing the utility of a licensing policy: Evidence from a field experiment on occupational regulation. <i>Journal of Applied Business and Economics</i> , 13(2), 28–41. <a href="http://m.www.na-businesspress.com/JABE/CarpenterDM_Web13_2_.pdf">http://m.www.na-businesspress.com/JABE/CarpenterDM_Web13_2_.pdf</a>			
Deyo, D. (2017). <i>Law and labor markets: Three essays on individual decision making</i> [Doctoral dissertation, George Mason University]. ProQuest Dissertations. <a href="https://www.proquest.com/openview/20d4e5374db69e0a3c9c7ea5aa750c6f/1?pq-origsite=gscholar&amp;cbl=18750">https://www.proquest.com/openview/20d4e5374db69e0a3c9c7ea5aa750c6f/1?pq-origsite=gscholar&amp;cbl=18750</a>	Barber, cosmetologist, manicurist, massage therapist	Yelp ratings	Negative
Erickson, A. C. (2016). <i>Putting licensing to the test: How licenses for tour guides fail consumers—and guides</i> . Arlington, VA: Institute for Justice. <a href="https://ij.org/report/putting-licensing-test/">https://ij.org/report/putting-licensing-test/</a>	Tour guide	Tripadvisor ratings	No effect
Farronato, C., Fradkin, A., Larsen, B., & Brynjolfsson, E. (2020). <i>Consumer protection in an online world: An analysis of occupational licensing</i> (NBER Working Paper No. 26601). Cambridge, MA: National Bureau of Economic Research. <a href="https://doi.org/10.3386/w26601">https://doi.org/10.3386/w26601</a>	Home improvement (e.g., painter, interior designer)	Consumer satisfaction and hiring decisions	No effect

Study	Occupation(s)	Measure(s) of Quality	Relationship of Licensing to Quality
Goldhaber, D. D., & Brewer, D. J. (2000). Does teacher certification matter? High school teacher certification status and student achievement. <i>Educational Evaluation and Policy Analysis</i> , 22(2), 129–145. <a href="https://doi.org/10.2307/1164392">https://doi.org/10.2307/1164392</a>	Teacher	Student test scores	Mixed
Guntermann, K. L., & Smith, R. L. (1988). Licensing requirements, enforcement effort and complaints against real estate agents. <i>The Journal of Real Estate Research</i> , 3(2), 11–20. <a href="https://www.jstor.org/stable/44095230">https://www.jstor.org/stable/44095230</a>	Real estate agent	Consumer complaints	No effect
Holen, A. (1978). <i>The economics of dental licensing</i> . Alexandria, VA: Public Research Institute. <a href="https://apps.dtic.mil/sti/pdfs/ADA075961.pdf">https://apps.dtic.mil/sti/pdfs/ADA075961.pdf</a>	Dentist	Malpractice insurance premium and dental health	Mixed
Johnson, L. L., & Loucks, C. (1986). The effect of state licensing regulations on the real estate brokerage industry. <i>Real Estate Economics</i> , 14(4), 567–582. <a href="https://doi.org/10.1111/1540-6229.00404">https://doi.org/10.1111/1540-6229.00404</a>	Real estate broker	Consumer complaints	Positive
Kane, T. J., Rockoff, J. E., & Staiger, D. O. (2008). What does certification tell us about teacher effectiveness? Evidence from New York City. <i>Economics of Education Review</i> , 27(6), 615–631. <a href="https://doi.org/10.1016/j.econedurev.2007.05.005">https://doi.org/10.1016/j.econedurev.2007.05.005</a>	Teacher	Student test scores	No effect
Kleiner, M. M., & Kudrle, R. T. (2000). Does regulation affect economic outcomes? The case of dentistry. <i>The Journal of Law and Economics</i> , 43(2), 547–582. <a href="https://doi.org/10.1086/467465">https://doi.org/10.1086/467465</a>	Dentist	Dental health	No effect
Kleiner, M. M., Marier, A., Park, K. W., & Wing, C. (2016). Relaxing occupational licensing requirements: Analyzing wages and prices for a medical service. <i>The Journal of Law and Economics</i> , 59(2), 261–291. <a href="https://doi.org/10.1086/688093">https://doi.org/10.1086/688093</a>	Nurse practitioner	Mortality rates and malpractice lawsuits	No effect
Kleiner, M. M., & Petree, D. L. (1988). Unionism and licensing of public school teachers: Impact on wages and educational output. In R. B. Freeman & C. Ichniowski (Eds.), <i>When public sector workers unionize</i> (pp. 305–321). University of Chicago Press. <a href="http://www.nber.org/chapters/c7914">http://www.nber.org/chapters/c7914</a>	Teacher	SAT and ACT scores and graduation rates	Mixed
Kleiner, M. M., & Todd, R. M. (2009). Mortgage broker regulations that matter: Analyzing earnings, employment, and outcomes for consumers. In D. H. Autor (Ed.), <i>Studies of labor market intermediation</i> (pp. 183–231). University of Chicago Press. <a href="https://doi.org/10.7208/chicago/9780226032900.003.0007">https://doi.org/10.7208/chicago/9780226032900.003.0007</a>	Mortgage broker	Foreclosure rates	Negative

Study	Occupation(s)	Measure(s) of Quality	Relationship of Licensing to Quality
Larsen, B. (2015). <i>Occupational licensing and quality: Distributional and heterogeneous effects in the teaching profession</i> . Stanford University and NBER. <a href="https://web.stanford.edu/~bjlarsen/Larsen%20(2015)%20Occupational%20licensing%20and%20quality.pdf">https://web.stanford.edu/~bjlarsen/Larsen%20(2015)%20Occupational%20licensing%20and%20quality.pdf</a>	Teacher	Student test scores	Mixed
Law, M. T., & Kim, S. (2005). Specialization and regulation: The rise of professionals and the emergence of occupational licensing regulation. <i>The Journal of Economic History</i> , 65(3), 723–756. <a href="https://www.jstor.org/stable/3875015">https://www.jstor.org/stable/3875015</a>	Physician	Mortality rates and malpractice lawsuit	Mixed
Maurizi, A. R. (1980). The impact of regulation on quality: The case of California contractors. In S. Rottenberg (Ed.), <i>Occupational licensure and regulation</i> (pp. 26–35). Washington, DC: American Enterprise Institute for Public Policy Research.	Contractor	Consumer complaints	Mixed
Meehan, B. J., & Stephenson, E. F. (2020). Reducing a barrier to entry: The 120/150 CPA licensing rule. <i>Journal of Labor Research</i> , 41, 382–402. <a href="https://doi.org/10.1007/s12122-020-09313-4">https://doi.org/10.1007/s12122-020-09313-4</a>	Accountant	License exam pass rates and scores	No effect
Pancak, K. A., & Sirmans, C. F. (2006). The effect of agency reform on real estate service quality. <i>Journal of Housing Research</i> , 15(1), 41–54. <a href="https://www.jstor.org/stable/24861106">https://www.jstor.org/stable/24861106</a>	Real estate agent	Disciplinary actions	Positive
Paul, C. (1984). Physician licensure legislation and the quality of medical care. <i>Atlantic Economic Journal</i> , 12(4), 18–30. <a href="https://doi.org/10.1007/BF02304510">https://doi.org/10.1007/BF02304510</a>	Physician	Mortality rates	No effect
Powell, B., & Vorotnikov, E. (2012). Real estate continuing education: Rent seeking or improvement in service quality? <i>Eastern Economic Journal</i> , 38(1), 57–73. <a href="https://www.jstor.org/stable/41408845">https://www.jstor.org/stable/41408845</a>	Real estate agent	Consumer complaints and disciplinary actions	No effect
Rupp, N. G., & Tan, K. M. (2022). <i>An evaluation of legislation designed to improve airline pilots' safety and performance</i> . SSRN Paper. <a href="https://dx.doi.org/10.2139/ssrn.3617370">https://dx.doi.org/10.2139/ssrn.3617370</a>	Pilot	Flight delays	Mixed
Sass, T. R. (2015). Licensure and worker quality: A comparison of alternative routes to teaching. <i>The Journal of Law &amp; Economics</i> , 58(1), 1–35. <a href="https://doi.org/10.1086/682904">https://doi.org/10.1086/682904</a>	Teacher	Student test scores	Mixed
Shilling, J. D., & Sirmans, C. F. (1988). The effects of occupational licensing on complaints against real estate agents. <i>The Journal of Real Estate Research</i> , 3(2), 1–9. <a href="https://www.jstor.org/stable/44095229">https://www.jstor.org/stable/44095229</a>	Real estate agent	Consumer complaints	Positive
Shuls, J. V., & Trivitt, J. R. (2015). Teacher effectiveness: An analysis of licensure screens. <i>Educational Policy</i> , 29(4), 645–675. <a href="https://doi.org/10.1177/0895904813510777">https://doi.org/10.1177/0895904813510777</a>	Teacher	Student test scores and licensing exam scores	Mixed
Young, S. D. (1986). Accounting licensure, quality, and the “Cadillac effect.” <i>Journal of Accounting and Public Policy</i> , 5(1), 5–19. <a href="https://doi.org/10.1016/0278-4254(86)90003-7">https://doi.org/10.1016/0278-4254(86)90003-7</a>	Accountant	Insurance premiums	No effect

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# Endnotes

- 1 Kasprak, J. (2001). *Nail technicians* (OLR Research Report 2001-R-0626). Hartford, CT: Office of Legislative Research. <https://www.cga.ct.gov/2001/rpt/2001-R-0626.htm>; Orlando, J. (2015). *Nail salons* (OLR Research Report 2015-R-0183). Hartford, CT: Office of Legislative Research. <https://www.cga.ct.gov/2015/rpt/pdf/2015-R-0183.pdf>
- 2 1980 Conn. Acts No. 484 (Reg. Sess.); Kasprak, 2001; Connecticut General Assembly Legislative Program Review and Investigations Committee. (1980). *Sunset review: Regulation of hairdressers and cosmeticians* (Vol. I-1). <https://www.cga.ct.gov/pri/docs/Sunset%201980/PRI%20Sunset%20Review%20Report%20on%20Regulations%20of%20Hairdressers%20and%20Cosmeticians-%201980.pdf>
- 3 H.B. 7424, 2019 Gen. Assemb., Reg. Sess. (Conn. 2019). Despite intense lobbying pressure, the provision only passed after it was included in the state budget. Munson, E. (2019, January 31). State resists nail-care licensing despite pleas from many salons. *Connecticut Post*. <https://www.ctpost.com/politics/article/State-resists-nail-care-licensing-despite-pleas-13577010.php>; Ayres-Brown, A. (2019, April 3). Unregulated nail salons in Connecticut pose labor, health risks. *Connecticut Public Radio*. <https://www.ctpublic.org/news/2019-04-03/unregulated-nail-salons-in-connecticut-pose-labor-health-risks>; *Human Trafficking and State Contracts and the Licensing of Estheticians, Nail Technicians and Eyelash Technicians*: Hearing on H.B. 6742 Before the Government Administration and Elections Committee, 2019 Gen. Assemb., Reg. Sess. (Conn. 2019) [hereinafter “H.B. 6742 Hearing”] (statement of Julia Trigila), available at <https://www.cga.ct.gov/2019/GAEdat/Tmy/2019HB-06742-R000325-Trigila,%20Julia-TMY.PDF>; Trigila, J. (n.d.). Are you safe in Connecticut spas? [Petition]. *Change.org*. <https://www.change.org/p/ct-coalition-of-esthetics-connecticut-the-last-only-state-left-to-recognize-licensing-for-esthetics-skin-nails>; Ramirez, H. (2019, August 23). Nail technicians to be licensed starting 2021. *News 8 wtnh.com*. <https://www.wtnh.com/news/nail-technicians-to-be-licensed-starting-2021/>
- 4 See, e.g., Munson, 2019; H.B. 6742 Hearing (statement of Tina Gilbert), available at <https://www.cga.ct.gov/2019/GAEdat/Tmy/2019HB-06742-R000325-Gilbert,%20Tina-TMY.PDF>; H.B. 6742 Hearing (statement of Tina Courpas, executive director of the Permanent Comm’n on the Status of Women in Conn.), available at <https://www.cga.ct.gov/2019/GAEdat/Tmy/2019HB-06742-R000423-Courpas,%20Tina-Permanent%20Commisison%20on%20the%20Status%20of%20Women%20in%20CT-TMY.PDF>. Advocates also argued that licensing would help reduce the problem of human trafficking in salons. See, e.g., Ratliff, J. (2019, March 25). Proposed bill would require licensing for beauty technicians. *NBC Connecticut*. <https://www.nbcconnecticut.com/news/local/proposed-bill-would-require-licensing-for-beauty-technicians/129925/>
- 5 Specifically, opponents argued licensing would harm workers and businesses and overburden regulators. See, e.g., Munson, 2019; H.B. 6742 Hearing (statement of Gary Olmstead), available at <https://www.cga.ct.gov/2019/GAEdat/Tmy/2019HB-06742-R000325-Olmstead,%20Gary-TMY.PDF>. They also expressed skepticism that licensing would mitigate human trafficking. See, e.g., Ratliff, 2019.
- 6 H.B. 6742 Hearing (statement of Tara Swagger); Taraesthetics. (n.d.). *About us*. <http://www.taraesthetics.com/about-us.html>
- 7 H.B. 6742 Hearing (statement of Tara Swagger).
- 8 *Id.*
- 9 *Id.*
- 10 *Id.*
- 11 *Id.*
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## About IJ

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