

**UNDERSTANDING RURAL LEGAL DESERTS TO INFORM PUBLIC POLICY:  
IDENTIFYING AND DESCRIBING LAWYER GAPS IN NON-METROPOLITAN  
COUNTIES**

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*Rural legal deserts have become a growing topic of interest to legal scholars and social scientists in the U.S. However, current research is limited by measurement issues and by the lack of national-scale analyses. To address these limitations, we identify legal deserts by applying latent profile analysis to lawyer gap rates for  $N = 2,307$  non-metropolitan counties in the U.S. Lawyer gap rates are calculated as local demand for lawyers less than the local supply, using employment in private practice law offices from the Census Bureau. Next, we statistically describe the spatial, demographic, economic, and social characteristics of legal deserts. We then critically review, and offer recommendations to improve, existing policies to address lawyer shortages in rural areas. Our first finding is that there is no binary definition of legal deserts, rather it falls along a continuum based on severity of lawyer gap rates. Second, legal deserts affect over half of non-metro counties, but are concentrated in a few states in the west and south. Third, we find the American Bar Association's definition of a legal desert is too high for use in policy; and we recommend lowering the threshold from 1.0 to 0.5 lawyers per 1,000 residents. Fourth, lawyers in legal deserts earn about the same as lawyers in other non-metro counties, suggesting financial incentives may be less effective. Legal deserts also tend to be more distant, disconnected, diverse, and disadvantaged. This limits the use of mobile legal clinics and tele-legal services; and requires lawyers to have proper language or cultural competencies. We recommend licensed legal paraprofessional programs as a long-term solution to address legal deserts. Lastly, we recommend that communities promote legal consciousness in their community to improve people's awareness of their legal rights, the legal process, and how to access legal services.*

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## TABLE OF CONTENTS

INTRODUCTION .....	2
I. BACKGROUND AND PREVIOUS RESEARCH .....	6
II. DATA AND METHODS .....	13
A. <i>Spatial Scale and Non-Metropolitan Definition</i> .....	13
B. <i>Legal Variables and Statistical Methods</i> .....	14
C. <i>Socioeconomic Variables and Statistical Methods</i> .....	18
1. Law Office Indicators .....	18
2. Geographic and Economic Indicators .....	19
3. Social Risk, Housing, and Social Capital Indicators .....	20
III. RESULTS .....	21
A. <i>Identification of Non-Metro Legal Deserts</i> .....	21
B. <i>Characteristics of Legal Deserts</i> .....	23
1. Law Office Characteristics .....	23
2. Demographics .....	26
3. Social and Housing Conditions.....	28
4. Economic Conditions.....	31
IV. POLICY RESPONSES AND IMPLICATIONS .....	33
A. <i>Recruitment and Retention Programs</i> .....	33
B. <i>Licensed Legal Paraprofessional Programs</i> .....	35
C. <i>Pro Bono and Pro Se Programs</i> .....	38
D. <i>Law School Programs</i> .....	40
E. <i>Community Legal Education Programs</i> .....	42
CONCLUSION.....	43
APPENDIX.....	59
A. <i>Latent Profile Analysis</i> .....	59
B. <i>Imputations and Limitations</i> .....	60
C. <i>List of Variables</i> .....	61

## INTRODUCTION

Legal scholars and social scientists in the United States have become increasingly interested in rural legal deserts.<sup>1</sup> The loss of legal services in rural communities is often associated with rural population loss and decline in community wellbeing.<sup>2</sup> Rural America has experienced dramatic changes in social and economic conditions since the 1980s. In the Midwest and Great Plains, many non-metropolitan counties have experienced decline in terms of shrinking populations, exodus of youth and professionals, loss of businesses and jobs, and a reduction in the number and quality of local services, especially healthcare but also legal services.<sup>3</sup> One theoretical explanation for these changes is the shift from an industrial economy to a post-industrial one, which has negatively impacted traditional rural sectors like agriculture and manufacturing.<sup>4</sup> These downward trends have persisted over the past several decades, and are unlikely to be reversed in most rural communities.<sup>5</sup> However, some shrinking rural places have managed to maintain quality services by drawing upon their social capital and civic participation, blunting the worst effects of shrinkage.<sup>6</sup> This research suggests that communities have some agency to address rural legal deserts locally, with the support of state and national programs.

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<sup>1</sup> Eg. Michele Statz & Paula Termuhlen, *Rural Legal Deserts are a Critical Health Determinant*, 110 AMERICAN JOURNAL OF PUBLIC HEALTH 1519–1522 (2020); Michelle Paxton, *Preventing Legal Deserts in our Rural Communities*, AMERICAN BAR ASSOCIATION (2023), <https://www.americanbar.org/groups/litigation/resources/newsletters/childrens-rights/fall2023-preventing-legal-deserts-in-our-rural-communities/> (last visited Jun 24, 2024).

<sup>2</sup> David J. Peters, Sara Hamideh, Kimberly Zarecor & Marwan Ghandour, *Using Entrepreneurial Social Infrastructure to Understand Smart Shrinkage in Small Towns*, 64 J. RURAL STUD. 39-49 (2018).

<sup>3</sup> Jeffrey B. Jacquet, Eric Guthrie & Hayven Jackson, *Swept Out: Measuring Rurality and Migration Intentions on the Upper Great Plains*, 82 RURAL SOCIOL. 601-627 (2017); David J. Peters, *Community Resiliency in Declining Small Towns: Impact of Population Loss on Quality of Life Over 20 Years*, 84 RURAL SOCIOL. 635-668 (2019).

<sup>4</sup> David J. Peters, *American Income Inequality Across Economic and Geographic Space, 1970-2010*, 42 SOC. SCI. REV. 1490-1504 (2013).

<sup>5</sup> Kenneth M. Johnson & Daniel T. Lichter, *Metropolitan Reclassification and the Urbanization of Rural America*, 57 DEMOGRAPHY 1929-1950 (2020).

<sup>6</sup> *Id.*

Existing research on rural legal deserts has focused on distinguishing between access to lawyers and access to justice, as well as the intersectionality of legal deserts with other forms of marginalization across race, class, gender, and other dimensions. However, there are several limitations in this emerging research area. One limitation is poor measurement of legal deserts. The data used to measure lawyers, mainly state and national bar association membership lists, is problematic. Such lists often include lawyers who are retired, inactive, or who work in government or non-law businesses, which overcounts the number of private practice lawyers who are available for hire. There is also a lack of rigorous methods to properly identify legal deserts, with most studies using arbitrary thresholds of lawyer rates per population. Missing from existing research is an estimate of the demand for lawyers compared to supply, what we call the lawyer gap rate, which should constitute the basis for any legal desert measure. The other limitation is contextual. Most studies assert that legal desert places are also marginalized or disadvantaged places, but these conclusions are either not empirically supported by data, or only apply to a small number of case study communities or to counties within a single state. To our knowledge, there is no existing research documenting legal desert marginalization across all counties in the U.S.

We seek to address these gaps to better inform research and policy on rural legal deserts. Our first objective is to empirically identify legal deserts across all non-metropolitan counties using more appropriate data and methods. We calculate a lawyer gap rate per 10,000 residents, based on the local demand for lawyers less the local supply, using employment in private practice law offices from the U.S. Census Bureau. We use gap rates instead of actual lawyer rates because the demand for legal services is often not just a function of population, but can also be a function of different legal demands based on complex socioeconomic conditions related to

greater urbanization. Using this measure, we conceptualize legal deserts as a shortage of attorneys, not as a lack of access to justice. We define the local area as non-metropolitan counties, with non-metropolitan defined as any county without a city of 50,000 or more people. We then use a statistical classification technique called latent profile analysis to group counties into several types of legal deserts based on lawyer gap rates. This objective answers the following research questions: How many lawyers is too few and thus qualifies as a legal desert? Are there different levels of severity of legal deserts? How prevalent are legal deserts? Where are they spatially located? Are there high legal places in rural America?

Our second objective is to statistically describe the spatial, demographic, economic, and social characteristics of legal deserts, compared to counties with average and high legal employment. In addition, we describe the differences in law office characteristics, such as the number of businesses and employment, firm size, and average earnings. This objective answers these research questions: Do lawyers earn less in legal deserts? Are legal deserts also marginalized or disadvantaged places? If so, in what way are they marginalized? Do they have different economies? Is social capital lower?

Our third objective is to critically review, and offer recommendations to improve, existing policies to address lawyer shortages in rural areas. We find that most state-level policies are not guided by sound data. For policies and programs to be effective, scarce resources should be directed to specific communities with a documented lawyer shortage. This answers the following research questions: What counties are most in need of lawyer assistance programs? Do these policies take into account any socioeconomic disadvantages in the community, if any? What policies are likely to work best in legal desert communities?

Learning more about rural legal deserts is important because the legal system works best when people have legal representation to assert their rights or to seek redress. Differential access to lawyers, whether it be a lack of attorneys or a lack of money to hire one, means unequal protection under the law. Rural people living in legal deserts may be at greater risk of wrongful incarceration, financial distress, or physical harm without an adequate number of lawyers in the community. For example, a lack of criminal defense attorneys or court-appointed public defenders may limit rural people's right to due process; or put people at risk of wrongful conviction or longer sentences. A lack of lawyers to pursue workers' compensation or disability claims puts rural people at risk of being health compromised and economically insecure. A lack of family law attorneys to settle divorce and child custody and support cases puts rural women and children at risk of physical and financial harm. In short, there is a need to rigorously document the prevalence and severity of rural legal deserts to better inform policies to ensure rural people are not at a legal disadvantage.

## I. BACKGROUND AND PREVIOUS RESEARCH

The majority of literature surrounding legal deserts lacks any tangible definition of what this term means, both conceptually and empirically. Often the issue is summed up as an absence of legal resources and attorneys, and that is as far as the definition goes.<sup>7</sup> In other instances, the issue is measured by the number of lawyers per 1,000 residents, and it is implied that less than 1 lawyer per 1,000 people is considered a legal desert.<sup>8</sup> This threshold comes from the American Bar Association's (ABA) *2020 Profile of the Legal Profession*, which mapped out the number of

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<sup>7</sup> See, e.g., Statz & Termuhlen, *supra* note 1; Amanda Claxton, *Liberty and Justice for Y'All: Allowing Legal Paraprofessionals to Practice Law to Reduce the Effects of Legal Deserts in Rural Georgia*, 74 MERCER L. REV. 340 (2022); Timothy A. Slating, *The ISBA's Rural Practice Initiative: Addressing the Problem of Legal Deserts in Illinois*, 47 S. ILL. U. L.J. 567 (2023).

<sup>8</sup> See, e.g., Paxton, *supra* note 1; Heath Hamacher, *Legal Deserts: Scarcity of Lawyers Threatens Justice in Many Rural Areas*, NORTH CAROLINA LAWYERS WEEKLY (2023), [link.gale.com/apps/doc/A770050467/AONE?u=iastu\\_main&sid=sitemap&xid=d9f0e997](https://link.gale.com/apps/doc/A770050467/AONE?u=iastu_main&sid=sitemap&xid=d9f0e997) (last visited June 24, 2024)

lawyers per 1,000 residents by county for every state in the U.S.<sup>9</sup> To our knowledge, this is the only study examining legal deserts across all counties in our nation. ABA collected data from each state's attorney licensing body to get a count of lawyers for each county.<sup>10</sup> However, the report acknowledged weaknesses in its data. Not all licensed attorneys are available to the public, as many work for the government, corporations, or non-profits, and not every state differentiates between active and inactive licensed lawyers.<sup>11</sup> Our methods were designed to account for these shortcomings and allow for a more narrowed approach in understanding rural legal deserts.

Another challenge noted by many scholars stems from the geographical barriers presented by the vast variation in the size of counties in the U.S. For example, San Bernardino County, California covers more than 20,000 square miles, which is about double the size of entire state of Massachusetts.<sup>12</sup> This story is similar in much of the U.S., especially in the Western states. Coconino County in Arizona and Nye County in Nevada are both greater than 18,000 square miles.<sup>13</sup> Counties of this size inevitably have variations in the communities within them. The largest city in San Bernardino County is San Bernardino, which is home to a population of over 200,000 people,<sup>14</sup> while the smallest city is Big River with a population a little over 1,000.<sup>15</sup> Despite being in the same county, these two cities are over 200 miles apart.

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<sup>9</sup> 2020 ABA profile of the Legal Profession, AMERICAN BAR ASSOCIATION (2020), <https://www.americanbar.org/content/dam/aba/administrative/news/2020/07/potlp2020.pdf> (last visited June 25, 2024).

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

<sup>12</sup> Lisa R. Pruitt, *Rural Access to Justice in the Golden State*, SSRN (2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3096179#paper-citations-widget](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3096179#paper-citations-widget) (last visited June 26, 2024).

<sup>13</sup> Rolando Y. Wee, *Largest Counties in the US by Area*, WORLDATLAS (2020), <https://www.worldatlas.com/articles/largest-counties-in-the-united-states-by-total-area.html> (last visited June 26, 2024).

<sup>14</sup> PLACE RANKINGS - DATA COMMONS, [https://datacommons.stanford.edu/ranking/Count\\_Person/City/geoId/06071?h=geoId%2F0641194](https://datacommons.stanford.edu/ranking/Count_Person/City/geoId/06071?h=geoId%2F0641194) (last visited June 26, 2024).

<sup>15</sup> *Id.*

This county is a prime example of the challenges in classifying a county as either rural or urban, as there are pockets of rural communities within vast urban counties.

Legal deserts have been most extensively studied in California, with a focus on access to justice and the challenges in working in large rural-urban mixed counties. University of California, Davis law school professor Lisa Pruitt uses a classification scheme of sub-county geographical units unique to California, called Medical Service Study Areas (MSSAs).<sup>16</sup> MSSAs were developed to determine areas of unmet need for medical services in California.<sup>17</sup> Every population center in an MSSA is located within 30 minutes of the largest, or central, population center.<sup>18</sup> Each MSSA is categorized as either urban, rural, or frontier.<sup>19</sup> Urban MSSAs have a population of between 75,000 and 125,000 people and reflect recognized community and neighborhood boundaries with similar demographic and socioeconomic characteristics.<sup>20</sup> Rural MSSAs have a population density of less than 250 people per square mile and no population center of more than 50,000 people.<sup>21</sup> The population density of frontier MSSAs is less than 11 people per square mile.<sup>22</sup> Going back to San Bernardino County, when broken down into MSSAs, the county has parts that are not only urban, but also rural and frontier as well.<sup>23</sup> In 2019, the California Commission on Access to Justice argued in a policy brief on attorney deserts “that the MSSA is an appropriate scale for studying the lawyer shortage because

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<sup>16</sup> Pruitt, *supra* note 12.

<sup>17</sup> Mitchell Lee, *Medical Service Study Areas 2010*, CALIFORNIA STATE GEOPORTAL (2022), <https://gis.data.ca.gov/maps/fe411f2d74494b89a74ab181b22fc8a1/about> (last visited Jul 3, 2024).

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> Medical Service Study Areas, CALIFORNIA STATE GEOPORTAL (2024), <https://gis.data.ca.gov/datasets/CHHSAgency::medical-service-study-areas/explore?location=35.954177%2C-116.824867%2C6.00> (last visited Jul 3, 2024).



one should need to travel no farther to access legal services than one travels to access medical services.”<sup>24</sup>

While the MSSAs account for large-size mixed rural-urban counties that are common in California, the attorney data from the bar association used in the analysis has limitations, as it does not indicate how many attorneys are available for private representation.<sup>25</sup> More importantly, MSSAs are only delineated for California, and therefore cannot be used to examine rural legal deserts at the national level.

A considerable amount of scholarship on rural legal deserts also delves into how the lack of adequate infrastructure, including reliable internet connectivity and transportation, exacerbates the issue, making it even more challenging for rural residents to access legal services.<sup>26</sup> This situation disproportionately affects marginalized communities within rural areas, such as low-income individuals, people of color, and the elderly, who may already face systemic barriers to accessing justice.<sup>27</sup> Consequently, legal deserts in rural areas contribute to systemic inequality in access to justice, perpetuating cycles of poverty and disenfranchisement.<sup>28</sup>

Poverty exacerbates the challenges posed by rural legal deserts in several ways. First, individuals living in poverty often lack the financial resources to afford legal representation, making them particularly reliant on free or low-cost legal services.<sup>29</sup> However, in rural areas where such services are scarce, the inability to access affordable legal assistance can leave

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<sup>24</sup> Attorney deserts policy brief - state bar of California, CALIFORNIA COMMISSION ON ACCESS TO JUSTICE (2019), <https://www.calbar.ca.gov/Portals/0/documents/accessJustice/Attorney-Desert-Policy-Brief.pdf> (last visited Jul 3, 2024).

<sup>25</sup> Pruitt, *supra* note 12.

<sup>26</sup> See, e.g., Statz & Termuhlen, *supra* note 1; Kelly V Beskin & Lisa R Pruitt, *A Survey of Policy Responses to the Rural Attorney Shortage in the United States*, ESCHOLARSHIP, UNIVERSITY OF CALIFORNIA (2021), <https://escholarship.org/uc/item/69j2c3b2> (last visited Jul 8, 2024).

<sup>27</sup> See, e.g., Statz & Termuhlen, *supra* note 1; California Commission on Access to Justice, *supra* note 24.

<sup>28</sup> See, Lisa R. Pruitt, Amanda L. Kool, Lauren Sudeall, Michele Statz, Danielle M. Conway & Hannah Haksgaard, *Legal Deserts: A Multi-State Perspective on Rural Access to Justice*, 13 *HARV. L. & POL'Y REV.* 15 (2018).

<sup>29</sup> California Commission on Access to Justice, *supra* note 24.

impoverished residents without the means to address critical legal issues, such as housing disputes, employment issues, or access to public benefits.<sup>30</sup> Second, poverty intersects with other factors such as limited education,<sup>31</sup> language barriers,<sup>32</sup> and lack of awareness about legal rights,<sup>33</sup> further complicating the situation for rural residents. Without adequate legal representation, individuals living in poverty may find themselves at a significant disadvantage when navigating complex legal processes, leading to increased vulnerability to exploitation or injustice.<sup>34</sup> While a lack of available services does have an impact on these rural communities, more attorneys are not the only avenue to explore when addressing these legal deserts.<sup>35</sup>

Although poverty is not the only cause or driving factor in the creation of rural legal deserts, it exacerbates the effects of not having adequate legal access. In essence, poverty deepens the impact of rural legal deserts by magnifying the barriers to accessing legal services as well as perpetuating cycles of inequality and disenfranchisement within rural communities.<sup>36</sup> For example, poverty often correlates with limited access to transportation and information technology, which are essential for accessing legal services, especially in rural areas with sparse infrastructure.<sup>37</sup> The cost of travel to reach legal aid centers or courts, coupled with the absence of reliable internet connectivity for accessing tele-legal services, can further isolate impoverished

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<sup>30</sup> Pruitt, et al., *supra* note 28.

<sup>31</sup> Statz & Termuhlen, *supra* note 1.

<sup>32</sup> Pruitt, et al., *supra* note 28; Zachery Newton, *Legal Deserts: Race & Rural America*, 26 MICHIGAN JOURNAL OF RACE & LAW (2021), <https://mjrl.org/2021/03/22/legal-deserts-race-rural-america/> (last visited Jul 8, 2024).

<sup>33</sup> Lisa R Pruitt & Andrew Davies, *Investigating Access to Justice, the Rural Lawyer Shortage, and Implications for Civil and Criminal Legal Systems*, ESCHOLARSHIP, UNIVERSITY OF CALIFORNIA (2021), <https://escholarship.org/uc/item/2763j35b> (last visited Jul 8, 2024).

<sup>34</sup> See, e.g., Pruitt, et al., *supra* note 28; Paxton, *supra* note 1.

<sup>35</sup> See generally Daria Fisher Page & Brian Richard Farrell, *One Crisis or Two Problems? Disentangling Rural Access to Justice and the Rural Attorney Shortage*, 98 WASH. L. REV. 849 (2023), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4475009](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4475009) (last visited Jul 9, 2024).

<sup>36</sup> See Pruitt, et al., *supra* note 28.

<sup>37</sup> Michele Statz, Robert Friday & Jon Bredeson, *"They Had Access, but They Didn't Get Justice": Why Prevailing Access to Justice Initiatives Fail Rural Americans*, 28 GEO. J. ON POVERTY L. & POL'y 321 (2021).

rural residents from the legal assistance they desperately need.<sup>38</sup> In short, addressing poverty alongside the structural challenges of rural legal deserts is crucial for promoting equitable access to justice and ensuring that no individual is left behind due to socioeconomic status or geographic location.

Another repercussion of legal deserts acknowledged by scholars is the cost to local governments and communities.<sup>39</sup> A report from 2017 found that twenty-three states required their local governments to bear at least some of the financial burden for indigent defense services.<sup>40</sup> When there are no local attorneys available, public or private, the services must be sourced from outside the county or judicial district, sizably raising the costs.<sup>41</sup> This results in a large financial burden on rural local governments whose budgets are already stretched thin.<sup>42</sup> It is rural taxpayers who shoulder the burden of these extra expenses, many of whom are older and on fixed incomes.<sup>43</sup> Defendants living in legal deserts can also experience longer pretrial jail stays,<sup>44</sup> and other delays in the representation they are entitled to.

Not only are criminal defendants deeply affected by the shortage of rural attorneys, but clients with civil legal issues are also largely impacted. Unlike criminal defendants, parties involved in civil legal matters do not have a constitutional right to an attorney.<sup>45</sup> According to a 2017 report by the Legal Services Corporation (LSC), 75% of rural residents encountered at least

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<sup>38</sup> See, e.g., Pruitt, et al., *supra* note 28; California Commission on Access to Justice, *supra* note 24.

<sup>39</sup> E.g., California Commission on Access to Justice, *supra* note 24; Pruitt & Davies, *supra* note 33.

<sup>40</sup> David Carroll, *Right to Counsel Services in the 50 States* (2017), <https://www.in.gov/publicdefender/files/Right-to-Counsel-Services-in-the-50-States.pdf> (last visited Jul 9, 2024).

<sup>41</sup> Pruitt & Davies, *supra* note 33.

<sup>42</sup> Lisa R. Pruitt & Beth A. Colgan, *Justice Deserts: Spatial Inequality and Local Funding of Indigent Defense*, 52 ARIZ. L. REV. 219 (2010), <https://arizonalawreview.org/pdf/52-2/52arizrev219.pdf> (last visited Jul 9, 2024).

<sup>43</sup> William Melhado, *In Rural Counties, Texas Law Puts Low-income Defendants at a Disadvantage*, THE TEXAS TRIBUNE (2023), <https://www.texastribune.org/2023/03/16/rural-texas-attorney-shortage-legislature/> (last visited Jul 9, 2024).

<sup>44</sup> *Id.*

<sup>45</sup> Hamacher, *supra* note 8.

one civil legal issue in 2016.<sup>46</sup> For low income rural people, 86% said they received inadequate or no help with their civil legal issues.<sup>47</sup> Legal aid programs do not have enough capacity to serve existing clients, let alone keep up with growing demand for legal services brought on by the COVID-19 pandemic and economic downturn. For example, LSC-funded legal aid organizations can only serve clients at or below 125% of the federal poverty line,<sup>48</sup> which accounts for 15.5% of the rural population nationally, totaling about 10 million rural residents. There are also other limitations on the type of clients these organizations can help, in regards to immigration and criminal defense.<sup>49</sup> In their 2021 study, Beskin and Pruitt point out that legal aid lawyers who serve rural communities are oftentimes not a part of the communities they serve, because legal services are often delivered using a hub and spoke model.<sup>50</sup> Lawyers are usually based in a larger city hub, while clients live in the smaller spoke rural communities.<sup>51</sup>

Overall, the delivery of justice is delayed in legal desert communities. In some rural places, it can take weeks or months to get an appointment with a lawyer.<sup>52</sup> A senior manager for one of North Carolina's legal aid programs said that "it is not unusual for staff members to drive an hour or more from their home office to meet with clients or get to court."<sup>53</sup> Even if a lawyer is available, in many instances they can be eliminated due to conflicts of interest because of the close-knit ties within rural communities.<sup>54</sup> These challenges, compounded with the lack of

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<sup>46</sup> The Justice Gap: Measuring the Unmet Civil Legal Needs of Low-income Americans, LEGAL SERVICES CORPORATION (2017), <https://www.lsc.gov/sites/default/files/images/TheJusticeGap-FullReport.pdf> (last visited Jul 9, 2024).

<sup>47</sup> *Id.*

<sup>48</sup> Beskin & Pruitt, *supra* note 26.

<sup>49</sup> Pruitt & Davies, *supra* note 33.

<sup>50</sup> Beskin & Pruitt, *supra* note 26.

<sup>51</sup> *Id.*

<sup>52</sup> Katie Stancombe, "Legal deserts" are widening in parts of Indiana." 41 INDIANAPOLIS BUSINESS JOURNAL (2020), [https://link.gale.com/apps/doc/A638476172/ITOF?u=iastu\\_main&sid=bookmark-ITOF&xid=0007facd](https://link.gale.com/apps/doc/A638476172/ITOF?u=iastu_main&sid=bookmark-ITOF&xid=0007facd) (last visited Jul 9, 2024).

<sup>53</sup> Hamacher, *supra* note 8.

<sup>54</sup> California Commission on Access to Justice, *supra* note 24.

attorneys in these areas, present unique challenges for cases involving two parties, such as divorce or child custody proceedings.<sup>55</sup> While one party may be able to acquire representation, the other may be left without access to services within the immediate community. The accumulation of these factors decreases the efficiency of how legal services are delivered, and can prevent many rural Americans from accessing the justice they deserve.

## II. DATA AND METHODS

### A. SPATIAL SCALE AND NON-METROPOLITAN DEFINITION

To identify rural legal deserts, our units of analysis include  $N=2,307$  counties in the 48 conterminous United States that are not part of a central metropolitan area. Counties are an ideal spatial scale because boundaries are relatively stable over time, there is a wide array of data available at that scale, it is an appropriate meso unit between neighborhoods and states, and because counties have a political structure that can effect change at the local level.<sup>56</sup> Core-based statistical areas (CBSAs) for 2013 are used to identify and exclude central metro counties, which the U.S. Office of Management and Budget defines as counties having a central city of 50,000 or more people.<sup>57</sup> This expands the official definition of non-metropolitan from 1,948 counties to 2,307 by including outlying counties under 50,000 people that are part of a metropolitan area linked by commuting patterns.

Our rationale for including outlying metro counties is that they tend to be more similar to larger non-metro counties in terms of population. For example, outlying metros have an average population of 27,500 and a population density of 74.2 people per square mile. Micropolitans

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<sup>55</sup> Stancombe, *supra* note 52.

<sup>56</sup> Katherine J. Curtis, Paul R. Voss & David D. Long, *Spatial Variation in Poverty-Generating Processes: Child Poverty in the United States*, 41 SOC. SCI. RES. 146-159 (2012).

<sup>57</sup> *Revised Delineation of Metropolitan Statistical Areas, and Combined Statistical Areas, and Guidance on Uses of the Delineations in these Areas*, OFF. OF MGMT. & BUDGET, EXEC. OFF. OF THE PRESIDENT, OMB BULL. NO. 13-01, [https://www.whitehouse.gov/wp-content/uploads/legacy\\_drupal\\_files/omb/bulletins/2013/b13-01.pdf](https://www.whitehouse.gov/wp-content/uploads/legacy_drupal_files/omb/bulletins/2013/b13-01.pdf).

(larger non-metro counties) are much larger with 42,500 people and a similar population density of 69.8. In short, our definition of non-metropolitan includes counties that do not contain a city or urban area of 50,000 or more people. We use the terms non-metropolitan and rural interchangeably, despite the latter having a specific definition by the federal government.<sup>58</sup>

## B. LEGAL VARIABLES AND STATISTICAL METHODS

To measure legal deserts, we use private-sector employment in law offices from 2022 vintage County Business Patterns (CBP) data, produced by the U.S. Census Bureau.<sup>59</sup> CBP data is collected from the federal government's Business Register, which is a list of about eight million business establishments taken from Census and other federal administrative data.<sup>60</sup> CBP provides annual counts of establishments, employees, and payroll for each county in the U.S. disaggregated by NAICS<sup>61</sup> industry codes. Data are reported by the physical location of the establishment. We use NAICS 54111 (Offices of Lawyers) to obtain the number of people working in private-sector law offices, which includes lawyers and other occupations that support the work of lawyers. This definition excludes ancillary legal services classified under different NAICS codes that include notaries (NAICS 54112) and other legal services (NAICS 54119) performing title abstracts, real estate settlements, paralegal services, process serving, and trial consulting.

Most extant research on legal deserts uses American Bar Association (ABA) membership lists, which provides appropriate and comprehensive data on lawyers as a profession. However,

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<sup>58</sup> Rural areas were defined in 2013 as any city or urban area under 2,500 people, or people living in the open countryside. See *Urban Area Criteria for the 2010 Census*, 76 FED. REG. 53030 (Aug. 24, 2011). <https://www.govinfo.gov/content/pkg/FR-2011-08-24/pdf/2011-21647.pdf>

<sup>59</sup> *County Business Patterns: Vintage 2022*, U.S. CENSUS BUREAU, <https://www.census.gov/programs-surveys/cbp/data.html>

<sup>60</sup> For example, two primary sources are tax filings from IRS and unemployment insurance records from the U.S. Labor Department.

<sup>61</sup> *North American Industry Classification System*, U.S. CENSUS BUREAU & OFF. OF MGMT. & BUDGET, EXEC. OFF. OF THE PRESIDENT, <https://www.census.gov/naics/>

the major limitation of ABA data is that it also includes lawyers who are not in private practice and are therefore generally unavailable for hire by the public. This would include lawyers working in other businesses unrelated to legal services, lawyers working at all levels of government, trained lawyers working in other non-law occupations, lawyers who are retired, and even persons with no legal training who may be students or other professionals. Including non-private practice lawyers would overstate the number of lawyers available for hire. Other minor limitations are that ABA data only includes lawyer headcounts, not the number of law offices or average earnings. Also, ABA data is a membership list that was never designed to be used for research purposes, and thus lacks a methodology to account for coverage and non-response error.<sup>62</sup>

CBP data addresses many of these limitations. It separates lawyers who work in private practice law firms from lawyers working in non-law office businesses. It counts both the number of law offices and the total number of employees working in said offices, including lawyers and needed legal support workers. It reports data by the physical business location of the law office, not the location where the lawyer resides, making it a better measure of where lawyers actually practice. Further, CBP disaggregates employment by detailed NAICS industry codes to permit measurement of law offices specifically. By contrast, other federal data programs aggregate law office employment into the broader professional services industry, which is the case with data from the Census American Community Survey<sup>63</sup> and the Bureau of Economic Analysis.<sup>64</sup> CBP is also wider in scope as it includes both self-employed and wage and salary workers, and it has less strict rules about data suppression for small population counties, many of which are rural.

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<sup>62</sup> Don A. Dillman, Jolene D. Smyth & Leah Melani Christian, *INTERNET, PHONE, MAIL, AND MIXED-MODE SURVEYS: THE TAILORED DESIGN METHOD 19-55* (4<sup>th</sup> ed. 2014).

<sup>63</sup> *American Community Survey*, U.S. CENSUS BUREAU, <https://www.census.gov/programs-surveys/acs>

<sup>64</sup> *Bureau of Economic Analysis*, U.S. DEPT. OF COMMERCE, <https://www.bea.gov/data/by-place-county-metro-local>

This is unlike data from the Bureau of Labor Statistics <sup>65</sup>, which excludes self-employed workers and has strict data suppression criteria. In our assessment, CBP data is the best source of information at the county-level about the number of law offices and law professionals in the U.S.

Legal deserts are measured using a lawyer gap rate consisting of two components: the actual lawyer rate in the county minus the sufficient lawyer rate given the county's level of urbanization. We do this because the need for lawyers may not be a linear function of population. Instead, it may be a function of more complex economies and social conditions linked to urbanization and proximity to metropolitan areas. For example, a county of 10,000 with a large city may have more demand for lawyers given the presence of corporations and foundations, financial and investment activities, and government agencies. By contrast, a county of 10,000 with no large city may have less demand as these organizations and activities are largely absent. The problem is that there is no consensus on what constitutes a sufficient number of or demand for lawyers at the county level. To address this, we calculate the average law office employment rates across nine rural-urban continuum codes (RUCCs) developed by USDA.<sup>66</sup> RUCCs classify each county based on its urban population and adjacency to metropolitan areas. We assume national averages for each RUCC is a reasonable approximation of lawyer demand.

The *lawyer gap rate* is calculated by taking law office employment per 10,000 residents minus the national average law office rate for the county's RUCC, based on data from CBP. Scores near zero indicate a sufficient number of lawyers given the county's urbanization, and that local demand for lawyers is being met. Negative scores indicate a deficit or shortage of

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<sup>65</sup> *Quarterly Census of Employment & Wages*, BUREAU OF LABOR STATISTICS, U.S. DEPT. OF LABOR, <https://www.bls.gov/cew/home.htm>

<sup>66</sup> *Rural-Urban Continuum Codes: Vintage 2013*, ECON. RES. SERVICE, USDA, <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/>



local lawyers compared to their national RUCC peers, and positive scores indicate a surplus of lawyers. Use of lawyer gap rates prevents the over-identification of legal deserts in rural counties with small populations, but also the under-identification of legal deserts in urban places with larger populations. For example, assume a rural county has a raw rate of 7 lawyers per 10,000 and the RUCC average is 6; and an urban county has a rate of 14 with a RUCC average of 18. Looking at raw rates one would assume the rural county has a greater lawyer deficit. However, gap rates show the rural county has a small surplus of 1 per 10,000, while the urban one has a deficit of -4.

Instead of choosing an arbitrary threshold to define legal deserts, we use a statistical classification technique to determine the thresholds and grouping based on patterns in the data. Legal deserts are identified using latent profile analysis (LPA), which is part of a broader technique called finite mixture models. LPA assumes the observed data forms a multivariate mixture collected from a number of mutually exclusive profiles, each with its own distribution.<sup>67</sup> LPA is used to create a classification of counties based on lawyer gap rates per 10,000 people in 2022. Like all classification techniques, LPA is sensitive to extreme scores that can result in a large number of classes with only a few cases. To minimize this, extreme scores are set to less extreme values at the 0.5 and 99.5 percentiles, roughly corresponding to  $\pm 2.6$  standard deviations above or below the mean. Although LPA is used for continuous indicators and latent class analysis for categorical ones, we refer to the profiles as classes, as this term is more common across disciplines. Refer to the appendix for technical details related to the LPA procedure.

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<sup>67</sup> Stephanie T. Lanza, Xianming Tan & Bethany C. Bray, *Latent Class Analysis with Distal Outcomes: A Flexible Model-Based Approach*, 20 STRUCTURAL EQUATION MODELING 1-26 (2013).

LPA offers some advantages over more common classification techniques like hierarchical cluster analysis.<sup>68</sup> To determine the appropriate number of classes, LPA uses statistical tests and model fit indices, whereas cluster analysis relies on subjective heuristics. Cluster analysis can result in very different solutions depending on the type of distance metrics and linkage rules used, whereas LPA relies on a single estimation technique. Most importantly, LPA estimates classification uncertainty using posterior probabilities obtained using Bayes theorem. By contrast, cluster analysis incorrectly assumes perfect certainty in classification, failing to recognize that cases may fit well into multiple clusters.

### C. SOCIOECONOMIC VARIABLES AND STATISTICAL METHODS

Our next task is to describe the demographic, economic, and social characteristics of counties across legal deserts and other legal classes. A multivariate general linear model (also called MANOVA) is used to explore unconditional mean differences across a number of variables using the Games-Howell test, which controls for unequal group sizes and unequal variances that can bias significance tests.<sup>69</sup> We select socioeconomic covariates of legal deserts using previous research in the law and rural social science literatures.<sup>70</sup> Data are primarily obtained from the Census Bureau's American Community Survey (ACS) 5-year estimates for 2018-2022,<sup>71</sup> unless otherwise noted. A full list of variables and data sources are presented in the appendix.

#### 1. Law Office Indicators

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<sup>68</sup> Grant B. Morgan, *Mixed Mode Latent Class Analysis: An Examination of Fit Index Performance for Classification*, 22 STRUCTURAL EQUATION MODELING 76-86 (2015).

<sup>69</sup> Richard A. Johnson & Dean W. Wichern, APPLIED MULTIVARIATE STATISTICAL ANALYSIS (6th ed. 2007).

<sup>70</sup> Cite studies here

<sup>71</sup> *American Community Survey: 5-Year Estimates 2018-2022*, U.S. CENSUS BUREAU, <https://www.census.gov/programs-surveys/acs/data.html>

*Law office indicators* are from CBP and include the lawyer gap rate per 10,000 that is used to identify legal deserts, lawyer employment rates per 10,000, and the number of law office establishments, employment, and earnings per job. We also calculate the average lawyer rates in adjacent counties to ascertain if the surrounding area also lacks lawyers, which is done using spatial lags calculated using geographic information systems (GIS) software.<sup>72</sup>

## 2. *Geographic and Economic Indicators*

*Geographic indicators* include U.S. interstate density per 100 square miles (linear road miles divided by area, multiplied by 100) and percent of land area in federal American Indian reservations, also calculated using GIS. Remoteness is measuring using topographic variation, as mountainous terrain results in fewer roadways that hinder travel. This variable is calculated by USDA and ranges from flat plains to high mountains across a 1-21 scale.<sup>73</sup> Rurality is defined using CBSAs that includes: (a) outlying metro counties under 50,000 people that are linked to central metropolitan areas by commuting, (b) micropolitan counties that contain a city of 10,000 to 49,999 people, and (c) rural counties that have no city over 10,000. *Demographic indicators* from ACS include population, population density per square mile, children, seniors, and population by race and Hispanic ethnicity.

*Economic indicators* include median household income and median earnings per job, income owned by the top 20% of households to measure inequality, person-based poverty rates at 100% and 150%, and labor force participation rates by age. The local job market is measured by the percentage of residents employed by major NAICS industries. Professional services include finance, insurance, real estate, professional and technical services, and information

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<sup>72</sup> Spatial lags calculate the average value in adjacent counties using Queen's contiguity weights, done in ESRI ArcMap 10.8.2.

<sup>73</sup> *Natural Amenities Scale*, ECON. RES. SERVICE, USDA, <https://www.ers.usda.gov/data-products/natural-amenities-scale/>.

services. Education services include both public and private schools serving K-12 and college students. Retail, leisure, and other services sectors include retail stores; arts, entertainment, recreation, accommodation, and food service businesses; and personal care services. Public administration is the executive, legislative, and judicial branches of government from the local to federal levels. It excludes public education, public health, and social services, which are classified elsewhere.

### *3. Social Risk, Housing, and Social Capital Indicators*

*Social risk indicators* include educational attainment of those who attended through middle school and those who attended high school without graduating, single-headed families with children, persons 5 years and older with a disability, and the noninstitutionalized population without public or private health insurance coverage. Immigration indicators include persons who are not U.S. citizens, persons 5 years and older who speak English as a second language, and households who have a limited ability to speak English. *Housing indicators* include households paying 30% or more of their income on rent, housing units with 10 or more units, housing units that are mobile homes, households living in crowded conditions where the housing unit has more people than rooms, households without a wired broadband internet subscription, as well as households without any internet subscription.

*Social capital indicators* include the key non-profit groups that help build social networks and mobile community resources. In addition to religious organizations, it also includes grantmaking, civic, social, business, and political organizations. Both are reported as employment per 10,000, taken from CBP. Employment is used instead of the number of establishments because the former measures the scale or size of the organization. Philanthropy is measured using charitable donations per tax return, for filers with taxable income, reported to the

IRS.<sup>74</sup> Civic participation is measured using household response rates to mailed Census Bureau forms; and by voter participation rates and votes cast for President by political party in 2020 from MIT.<sup>75</sup> For more information about our data imputations and data limitations, refer to the appendix.

### III. RESULTS

#### A. IDENTIFICATION OF NON-METRO LEGAL DESERTS

Our first objective is to identify non-metropolitan legal deserts at the county level using latent profile analysis (LPA). The procedure classified 2,307 counties into seven latent classes, each having a distinct distribution or profile of lawyer gap rates per 10,000 people. Table 1 reports the fit statistics. A statistically significant result for the Lo-Mendell-Rubin (LMR) adjusted likelihood ratio test supports the  $k$ -class solution over the  $k - 1$  solution. In other words, a significant test indicates a stopping point resulting in the best fitting model, and that reducing by one class results in poorer fit. The LMR test indicates a five or seven class solution, as does the sample-size-adjusted Bayesian information criterion that measures classification error. There are modest percent change error increases at stages four and six, indicating dissimilar classes have been merged and the prior class should be preferred. The relative entropy index measures classification accuracy and can be interpreted similar to a reliability coefficient, with values above 0.8 indicating good classification and values under 0.6 indicating poor classification.<sup>76</sup> All entropy measures range between 0.75 and 0.83, indicating good class separation and accuracy.

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<sup>74</sup> *Individual Income Tax Statistics by County: Vintage 2021, Statistics of Income*, INTERNAL REVENUE SERVICE, <https://www.irs.gov/statistics/soi-tax-stats-county-data> IRS data.

<sup>75</sup> *County Presidential Election Returns 2000-2020*, MIT ELECTION DATA & SCIENCE LAB, <https://doi.org/10.7910/DVN/VOQCHQ>.

<sup>76</sup> Collier, Z. and W. Leite. 2017. “*A Comparison of Three-Step Approaches for Auxiliary Variables in Latent Class and Latent Profile Analysis*,” 24 STRUCTURAL EQUATION MODELING 819-830 (2017).

We chose the seven class solution as it better separates counties with negative lawyer gap rates, identifying legal deserts of differing severity, which is the focus of our analysis. In addition, the seven classes had much greater internal consistency, as all counties had a posterior probability, or likelihood of correct classification, above 0.68 on at least one latent class. The mean lawyer gap rates for each class are:  $c1 = -8.15$ ,  $c2 = -5.60$ ,  $c3 = -2.92$ ,  $c4 = 1.13$ ,  $c5 = 6.52$ ,  $c6 = 11.79$ , and  $c7 = 20.51$ . Gap rates, including the lawyer rate per 10,000, are presented visually in Figure 1. Given that our focus is on legal deserts, not high legal employment, we merged classes five, six, and seven into a mid-high legal group for comparison purposes.

-----Table 1 about here-----

-----Figure 1 about here-----

Our analysis identifies 253 *critical legal desert* counties that have the most acute lawyer shortages in the nation. These places have  $-8.2$  fewer lawyers per 10,000 residents than their peers, representing a sizable legal deficit, as presented in Table 2. From the map in Figure 2, half of Nevada’s non-metro counties fall into the critical group, as do one-third of counties in New Mexico, and one-quarter of counties in Colorado, Michigan, and Oregon. Numerically, the majority of critical counties occur in Texas and Nebraska, but these states also have a large number of counties. Nationally, 11.0% of non-metro counties are critical legal deserts.

*Urgent legal deserts* have a deficit of  $-5.6$  lawyers per 10,000, and account for 17.9% of non-metro counties nationally, totaling 413 counties. Over one-third of non-metro counties in Arizona, Utah, and California face this legal problem. It is also an issue in over one-quarter of counties in the western states of Idaho and Washington, Missouri in the Midwest, and the southern states of Florida, Georgia, and Texas. Taken together, critical and urgent legal deserts occur in 28.9% of non-metro counties in the U.S., mainly concentrated in western states along

with a select few in the South and Midwest. *Emerging legal deserts* have a smaller lawyer gap, with an average shortage of only -2.9 per 10,000. Unlike critical and urgent legal deserts, emerging deserts tend to be clustered in the southern states, along with a handful of states in the Northeast and Midwest. These 518 counties make up 22.5% of all non-metro counties nationally.

On the other hand, we find 732 *average legal* counties that have an adequate number of lawyers, having 1.1 more per 10,000 residents than their rural-urban peers. States with the largest shares of average legal counties are New York and Maine in the Northeast, Alabama and Kentucky in the South, and Illinois and Iowa in the Midwest. The *above average legal* class has a larger surplus of lawyers relative to their peers. These 199 counties have 6.5 more lawyers than is needed in the county. Above average counties are numerically concentrated in Iowa, Nebraska, South Dakota, Kansas, and Texas. The latent class analysis found two *high legal* groups, one containing 109 counties with a lawyer surplus of 11.8 per 10,000, and the other even larger with a positive lawyer gap rate of 20.5, but only 83 counties fell into this group. Numerically, most high legal counties are in the Great Plains and the Northeast. We combine these two high legal groups to keep the focus on legal deserts and not high legal places, and to increase sample size and statistical power for our socioeconomic comparisons. In addition, we further combine the above average and high legal classes into a *mid-high* group reduce the amount of statistical comparisons to facilitate comprehension among readers, as well as to keep the focus on describing legal deserts.

-----Figure 2 about here-----

## B. CHARACTERISTICS OF LEGAL DESERTS

### 1. Law Office Characteristics

We find that critical and urgent legal deserts have far fewer lawyers and law offices, both in their county and in adjacent counties, than in non-legal deserts, but that lawyer earnings are roughly the same (see Table 2). In critical counties, there are only 5.1 employees working in 2.3 law offices, on average. In urgent legal deserts this doubles to 9.7 employees in 4.2 law offices, but this is still far below what is found in counties with more law offices. For example, average legal counties have 30 employees working in 9 law offices; and mid-high legal places have 50 workers in 12 offices. Expressed as a rate per 10,000 residents, the lawyer rate is 1.6 in critical and 3.2 in urgent legal deserts. This is far below the rate of 9.78 found in average counties and 21.8 per 10,000 in mid-high legal communities. Our analysis provides empirical confirmation of the ABA definition of 10 lawyers per 10,000 as an adequate staffing level.<sup>77</sup>

Additionally, we find that legal deserts are surrounded by counties that also suffer from a lawyer shortage, but the gaps are much smaller. For example, counties adjacent to critical and urgent deserts are only short –1.5 to –1.8 lawyers, smaller than the rates of –8.2 and –5.6 in the legal desert counties themselves. On the one hand, this suggests the legal desert issue can be addressed by having residents obtain services in nearby counties with more lawyers. On the other, residents living in legal deserts may still have difficulty finding a lawyer, as there is no extra capacity to take on additional clients in nearby counties.

Roughly half (51.8%) of critical legal deserts have no law office in their county. This poses a major problem for critical counties as it is much more difficult to establish a new law practice than to expand an existing one. It also means half of residents in critical deserts will have to travel outside their county for legal services, which given the large size of many counties can be a long drive. However, most non-metro counties have at least one law office, even urgent

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<sup>77</sup> The American Bar Association defines “legal deserts” using the threshold of 1 lawyer per 1,000, which is the same as 10 per 10,000.



and emerging legal deserts, which can provide an anchor to expand legal services. For example, only 16.7% of urgent deserts have no law offices in the county, and every emerging legal desert county has at least one law office. Despite this, to say that a county has a law office may give the false impression that it sufficiently addresses legal needs. The majority of rural law offices are small, with under 5 employees, especially in legal deserts where small offices account for over 95% of law practices. In many legal desert counties, there is only one law office with only one or two employees, being unlikely to sufficiently meet legal needs. Small practices may indicate fewer law specialties or expertise, and a limited range of legal services. Coupled with the small number of law offices overall, this may present conflict-of-interest issues in legal deserts where there are not enough firms to represent multiple parties. We only see relatively larger law offices of 5 to 19 employees in mid-high legal counties, but large firms over 20 employees are exceedingly rare in non-metro America.

Despite differences in law office sizes, we find that lawyers in rural legal deserts earn about the same as lawyers in other non-metro counties. Average earnings range from \$44,710 per job in emerging deserts to \$48,540 in critical deserts. We even find that earnings in critical counties are more generous than in average legal places, but this difference is not statistically significant. However, we do find that lawyers in mid-high legal counties earn significantly more at \$53,120. Even at the top pay ranges (75<sup>th</sup> percentile), lawyers in legal deserts earn about the same as others, ranging between \$54,520 and \$56,160 per job. Again, only the mid-high legal group earns significantly more at \$62,230. The findings suggest that pay differences do not fully account for why legal deserts exist. If earnings are roughly the same as in average legal places, there would be little financial incentive to avoid or relocate out of legal desert counties. It is likely that non-monetary factors determine whether a county has an adequate or shortage of

lawyers. On the other hand, our findings support the assertion that increased earnings do help explain why rural lawyers may be more attracted to mid-high legal communities.

-----Table 2 about here-----

## 2. *Demographics*

Legal deserts are sparsely populated communities that are ethno-racially diverse, although they are not remote in terms of transportation or topography, as shown in Table 3. On average, critical legal deserts have a population of 15,570 people with a low density of only 20.4 people per square mile, while urgent deserts are slightly larger at 20,670 people with nearly double the population density. Critical legal deserts are located in large counties with an average land area of 1,438 square miles, while other classes are much smaller statistically. By contrast, emerging legal deserts and average legal places have larger populations and densities. Mid-high legal counties are the exception, however, having a relatively low population of 23,330 but being very dense at 76.5 people per square mile. This is likely an artifact of small area counties in Northeast and Midwest states where county sizes range between 858 and 905 square miles.

Critical legal deserts are less tied to urban centers. Nearly 70% are rural counties that do not contain a city of 10,000 or more people, much larger than the share of around 50% for other classes. Further, not a single critical county is located in an outlying metro area. Even urgent and emerging legal deserts contain at least some suburban metro counties that are proximate to large urban cities. Legal deserts, especially critical ones, also tend to be more remote, being less connected to the nation's interstate system and located in more mountainous terrain. For example, in critical deserts there are only 6.3 linear miles of U.S. interstates in the county per 100 square miles; and 51.8% of counties are located in hilly or mountainous terrain. In average legal places, interstate access is 8.6 miles and 51.7% of counties are located on the plains, with

only 43.7% in mountainous areas. However, transportation and topography measures were not statistically significant.

Low population and remoteness pose several barriers to residents living in rural legal deserts. Large county land sizes mean residents have to travel long distances for legal and other services, even within their own county. As an example, the typical critical legal desert county is 2.5 times larger in land area than the typical county in the Midwest. Limited interstates and more mountainous topography likely mean longer travel times over two-lane and winding roads, coupled with a greater risk of driving accidents during nighttime or during inclement weather. Even if legal services exist in the county, barriers of distance mean that access would likely require vacation or unpaid time off work, scheduling and costs of daycare or dependent care, and transportation costs, assuming the person has a reliable vehicle. Further, the combination of distances and travel times with a low population base likely inhibits the establishment and stability of rural law offices. A law practice may struggle financially in a county with a small client base who must travel long distances at personal cost to visit their attorney. It is not implausible to think clients would either limit their meetings or forgo them altogether, limiting earnings of rural lawyers.

In terms of population characteristics, legal deserts are much more diverse in terms of race and ethnicity. The white non-Hispanic population in critical and urgent deserts ranges from 72% to 74%, statistically lower than emerging deserts and higher legal classes at 78% to 80%. Critical counties have an especially large share of Hispanic residents at 15.7% of the population. Native American reservations are more likely to live in critical and urgent legal deserts, although the effect is not statistically significant, nor do we observe larger shares of people reporting as Native American, Alaskan Native, or multiple races. Therefore, we lack enough evidence to

conclude that Native Americans disproportionately live in legal deserts. Further, we found no differences across other specific racial groups, including African Americans and Asians. In short, Hispanics are much more likely to live in and be disproportionately affected by legal deserts. On the other hand, mid-high legal counties are found to be the least diverse.

-----Table 3 about here-----

### 3. *Social and Housing Conditions*

Critical, urgent, and emerging legal deserts are all socially disadvantaged compared to mid-high legal places on most indicators (see Table 4). More residents in legal deserts have never attended high school (6.2% to 7.1% versus 5.2%); and many who attended high school did not graduate with a diploma or GED (12.6% to 13.5% versus 10.7%). There are also greater rates of physical and cognitive disabilities in legal deserts, with rates being around 17.5% compared to 16.0% in mid-high legal areas. About 11% of people in critical and urgent deserts are not covered by any health insurance plan whatsoever, private or public. Uninsured rates are lower in average and mid-high legal places at 9.6% and 8.9%, respectively. The combination of greater disability and more uninsured is especially worrisome in legal deserts. For the most part, legal deserts do not face a digital divide, as rates of no internet connectivity is about the same across classes (roughly 16-17% without any internet service). There is a difference, however, in access to high speed wired broadband services, with 55% of legal deserts households having broadband compared to 61% in mid-high places.

In terms of newcomers to the U.S., critical and urgent deserts have more English as a Second Language (ESL) speakers than in average to mid-high legal areas. Non-native English speakers account for 14.4% of households in critical places and 10.3% in urgent ones, compared to ESL rates between 7.0% to 7.4% in mid-high and average legal counties. Critical legal deserts

have significantly fewer U.S. citizens and more people who have limited English speaking abilities, especially when compared to average and mid-high legal communities.

For the most part, we find that legal deserts are less prone to some types of housing risks. Critical deserts have lower rent stress, with 30.1% of households paying 30% or more of their incomes on rent, compared to the 34.8% in mid-high legal areas. There are also fewer large apartment buildings containing ten or more units (2.1% to 2.4%) than in average and mid-high legal counties (3.2% to 4.1%). Both are likely due to the large differences in population densities – being 20 to 40 people per square mile in deserts versus 50 to 77 in places with more lawyers – that increases rents and necessitates large apartment complexes. However, we do observe some housing risks. Despite much lower population densities previously mentioned, crowded housing conditions are a problem in legal deserts. Between 2.5% to 2.7% of households live in homes that have more people than rooms, more than the 2.0% found in average and mid-high places, a small yet statistically significant difference. Also, about 16.0% of housing in legal deserts consists of mobile homes, greater than what is found in average and mid-high legal counties (11.6% to 13.7%).

Lawyers in legal deserts are less likely to deal with non-payment housing evictions or problems with landlords at large apartment complexes as these are relatively minor problems in these communities. More common legal issues related to housing include mobile home lot rental and eviction unrelated to rent, such as disputes over the rental agreement, utilities provided by the landlord, restrictions on renters' use of the lots, and eviction due to sale of the mobile home park itself – an increasingly frequent situation as many parks are sold and turned into single-family housing developments in rapidly growing western states.<sup>78</sup> Legal issues related to

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<sup>78</sup> Jennifer Sherman, *DIVIDING PARADISE: RURAL INEQUALITY AND THE DIMINISHING AMERICAN DREAM* (2021).

crowded housing may include disputes with multifamily or multigenerational households, or even disputes with local government over nuisance, off-street parking, or fire codes.

-----Table 4 about here-----

Social capital is defined as social networks, norms of reciprocity, and trust, and is typically conceptualized as having two forms.<sup>79</sup> Bonding social capital is characterized by relationships between people who are similar in some manner, based on strong affective ties that make them emotionally close. Bridging social capital reaches out to build connections between dissimilar people in the community, usually to achieve a common goal. Direct indicators of social capital at the county- level are limited, so we use indirect measures that are available nationally. Religious organizations create and maintain both bonding and bridging social capital. However, as we see in Table 5, critical and urgent legal deserts have fewer people employed in religious organizations that indicates lower bonding social capital (only 35 jobs per 10,000 people). By contrast, rates are much greater in average (45.0) and mid-high (48.6) legal counties.<sup>80</sup> Religious organizations serve an important social function in rural communities. Nearly every community has at least one congregation; and it is often the only building large enough to hold community meetings. In the smallest towns they are often the last and only community organization left in the community. Most rural residents belong as a member, thus providing durable social networks across different socioeconomic segments of the community. As a result, religious organizations can quickly mobilize people and resources to address community issues. For example, congregations often are first responders to community crises

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<sup>79</sup> Lindon J. Robison & Bryan K. Ritchie, RELATIONSHIP ECONOMICS: THE SOCIAL CAPITAL PARADIGM (2010).

<sup>80</sup> Andrew Hochstetler, David J. Peters & Shannon M. Monnat, *Prescription Opioid Resiliency and Vulnerability: A Mixed-Methods Comparative Case Study*, 47 AMER. J. CRIM. JUSTICE 651-671 (2022).

like a natural disaster, or to individual crises like an illness, fire, or job loss. For rural people seeking mental health services, their house of worship is often the first point-of-contact.

Despite the lack of congregations, most legal deserts have the same number of civic and social organizations that create bridging social capital. Examples of these groups include community foundations, service organizations, civic and social groups, as well as business and professional associations. Local philanthropy, another measure of bridging social capital, is very low in critical legal deserts at only \$449 per IRS tax return. There is more giving in urgent and emerging deserts (about \$635 per return), with mid-high legal counties giving the most at \$1,048 (although it is not statistically different due to wide variation among counties). Two measures of civic participation for which we have data are voting rates and household response rates to Census questionnaires. Critical and urgent deserts are much less likely to respond to government surveys than average and mid-high places, or even emerging deserts, indicating lower civic-mindedness. The picture is less clear with voting rates. People in urgent and emerging deserts had low voter turnout during the 2020 Presidential election at around 62%, while turnout was larger in critical deserts and mid-high legal places at 66%. In short, rural legal deserts have lower bonding and bridging social capital that limits the ability of these places to create trust, build networks, and raise funds to improve the community or be resilient to crises. This hampers grassroots efforts to retain or recruit not only lawyers to the community, but other needed professionals as well.

-----Table 5 about here-----

#### *4. Economic Conditions*

Turning attention to economic conditions, presented in Table 6, we find that legal deserts tend to be less well-off, have lower employment participation, and work in more injury-prone

jobs than in mid-high legal counties. Critical, urgent, and emerging deserts have statistically lower median household incomes and greater rates of near poverty (rates 150% above the poverty line), but only compared to mid-high legal places and not average ones. On the other hand, income inequality is lower, with less income concentrated among the top 20% of earning households in legal deserts. Fewer people work in legal desert places, compared to other non-metro counties. Labor force participation rates, or the percent of people eighteen years and older that are employed or unemployed but seeking work, is around 54% in legal deserts compared to a larger rate of 56% to 58% in average and mid-high legal counties. This finding holds when we exclude seniors over sixty-five years of age from the labor force.

Looking at the types of jobs people work, we find that residents in critical legal deserts are employed at much greater rates in agriculture (10.4%), transportation and utilities (6.5%), and mining (2.7%). These industries have some of the highest rates of workplace injury. Urgent and emerging deserts have a large share of residents employed in manufacturing between 12.8% and 13.8%, as well as in transportation and utilities at 6.2%, also injury-prone sectors. Public administration, or work in government operations unrelated to education or healthcare, is more common in critical and urgent legal deserts (between 6.2% to 6.7%).

Workers in legal deserts are employed in jobs where the risk of injury is high.<sup>81</sup> Not having enough lawyers means rural workers are less able to bring legal actions against employers to address workplace safety issues, to get compensation for a work-related injury or disability, or even a settlement for a wrongful or negligent workplace death. In the post-COVID-19 era, even safety from high-transmission viruses is an important worker concern, especially among those

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<sup>81</sup> *Injuries, Illnesses, and Fatalities (IIF) Statistics: 2022 Incidence Rates*, U.S. BUREAU OF LABOR STATISTICS, <https://www.bls.gov/iif/nonfatal-injuries-and-illnesses-tables/table-1-injury-and-illness-rates-by-industry-2022-national.htm>.



with preexisting health issues. For example, the average rate of non-fatal workplace injury is 3.0 per 100 full-time workers. In the agriculture sector, injury rates are 4.9 in animal production and 4.1 in crop production. In mining, underground coal production has an injury rate of 4.6 per 100 workers. In manufacturing, workers are most often injured in making wood products (5.3) and food products (4.6), such as meatpacking. Transportation workers who are couriers have an injury rate of 9.4, while warehouse workers have a rate of 5.5 per 100 employees. Somewhat surprisingly, public administration has an overall injury rate 4.4, with public safety workers being injured 7.8 times per 100 full-time employees. This last group includes workers at correctional facilities, which tend to be located in rural communities.

-----Table 6 about here-----

In summary, there are several reasons why residents in socially and economically disadvantaged places need lawyers. Lawyers are needed to assist persons with lower educational attainment in understanding complex contracts, or in making critical financial and legal decisions. People with disabilities need lawyers to ensure they receive the benefits and support to which they are entitled, such as disability benefits, workers compensation, unpaid medical claims, or even medical malpractice. Legal desert communities need lawyers with non-English languages skills, especially Spanish, to interpret important legal and financial documents for clients. Without having the advice of lawyers, there is the potential these populations may be taken advantage of, denied benefits, or enter into contracts that causes harm. The problem, however, is that legal deserts lack the social capital needed for the people to work together and raise funds to address attorney shortages in their community, perpetuating the problem.

#### IV. POLICY RESPONSES AND IMPLICATIONS

##### A. RECRUITMENT AND INCENTIVE PROGRAMS

As rural legal deserts have become a public policy concern in recent years, many states have taken steps to begin addressing this complicated issue. There has been some success with *rural attorney recruitment and incubator programs*, which involve paying or supporting qualified attorneys in various ways to practice in rural areas for a set amount of time. Several states have started these programs, including South Dakota,<sup>82</sup> Arkansas,<sup>83</sup> New Mexico,<sup>84</sup> Louisiana,<sup>85</sup> Montana,<sup>86</sup> North Dakota,<sup>87</sup> Ohio,<sup>88</sup> and Vermont.<sup>89</sup> In 2013, South Dakota was the first state to take this approach to addressing the shortage of attorneys in rural areas. The Rural Attorney Recruitment Program pays \$12,514 per year for 5 years to participating attorneys who agree to work in qualified rural areas.<sup>90</sup> The state government covers 50% of the incentive payment, the South Dakota Bar Association pays 15%, and the remaining 35% is covered by the county government where the attorney is practicing.<sup>91</sup> Arkansas uses a slightly different approach through their Bowen School of Law Rural Practice Incubator Program, which is an eighteen-month program that helps alumni launch practices in rural areas.<sup>92</sup> It provides the

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<sup>82</sup> *Rural Attorney Recruitment Program*, SOUTH DAKOTA UNIFIED JUDICIAL SYSTEM, <https://ujs.sd.gov/Attorneys/RuralRecruitment.aspx> (last visited Jul 31, 2024).

<sup>83</sup> *Rural Practice Incubator Project*, WILLIAM H. BOWEN SCHOOL OF LAW (2024), <https://ualr.edu/law/clinical-programs/rural-practice-incubator-project/#:~:text=The%20Bowen%20Rural%20Legal%20Incubator,and%20moderate%20income%20rural%20Arkansas> (last visited Jul 31, 2024).

<sup>84</sup> *Rural justice initiative*, NEW MEXICO COURTS (2024), <https://supremecourt.nmcourts.gov/rural-justice-initiative/> (last visited Jul 31, 2024).

<sup>85</sup> *Rural Justice Legal Incubator Project*, LOUISIANA STATE BAR ASSOCIATION, <https://www.lsba.org/LIFT/RuralJusticeIncubatorProject.aspx> (last visited Jul 31, 2024).

<sup>86</sup> *Rural Incubator Project for Lawyers*, MONTANA LEGAL SERVICES ASSOCIATION, <https://www.mtlsa.org/rural-incubator-project-for-lawyers/> (last visited Jul 31, 2024).

<sup>87</sup> *Rural Attorney Recruitment Program*, STATE OF NORTH DAKOTA COURTS, <https://www.ndcourts.gov/rural-attorney-recruitment-program> (last visited Jul 31, 2024).

<sup>88</sup> *Rural Practice Incentive Program*, OHIO DEPARTMENT OF HIGHER EDUCATION, <https://higher.ed.ohio.gov/initiatives/workforce-development/rural-practice-incentive-program> (last visited Jul 31, 2024).

<sup>89</sup> *Kim Velk, Going Solo? The VBA/VLGS Incubator Program is Open for Applications*, VERMONT BAR ASSOCIATION (2023), <https://www.vtbar.org/going-solo-the-vba-vlgs-incubator-program-is-open-for-applications/> (last visited Jul 31, 2024).

<sup>90</sup> Rural Attorney Recruitment Program, *supra* note 82.

<sup>91</sup> *Id.*

<sup>92</sup> Rural Practice Incubator Project, *supra* note 83.

attorneys with training, resources, and mentoring, as well as guidance and a \$6,000 stipend.<sup>93</sup> Participating attorneys must provide a minimum of 100 hours of pro bono services during the first year of the program.<sup>94</sup>

A number of states grant *loan repayment assistance* to lawyers who practice in rural and underserved areas. A major barrier that prevents lawyers from practicing in rural areas is the amount of debt incurred during law school, and the inability to pay said loans working in less profitable rural law offices. To overcome this barrier, Ohio's Rural Practice Incentive Program offers up to \$10,000 in loan repayment assistance annually, renewable for three to four years, to new attorneys working in underserved communities.<sup>95</sup> Lawmakers in Texas proposed two identical bills in their statehouse to provide up to \$180,000 in student loan repayments to criminal law attorneys who practice in a qualifying rural area for at least four years.<sup>96</sup> However, these bills never made it out of legislative committees during the 2023 session.<sup>97</sup>

## B. LICENSED LEGAL PARAPROFESSIONAL PROGRAMS

Many states have also experimented with granting limited licenses to paralegals and other professionals who are not trained lawyers, broadly called *licensed legal paraprofessionals* (LLPs). A number of states have tried LLP programs, including Arizona,<sup>98</sup> California,<sup>99</sup>

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<sup>93</sup> *Id.*

<sup>94</sup> *Id.*

<sup>95</sup> Rural Practice Incentive Program, *supra* note 88.

<sup>96</sup> Melhado, *supra* note 43.

<sup>97</sup> Reggie Smith, *HB 4487*, TEXAS LEGISLATURE ONLINE - 88(R) (2023), <https://capitol.texas.gov/BillLookup/History.aspx?LegSess=88R&Bill=HB4487> (last visited Aug 1, 2024).

<sup>98</sup> *Legal Paraprofessional Program*, ARIZONA JUDICIAL BRANCH, <https://www.azcourts.gov/cld/Legal-Paraprofessional> (last visited Jul 31, 2024).

<sup>99</sup> *California Paraprofessional Program Working Group*, THE STATE BAR OF CALIFORNIA, <https://www.calbar.ca.gov/About-Us/Who-We-Are/Archived-Committees/California-Paraprofessional-Program-Working-Group> (last visited Jul 31, 2024).

Colorado,<sup>100</sup> Minnesota,<sup>101</sup> New Hampshire,<sup>102</sup> Oregon,<sup>103</sup> Utah,<sup>104</sup> and Washington.<sup>105</sup>

However, such programs are often controversial, resulting in some states shuttering their LLP programs. In the State of Washington, three concerns were influential in the decision to disestablish their program: operating costs were higher than expected, the number of interested candidates was low, and negative perceptions from some attorneys who took issue with state bar association membership fees subsidizing LLPs whom competed for their clients.<sup>106</sup> However, the program was using less than 1% of the state bar association's annual budget and was projected to be financially self-sustaining by 2029.<sup>107</sup> Proponents of the LLP program in Washington also argued that the small size and assumed lack of interest was due to lack of marketing, rigorous entry standards, the long time needed to complete program requirements, and the fact that LLPs were limited to only practicing family law.<sup>108</sup>

Other critiques of LLP programs, specifically from attorneys, were concerns about increased competition that would reduce the number of clients and harm the financial stability of law offices. Another concern focused on the competency of LLPs in providing sound legal

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<sup>100</sup> *Colorado Supreme Court Approves Creation of Legal Paraprofessional License*, COLORADO JUDICIAL BRANCH (2023), <https://www.coloradojudicial.gov/media/press-release/colorado-supreme-court-approves-creation-legal-paraprofessional-license> (last visited Jul 31, 2024).

<sup>101</sup> *Legal Paraprofessional Pilot Project*, MINNESOTA JUDICIAL BRANCH, <https://mncourts.gov/lppp> (last visited Jul 31, 2024).

<sup>102</sup> *Membership Status Changes*, NEW HAMPSHIRE BAR ASSOCIATION (2024), <https://www.nhbar.org/about-the-bar/membership-status-changes#:~:text=Members%20who%20are%20otherwise%20not,bono%20legal%20services%20for%20the> (last visited Jul 31, 2024).

<sup>103</sup> *About Oregon's Licensed Paralegals*, OREGON STATE BAR, <https://www.osbar.org/lp/about.html> (last visited Jul 31, 2024).

<sup>104</sup> Catherine J Dupont, *Licensed Paralegal Practitioners*, UTAH BAR JOURNAL, [https://www.utahbar.org/wp-content/uploads/2023/08/LPP\\_App\\_2023.pdf](https://www.utahbar.org/wp-content/uploads/2023/08/LPP_App_2023.pdf) (last visited Aug 1, 2024).

<sup>105</sup> *Limited Practice Rule for Limited License Legal Technicians*, WASHINGTON COURTS (2024), [https://www.courts.wa.gov/court\\_rules/pdf/APR/GA\\_APR\\_28\\_00\\_00.pdf](https://www.courts.wa.gov/court_rules/pdf/APR/GA_APR_28_00_00.pdf) (last visited Jul 31, 2024).

<sup>106</sup> Jason Solomon & Noelle Smith, *The Surprising Success of Washington State's Limited License Legal Technician Program*, STANFORD CENTER ON THE LEGAL PROFESSION (2021), <https://law.stanford.edu/wp-content/uploads/2021/04/LLLT-White-Paper-Final-5-4-21.pdf> (last visited Oct 1, 2024).

<sup>107</sup> *Id.*

<sup>108</sup> *Id.*

advice, given the differences in education and experience compared to traditional lawyers.<sup>109</sup> Some have pointed to the lack of sufficient data showing that LLPs improve outcomes for pro se litigants, one of the primary reasons for establishing LLP programs.<sup>110</sup> Countering these critiques, supporters argue the role of LLP's is not to replace lawyers, but to help law offices reach more clients by increasing the number of legal professionals.<sup>111</sup> Supporters also argue that LLP's must follow procedures that ensures competent legal advice to given to clients for a narrow range of cases and within only certain areas of the law, with more complex cases being reserved for attorneys.<sup>112</sup>

One successful program is in Colorado, where the first LLPs are set to get their licenses in July of 2024.<sup>113</sup> Under Colorado's rules, LLPs can only assist in certain areas of the law, mainly family law. LLPs cannot present oral arguments or examine a witness in a hearing.<sup>114</sup> On the other hand, LLPs can accompany their clients in court to answer factual questions, complete and file standard pleadings, and represent clients in mediation.<sup>115</sup> The process to become a Colorado LLP is rigorous, as applicants must pass a written examination, meet certain character and fitness standards, have at least 1,500 hours of substantive law-related legal experience (with 500 of those hours being in Colorado family law), pass an ethics class and professional conduct exam, and complete continuing legal education requirements.<sup>116</sup> Each state has its licensing procedures and practice limitations for LLPs. However, the overall

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<sup>109</sup> Claxton, *supra* note 7.

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*

<sup>113</sup> Colorado Supreme Court Approves Creation of Legal Paraprofessional License, *supra* note 100.

<sup>114</sup> *Id.*

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

effectiveness of LLPs at addressing rural legal needs is still unknown, as such programs have not been evaluated.

### C. PRO BONO AND PRO SE PROGRAMS

Using *pro bono cases as Continuing Legal Education (CLE) credits* can be an effective way to enhance legal services in rural legal deserts. It incentivizes attorneys to engage in pro bono work, expands legal resources, and helps bridge the gap in access to justice for underserved communities. The states of New Hampshire,<sup>117</sup> Colorado,<sup>118</sup> and Tennessee<sup>119</sup> all offer this incentive to attorneys who take an appropriate amount of qualifying cases per year. Allowing attorneys to earn CLE credits for handling pro bono cases provides a tangible incentive for them to volunteer their time and expertise. This can attract more attorneys to take on pro bono work, especially those who might otherwise be reluctant due to the demands of maintaining their professional education requirements. Pro bono work can help fill the gap in legal services in rural areas where there may be a shortage of practicing attorneys.<sup>120</sup>

In addition, CLE credits for pro bono work allow attorneys to gain valuable experience in different areas of law. This not only benefits the attorneys by broadening their skill sets, but also ensures that rural clients receive competent legal assistance across a range of legal issues and specialties. This has the potential to expand the range of legal services offered in rural communities over the long-term, in areas such as bankruptcy, immigration, or workers’

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<sup>117</sup> *New Hampshire Supreme Court Order Aims at Addressing Attorney Shortage for Low-Income and Eligible Clients*, NEW HAMPSHIRE JUDICIAL BRANCH (2022), <https://www.courts.nh.gov/news-and-media/new-hampshire-supreme-court-order-aims-addressing-attorney-shortage-low-income-and#:~:text=Under%20the%20order%2C%20attorneys%20with,them%20in%20their%20criminal%20cases> (last visited Aug 1, 2024).

<sup>118</sup> *Rural Virtual Practice Program Handbook*, Colorado Attorney Mentoring Program, <https://coloradomentoring.org/wp-content/uploads/2017/04/Rural-Mountain-Practice-Program-Handbook-Final.pdf> (last visited Aug 1, 2024).

<sup>119</sup> *TN Faith & Justice Alliance*, JUSTICE FOR ALL TN (2022), <https://justiceforalltn.org/tn-faith-justice-alliance/> (last visited Aug 1, 2024).

<sup>120</sup> See generally 2020 ABA profile of the Legal Profession, *supra* note 9.

compensation law.<sup>121</sup> Pro bono work often involves collaboration with local legal aid organizations, courts, and community groups. Legal aid organizations in rural areas often operate with limited resources. By engaging attorneys through pro bono work, these organizations can better manage their caseloads and allocate their resources more effectively, enhancing their overall impact.

Given that around half of the civil litigants in the United States are self-represented or pro se,<sup>122</sup> many states have started providing *free legal advice services* to help these individuals better navigate the legal process. Thirty-three states and U.S. territories utilize the American Bar Association's Virtual Legal Advice Clinic website, where attorneys working pro bono answer civil legal questions posted online by users in their state free of charge.<sup>123</sup> States such as Colorado,<sup>124</sup> New York,<sup>125</sup> Minnesota,<sup>126</sup> and Texas<sup>127</sup> have implemented free self-help clinics and resource centers in places like courthouses, libraries, and local colleges. However, self-help does not provide the opportunity to speak to a lawyer or legal professional, only how to access information about the legal system.

The southern states of Georgia and Tennessee have drawn on their deeply rooted religious culture to reach more people in need. The Tennessee Faith and Justice Alliance acknowledges that many people turn to their faith communities in times of crisis.<sup>128</sup> Georgia's

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<sup>121</sup> *Id.*

<sup>122</sup> Claxton, *supra* note 7.

<sup>123</sup> *ABA Free Legal Answers*, AMERICAN BAR ASSOCIATION, <https://abafreelegalanswers.org/> (last visited Aug 1, 2024).

<sup>124</sup> *Self-Represented Litigant Coordinator Brochure*, COLORADO JUDICIAL BRANCH (2022), <https://www.coloradojudicial.gov/sites/default/files/2023-06/SRLC%20Brochure%203-23-22.pdf> (last visited 1AD).

<sup>125</sup> *Court Navigator Program*, NYCOURTS.GOV, <https://ww2.nycourts.gov/court-navigator-program-33006> (last visited Aug 1, 2024).

<sup>126</sup> *Self Help Clinic*, MITCHELL HAMLINE SCHOOL OF LAW, <https://mitchellhamline.edu/self-help-clinic/> (last visited Aug 1, 2024).

<sup>127</sup> *Rural Legal Aid Clinics*, TEXAS LEGAL SERVICES CENTER, <https://www.tlsc.org/ruraleclinics> (last visited Aug 1, 2024).

<sup>128</sup> *TN Faith & Justice Alliance*, *supra* note 119.

Justice for All Strategic Plan includes creating a curriculum to train religious leaders on legal issues under the direction of the Accreditation Commission for Clinical Pastoral Education (ACPE).<sup>129</sup> This will allow religious leaders to better serve their congregation's legal needs.<sup>130</sup>

Another innovative solution a few states have introduced is the use of *mobile legal clinics*, where large buses are used to transport attorneys to rural places to dispense free advice. The Legal Services of Northwest Minnesota Justice Bus is a mobile legal aid office that provides legal information, resources, and advice.<sup>131</sup> Similarly, the Tennessee Justice Bus is a mobile law office that provides various technologies and on-the-spot legal help to rural and underserved communities.<sup>132</sup> South Carolina's Palmetto LEADER is also a mobile law bus, but it is staffed by pro bono attorneys and South Carolina law students who provide a variety of free legal services to the public.<sup>133</sup> The advantage of mobile legal clinics is the ability to provide legal advice in communities with poor internet access or limited transportation.

#### D. LAW SCHOOL PROGRAMS

*Law school curricula and education* has a role to play in addressing rural legal deserts. For example, some law schools have begun to offer classes on rural legal issues.<sup>134</sup> These classes provide critical insights and skills that can enhance law students' ability to address the unique challenges faced by rural people. Rural areas often face specific legal issues that differ

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<sup>129</sup> *Georgia Justice for all Strategic Action Plan*, NATIONAL CENTER FOR STATE COURTS (2017), [https://www.ncsc.org/\\_data/assets/pdf\\_file/0020/25517/ga-jfa-plan.pdf](https://www.ncsc.org/_data/assets/pdf_file/0020/25517/ga-jfa-plan.pdf) (last visited Aug 1, 2024).

<sup>130</sup> *Id.*

<sup>131</sup> *Justice Bus*, LEGAL SERVICES OF NORTHWEST MINNESOTA (2023), <https://lsnmlaw.org/justice-bus/> (last visited Aug 1, 2024).

<sup>132</sup> *The Tennessee Justice Bus*, JUSTICE FOR ALL TN (2024), <https://justiceforalltn.org/justice-bus/> (last visited Aug 1, 2024).

<sup>133</sup> *The Palmetto LEADER*, UNIVERSITY OF SOUTH CAROLINA, [https://sc.edu/study/colleges\\_schools/law/student\\_life/palmettoleader/#:~:text=The%20Palmetto%20LEADER%20is%20a,those%20who%20are%20otherwise%20unable](https://sc.edu/study/colleges_schools/law/student_life/palmettoleader/#:~:text=The%20Palmetto%20LEADER%20is%20a,those%20who%20are%20otherwise%20unable) (last visited Aug 1, 2024).

<sup>134</sup> Purdue News Service, *Concord Law School Launches New Class to Address Rural Legal Issues*, PURDUE UNIVERSITY (2023), <https://www.purdue.edu/newsroom/releases/2023/Q2/concord-law-school-launches-new-class-to-address-rural-legal-issues.html> (last visited Aug 1, 2024).



from those in urban settings, such as limited access to legal resources, different economic conditions, and unique social issues. Classes focusing on rural legal issues can equip future attorneys with knowledge about these challenges, including property law, agricultural law, family law, and access to justice. Rural areas may have distinct cultural and social norms. Courses that address rural legal issues can help law students understand these cultural contexts, improving their ability to communicate effectively and sensitively with clients from rural backgrounds.

For students interested in practicing law in rural areas, these classes can provide insights into what working in such settings can entail. This can include understanding the logistics of rural practice, the nature of client interactions, and the available resources and support systems that set practicing in a rural area apart from an urban one. Knowledge gained from these classes can help students understand how to contribute to closing the access gap in rural areas. They can become advocates for increased legal services, better resource allocation, and innovative solutions to the challenges faced by rural communities.<sup>135</sup> Understanding the broader context of rural life and its legal implications fosters empathy and a deeper understanding of clients' needs and struggles. This perspective is critical for providing compassionate and effective legal representation.

Another popular type of program used to address the rural lawyer shortage is *rural legal fellowships and externships*. These can be found at the national level through the Legal Services

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<sup>135</sup> *Id.*

Corporation (LSC),<sup>136</sup> as well as state programs in Colorado,<sup>137</sup> Illinois,<sup>138</sup> Indiana,<sup>139</sup> Iowa,<sup>140</sup> Kansas,<sup>141</sup> Maine,<sup>142</sup> and Minnesota.<sup>143</sup> The LSC-funded Rural Summer Legal Corps provides law students with the opportunity to work on civil legal needs in rural communities.<sup>144</sup> After attending a two-day training in Washington, D.C., law students spend eight to ten weeks over the summer at LSC grantee host sites, where they complete a minimum of 300 hours of service.<sup>145</sup> Law students who complete the program receive a \$7,000 stipend. Since 2016, over 200 law students have been able to help rural communities through this initiative.<sup>146</sup>

#### E. COMMUNITY EDUCATION PROGRAMS

*Legal consciousness* is another crucial factor to consider when addressing rural legal desserts. Legal consciousness involves people’s awareness, understanding, and overall attitudes towards the law and differing legal institutions. As previously discussed, access to legal services is scarce in rural areas, so understanding what legal resources are available and how they can be utilized is vital. If rural residents have a limited understanding of their legal rights or how to address their legal issues, their economic and personal circumstances could significantly

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<sup>136</sup> *Rural Summer Legal Corps*, LEGAL SERVICES CORPORATION (2024), <https://www.lsc.gov/initiatives/rural-summer-legal-corps> (last visited Jul 31, 2024).

<sup>137</sup> *The Greater Colorado Fellowship Program*, OFFICE OF THE ALTERNATE DEFENSE COUNSEL, <https://www.coloradoadc.org/public-information/greater-colorado-programs> (last visited Jul 31, 2024).

<sup>138</sup> Slating, *supra* note 7.

<sup>139</sup> Megan Hill, *State Level Responses to the Rural Attorney Shortage*, INDIANAPOLIS BAR ASSOCIATION (2022), <https://www.indybar.org/?pg=GovernmentPracticeNews&blAction=showEntry&blogEntry=79790> (last visited Jul 31, 2024).

<sup>140</sup> *Rural practice*, DRAKE UNIVERSITY, <https://www.drake.edu/law/careers/resourcesforstudents/ruralpractice/> (last visited Jul 31, 2024).

<sup>141</sup> *Rural Externship Program*, WASHBURN UNIVERSITY SCHOOL OF LAW, <https://www.washburnlaw.edu/students/externship/hansen.html> (last visited Jul 31, 2024).

<sup>142</sup> *Maine Law’s Rural Lawyer Project Awarded Three-Year Grant From the Betterment Fund*, UNIVERSITY OF MAINE SCHOOL OF LAW, <https://www.mainelawcommunity.org/s/184/16/interior.aspx?sid=184&gid=1&pgid=1290> (last visited Jul 31, 2024).

<sup>143</sup> *2024 Summer Fellow Application Process*, MINNESOTA JUSTICE FOUNDATION (2023), <https://mnjustice.org/our-programs/summer-fellowship-program/students-become-a-summer-fellow/> (last visited Jul 31, 2024).

<sup>144</sup> Rural Summer Legal Corps, *supra* note 136.

<sup>145</sup> *Id.*

<sup>146</sup> *Id.*

worsen.<sup>147</sup> By contrast, if rural residents have a strong sense of legal consciousness, it could empower individuals to advocate for themselves or seek services that are needed depending on the legal situation.<sup>148</sup>

Legal consciousness helps bridge the gap between legal service providers and the community. If legal professionals understand the specific challenges and limitations faced by residents in rural areas, they can tailor their services and outreach efforts more effectively. This might include offering mobile legal clinics, remote consultations, or community education programs as previously expanded upon. Understanding the legal consciousness of rural populations can inform policymaking and the development of legal aid programs. It helps identify gaps in knowledge and access, guiding the creation of more effective and relevant legal services. Policymakers and legal practitioners can design interventions that address specific needs and challenges faced by rural communities. Building upon legal consciousness can also enhance trust in legal institutions.<sup>149</sup> When rural residents understand and see the relevance of legal systems and services to their lives, they are more likely to engage with and trust these establishments. This trust is vital for effective legal processes and community cooperation.

## CONCLUSION

The first objective of our paper is to empirically identify legal deserts using law office data from the U.S. Census. Applying statistical classification techniques to lawyer gap rates, or the difference between the demand and local supply of lawyers, we come to the following conclusions. First, there are different types of rural legal deserts based on the severity of the shortages. In other words, there is no binary definition of a legal desert, rather it falls along a

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<sup>147</sup> Pruitt & Davies, *supra* note 33.

<sup>148</sup> *Id.*

<sup>149</sup> *Id.*

continuum. Critical legal deserts have the most severe attorney shortages in non-metropolitan America, with –8.2 fewer lawyers per 10,000 residents than what is needed in the community. In urgent legal deserts the lawyer gap is slightly smaller, albeit still large, at –5.6 per 10,000. We also identify a set of emerging legal deserts where modest lawyer shortages (–2.9 gap) may worsen without state and local interventions. It is important that legal deserts are not treated as monolithic. To effectively address legal deserts, policies need to be designed and implemented to take into account the severity of the problem. What may work well in an emerging legal desert may not in a critical one.

Second, legal deserts affect many rural communities. Over half of non-metro counties fall into one of our three legal desert classes. Of that amount, about 30% are critical and urgent legal deserts that are most in need of policy interventions. However, these counties are spatially concentrated in a few states. Legal deserts are disproportionately located in southwestern states (Arizona, Nevada, New Mexico, and Utah), the large states of California and Texas, the Midwest states of Michigan and Missouri, and the southern states of Florida and Georgia. We recommend that regional policies and programs need to be developed to take into account the unique circumstances and cultures of these areas. This could be accomplished by having legal desert programs be developed for and coordinated by USDA’s regional rural development centers, which facilitate the creation of evidence-based community programs.<sup>150</sup>

Third, we find the American Bar Association’s (ABA) definition of a legal desert, which is less than 1 lawyer per 1,000 residents, to be far too high for use in research and policy. The ABA threshold matches the rate for our average legal class, meaning the 1 per 1,000 rate only distinguishes between average and below average lawyer counties. This threshold is insufficient

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<sup>150</sup> Eg. *Regional Rural Development Centers*, USDA, <https://www.nifa.usda.gov/grants/programs/community-economic-development/regional-rural-development-centers>

to identify the severity of legal deserts. For example, in our analysis the lawyer rates are only 0.2 per 1,000 for critical legal deserts, 0.3 for urgent ones, and 0.6 for emerging deserts. Using the higher ABA rate will not only overstate the problem by including counties that do not have a lawyer shortage, but it will also make it more likely that limited resources are not directed to communities with a demonstrated need for legal services. It is imperative that the de facto definition of a legal desert be lowered. Based on our findings, we recommend a new threshold of 0.5 lawyers per 1,000 be used to identify rural legal deserts.

Fourth, we find that not all of rural America suffers from an attorney shortage. On the contrary, we find that 192 non-metro counties have a high legal presence, with a large surplus of 15.6 more lawyers per 10,000 residents than what is needed in the community. However, this only accounts for 8.3% of non-metro counties nationally, and most are concentrated in a few states in the Northeast where there are very few legal deserts. Two states exemplify the uneven distribution of lawyers. Utah and South Dakota have both a large number of legal deserts and high legal counties. This opens some opportunities to address legal shortages within those states, by connecting relevant organizations in high legal counties with those in legal deserts to find innovative ways to provide services.

The other two objectives of our paper are to describe law offices and community conditions in rural legal deserts, and to review and recommend changes to existing policies to address rural legal deserts. Our fifth finding is that legal deserts have far fewer lawyers and law offices. On average, legal deserts have two to four law offices in the county, and over 95% are small firms with less than five employees. In critical legal deserts, half of the communities have no law office in the county, and most legal deserts are surrounded by counties that also have a lawyer shortage. In other words, there is a critical need for more rural legal professionals.

To address legal needs in rural areas, we recommend licensed legal paraprofessional (LLP) programs as a long-term solution, based on our review of existing policies. LLPs can address the most common legal questions and proceedings locally, with more complex issues referred to an attorney in a nearby county. The time and cost of becoming an LLP is small compared to becoming a lawyer, reducing the need to earn a high salary to pay off student loan debt, a major challenge for many rural attorneys. Potential LLPs could be recruited from within legal desert communities, where they are more likely to stay long-term due to social and family connections. Further, local LLPs will have existing social networks to build trust among clients, will understand the local culture and community issues, and may well have needed language skills. These are advantages that an outside attorney would be hard-pressed to overcome in the near-term.

Our sixth finding is that lawyers in legal deserts earn about the same as lawyers in other non-metro counties, counter to existing research showing a wage gap. Financial incentives, such as rural attorney recruitment and loan repayment programs, are popular in many states. However, our analysis shows that pay differences do not fully account for why legal deserts exist, which suggests that other non-monetary factors determine whether a county has an adequate or shortage of lawyers. In terms of policy, this means rural attorney recruitment and loan repayment programs may not be as effective as people believe, as the pay differential is insignificant. We recommend that future research and policy identify all barriers to rural law practices, not just financial ones.

Seventh, we find that legal deserts are distant, disconnected, diverse, and disadvantaged – but not poor or housing insecure. Consistent with prior research, legal deserts tend to have small populations spread across large counties with few interstates. This hampers the ability of mobile

legal clinics to address rural legal issues. Remoteness means long travel times for volunteers, safety issues with travel on two-lane and winding roads, and greater costs for fuel and maintenance with high mileage trips. Residents in legal deserts also have less access to high-speed broadband internet connections. This means that the legal desert issue cannot be solved solely through tele-legal services, such as the ABA's Virtual Legal Advice Clinic, or other free legal advice websites. Further, virtual services often do not offer adequate translation in other languages, as will be discussed next.

Legal deserts have large shares of persons of color, especially Latinos, many who are non-native English speakers and some who can only speak limited English. Many residents have not completed high school, and there are even people who have never attended high school. This hampers rural legal fellowship and externship programs, as many law students will not have the language or cultural competencies to interact with these populations. This is not just a matter of knowing Spanish and Latino culture anymore. Rural America has become more diverse in its diversity, with large gains in people from southeast Asia and Africa. Engagement with people of color, who may have uncertain immigration status, typically requires a large invest of time in order to build trust in the community. Most law student externships are for short durations, leaving little time to build rapport and trust persons of color, limiting the effectiveness of these legal assistance programs. In addition, law students engaging in community work also need to understand how to communicate and explain complex legal issues to persons without high school educations or without an understanding of U.S. legal and government systems, requiring additional training and sensitivity.

There are high rates of disability in rural legal deserts, and many lack health insurance, even public insurance like Medicaid or Medicare. Further, people in legal deserts work in

industries with some of the highest rates of workplace injuries, particularly agriculture, transportation, utilities, and mining. These are specific areas of the law that are unable to be served effectively by LLPs or law student interns. We recommend that states consider awarding continuing legal education (CLE) credits to lawyers providing pro bono work on injury and disability cases in legal deserts. CLE can be a mechanism to connect specialized lawyers with rural residents who need their services for cases related to workplace injury, workers' compensation, wrongful death, and disability claims. One issue is that the demand for such services may outstrip the number of lawyers willing to do this pro bono, but nonetheless, it is a creative way to address some of the needs in legal deserts.

Counter to the literature, we find that rural legal deserts are no poorer than other non-metro counties. Rates of poverty and near poverty (150% of poverty line) are statistically the same, except that near poverty is lower in high legal places. This is an important counterfactual to nearly all previous research in this area, which documents high poverty in legal deserts. There are two potential explanations for this. One is that findings from prior work only applied to a small number of case study legal desert communities, and not all counties in the U.S., as our study has done. Also, some prior work uses qualitative methods that do not statistically test for differences in poverty using a group of comparison counties. The other explanation has to do with government responses to the COVID-19 pandemic. Stimulus payments and enhanced unemployment benefits increased incomes across the U.S., resulting in lower poverty rates during this time.<sup>151</sup> Our analysis uses 2022 vintage data, so it is possible that poverty differences were temporarily reduced due to COVID payments.

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<sup>151</sup> Danilo Trisi, *Expiration of Pandemic Relief Led to Record Increases in Poverty and Child Poverty in 2022*, CENTER ON BUDGET & POL. PRIORITIES, (2024), <https://www.cbpp.org/sites/default/files/6-10-24pov.pdf>



Lastly, we find that rural legal deserts have some capacity to promote legal consciousness in their community, even in the absence of an attorney. Drawing on the community's social capital, local organizations can play a role in improving people's awareness of their legal rights, the legal process, and how to access legal services – what we term legal consciousness. While this does not increase the number of legal professionals per se, it would protect residents from making uninformed decisions that may cause them harm. We recommend that state university extension systems, state bar associations, and other relevant groups develop legal consciousness curricula that can be delivered to local leaders, who in turn would train people in their own community using a train-the-trainer model. Local training could be delivered by civic and social groups or by religious organizations, as most legal deserts have at least a few of these local groups. This would allow rural legal deserts to have some degree of agency in addressing the problem locally, and perhaps even start larger conversations about legal access issues and potential solutions in their community.

In conclusion, this paper demonstrates that there are different severities of lawyer shortages, proposes a new threshold to identify legal deserts, identifies where they occur across rural America, and documents if, and how, such places are disadvantaged. Our approach addresses issues in prior research related to poor measurement of lawyer shortages and a lack of rigorous methods to identify legal deserts. We also review current programs that seek to address legal deserts, and offer recommendations on how the program could be improved upon, given what we know from our analysis. One limitation of our work is not knowing the type of legal specialties practiced in law offices, so we are unable to ascertain if the community offers a full range of legal services. This matters because a county might have an adequate number of lawyers, but may be missing lawyers in key areas, resulting in a different type of legal desert

based on comprehensiveness of legal services and not on counts of legal professionals.

Measuring comprehensive legal services at the county-level nationally is an important next step in future research on rural legal deserts.

FIGURE 1: LAWYER GAP AND LAWYER RATES PER 10,000 BY LATENT CLASSES

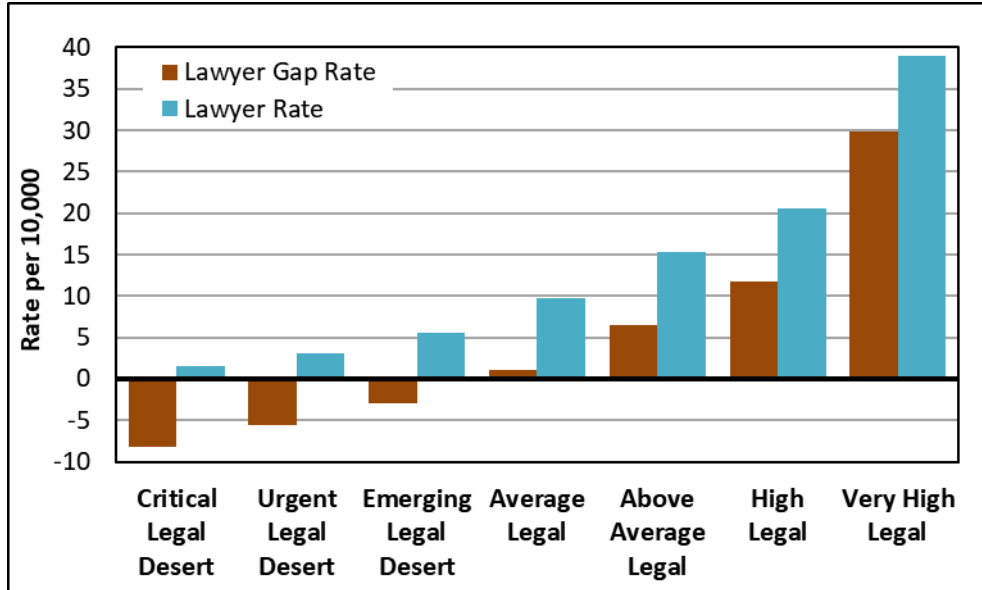
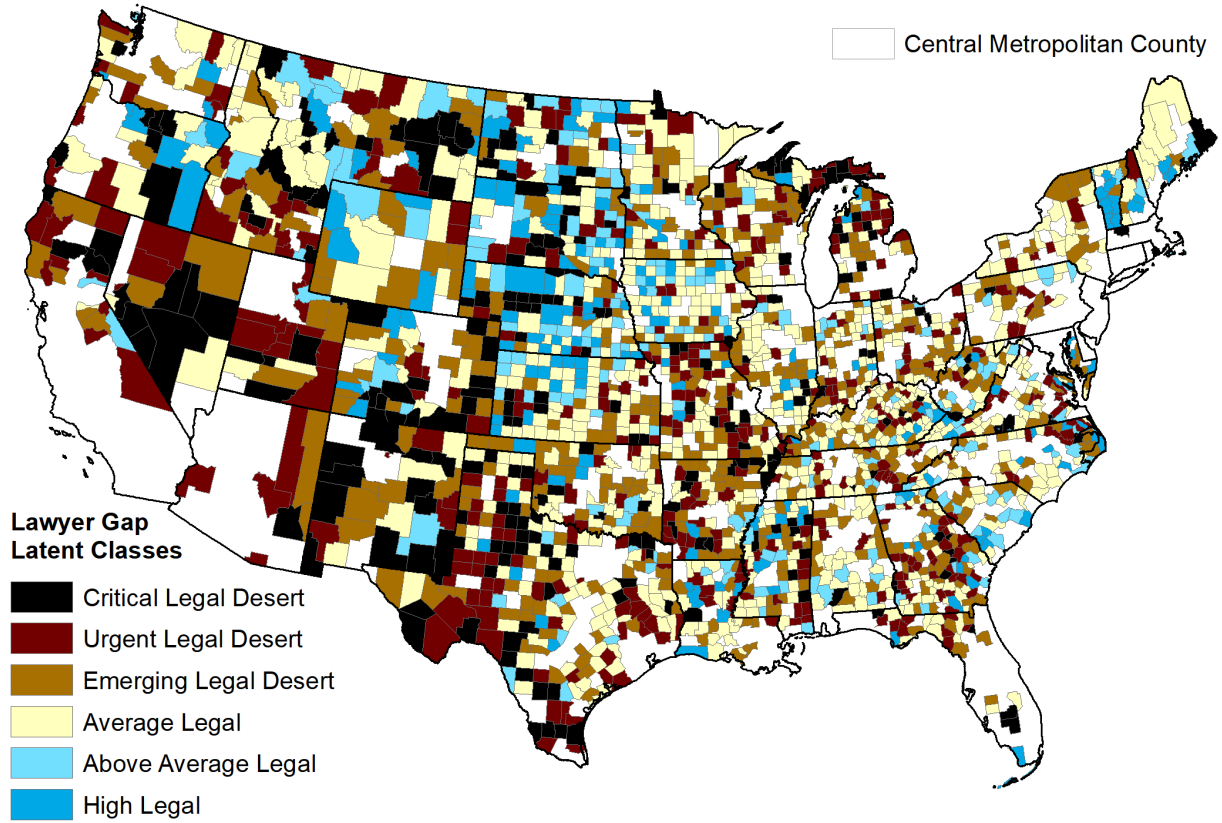


FIGURE 2: LAWYER GAP CLASSIFICATION FOR NON-METROPOLITAN COUNTIES



Note: Based on latent profile analysis of lawyer gap rates per 10,000 in 2022 for  $N=2,307$  non-metropolitan counties in the conterminous U.S.

TABLE 1: FIT STATISTICS FROM LATENT PROFILE ANALYSIS

Number of Classes	BIC-SSA	BIC Percent Change	Relative Entropy	LMR Test	
				<i>Value</i>	<i>P</i>
10	14,952.11	0.01%	0.801	10.84	0.301
9	14,954.45	0.02%	0.826	9.53	0.173
8	14,960.93	0.04%	0.801	2.90	0.616
7	14,951.73	-0.06%	0.787	22.66	0.009
6	14,966.65	0.10%	0.735	13.14	0.325
5	14,971.44	0.03%	0.750	20.93	0.016
4	14,984.52	0.09%	0.775	45.05	<.001
3	15,023.26	0.26%	0.830	140.62	<.001
2	15,163.72	0.93%	0.938	581.74	<.001
1	15,773.67	4.02%	n.a.	n.a.	n.a.

Notes: BIC-SSA = sample-size adjusted Bayesian information criterion; LMR = Lo-Mendell-Rubin test. Analysis of  $N=2,307$  non-metropolitan counties in the conterminous U.S.

TABLE 2: LAW OFFICE INDICATORS IN 2022

	Critical Legal Deserts <i>N</i> =253	Urgent Legal Deserts <i>N</i> =413	Emerging Legal Deserts <i>N</i> =518	Average Legal <i>N</i> =732	Mid-High Legal <i>N</i> =391
<i>Legal Desert Indicators</i>					
Lawyer gap rate (per 10k)	-8.15	-5.60 <sup>a</sup>	-2.92 <sup>ab</sup>	1.13 <sup>abc</sup>	12.94 <sup>abc</sup>
Lawyer rate (per 10k)	1.55	3.17 <sup>a</sup>	5.62 <sup>ab</sup>	9.78 <sup>abc</sup>	21.83 <sup>abc</sup>
Lawyer rate (per 1k)	0.15	0.32 <sup>a</sup>	0.56 <sup>ab</sup>	0.98 <sup>abc</sup>	2.18 <sup>abc</sup>
<i>Adjacent County Indicators</i>					
Adjacent lawyer gap rate (per 10k)	-1.49	-1.79	-0.90 <sup>b</sup>	-0.50 <sup>ab</sup>	0.71 <sup>abc</sup>
Adjacent lawyer rate (per 10k)	8.93	9.68	10.64 <sup>ab</sup>	10.83 <sup>ab</sup>	11.53 <sup>ab</sup>
<i>Employment and Earnings</i>					
Number of law office employees	5.13	9.74 <sup>a</sup>	16.08 <sup>ab</sup>	29.15 <sup>abc</sup>	50.98 <sup>abc</sup>
Mean earnings per job (\$)	48,539	46,272	44,706	46,838	53,123 <sup>abc</sup>
Upper quartile earnings per job (\$)	56,159	54,188	54,517	54,978	62,226 <sup>abc</sup>
<i>Establishments</i>					
Number of law offices	2.34	4.15 <sup>a</sup>	6.15 <sup>ab</sup>	8.83 <sup>abc</sup>	11.83 <sup>abc</sup>
No law offices in county (%)	51.78	16.71 <sup>a</sup>	0.00 <sup>ab</sup>	0.00 <sup>ab</sup>	0.00 <sup>ab</sup>
Law offices with 1-4 employees (%)	96.85	97.09	95.91	89.61 <sup>abc</sup>	80.44 <sup>ac</sup>
Law offices with 5-9 employees (%)	3.15	2.78	3.84	9.39 <sup>abc</sup>	14.47 <sup>abc</sup>
Law offices 10-19 employees (%)	0.00	0.12	0.25	0.99 <sup>abc</sup>	4.70 <sup>abc</sup>
Law offices 20 or more employees (%)	0.00	0.00	0.00	0.01	0.39

Notes: Unconditional means reported. a = statistically different from Critical Legal Deserts at  $P < 0.05$ ; b = statistically different from Urgent Legal Deserts at  $P < 0.05$ ; c = statistically different from Emerging Legal Deserts at  $P < 0.05$ .

TABLE 3: DEMOGRAPHIC AND SPATIAL INDICATORS IN 2022

	Critical Legal Deserts <i>N</i> =253	Urgent Legal Deserts <i>N</i> =413	Emerging Legal Deserts <i>N</i> =518	Average Legal <i>N</i> =732	Mid-High Legal <i>N</i> =391
<i>Geography</i>					
County land area (sq.mi.)	1,438	999 <sup>a</sup>	913 <sup>a</sup>	858 <sup>a</sup>	905 <sup>a</sup>
Density of interstates (per 100 sq.mi.)	6.32	7.53	9.05	8.64	7.68
Topography, flat to high mountains (1-21)	9.63	9.10	9.08	8.81	8.78
Native American reservation land (%)	2.00	2.23	1.52	1.36	1.16
<i>Rurality</i>					
Outlying metropolitan (%)	0.00	14.77 <sup>a</sup>	21.43 <sup>a</sup>	18.85 <sup>a</sup>	12.53 <sup>ac</sup>
Micropolitan, city over 10k (%)	28.46	26.63	27.61	27.46	28.39
Rural, no city over 10k (%)	68.77	53.27 <sup>a</sup>	44.79 <sup>a</sup>	47.54 <sup>a</sup>	53.20 <sup>a</sup>
<i>Demographics</i>					
Population	15,565	20,667 <sup>a</sup>	25,573 <sup>ab</sup>	28,043 <sup>ab</sup>	23,325 <sup>a</sup>
Population density (per sq.mi.)	20.40	37.98 <sup>a</sup>	44.25 <sup>a</sup>	50.22 <sup>ab</sup>	76.54 <sup>ab</sup>
Age 17 and under (%)	21.68	21.99	21.79	21.94	21.48
Age 65 and older (%)	21.94	20.39 <sup>a</sup>	20.29 <sup>a</sup>	20.44 <sup>a</sup>	21.35 <sup>bc</sup>
White race alone, not Hispanic (%)	71.97	74.13	77.91 <sup>a</sup>	79.62 <sup>ab</sup>	79.81 <sup>ab</sup>
Hispanic any race (%)	15.72	10.69 <sup>a</sup>	8.80 <sup>a</sup>	7.48 <sup>ab</sup>	6.36 <sup>abc</sup>

Notes: Unconditional means reported. a = statistically different from Critical Legal Deserts at  $P < 0.05$ ; b = statistically different from Urgent Legal Deserts at  $P < 0.05$ ; c = statistically different from Emerging Legal Deserts at  $P < 0.05$ .

TABLE 4: SOCIAL RISK AND HOUSING INDICATORS IN 2022

	Critical Legal Deserts <i>N</i> =253	Urgent Legal Deserts <i>N</i> =413	Emerging Legal Deserts <i>N</i> =518	Average Legal <i>N</i> =732	Mid-High Legal <i>N</i> =391
<i>Social Risk</i>					
Never attended high school (%)	7.05	6.65	6.24	5.99	5.23 <sup>abc</sup>
No high school diploma / GED (%)	13.51	13.48	12.62	12.20 <sup>b</sup>	10.70 <sup>abc</sup>
Single-headed families with children (%)	11.42	12.02	12.19	12.38	11.88
Disability, all ages (%)	17.65	17.34	17.68	17.16	15.97 <sup>abc</sup>
No health insurance coverage (%)	10.96	10.97	10.13	9.55 <sup>ab</sup>	8.92 <sup>abc</sup>
Not a U.S. citizen (%)	2.95	2.18	1.99 <sup>a</sup>	1.82 <sup>a</sup>	1.80 <sup>a</sup>
English second language speakers (%)	14.38	10.29 <sup>a</sup>	8.43 <sup>a</sup>	7.37 <sup>ab</sup>	6.95 <sup>ab</sup>
Limited English ability (%)	2.53	1.53	1.32 <sup>a</sup>	1.18 <sup>a</sup>	1.11 <sup>a</sup>
<i>Housing</i>					
Rent 30% or more of HH income (%)	30.09	33.41 <sup>a</sup>	35.26 <sup>ab</sup>	34.95 <sup>a</sup>	34.77 <sup>a</sup>
Housing with 10 + units (%)	2.08	2.40	2.78 <sup>a</sup>	3.18 <sup>ab</sup>	4.12 <sup>abc</sup>
Housing in mobile homes (%)	15.65	16.19	15.40	13.71 <sup>bc</sup>	11.57 <sup>abc</sup>
Crowded housing (%)	2.53	2.67	2.18 <sup>bc</sup>	2.04 <sup>ab</sup>	1.91 <sup>ab</sup>
Wired broadband internet subscription (%)	55.16	54.30	55.14	57.20 <sup>bc</sup>	60.99 <sup>abc</sup>
No internet access (%)	17.24	17.18	16.72	15.88 <sup>b</sup>	14.85 <sup>abc</sup>

Notes: Unconditional means reported. a = statistically different from Critical Legal Deserts at  $P < 0.05$ ; b = statistically different from Urgent Legal Deserts at  $P < 0.05$ ; c = statistically different from Emerging Legal Deserts at  $P < 0.05$ .



TABLE 5: SOCIAL CAPITAL INDICATORS IN 2022

	Critical Legal Deserts <i>N</i> =253	Urgent Legal Deserts <i>N</i> =413	Emerging Legal Deserts <i>N</i> =518	Average Legal <i>N</i> =732	Mid-High Legal <i>N</i> =391
<i>Social Capital</i>					
Religious organizations (per 10k)	35.07	35.34	39.93 <sup>bc</sup>	45.01 <sup>abc</sup>	48.62 <sup>abc</sup>
Civic and social organizations (per 10k)	18.25	11.49	13.22	14.45 <sup>b</sup>	22.37 <sup>bc</sup>
Charitable donations (\$ per return)	449	640 <sup>a</sup>	626 <sup>a</sup>	673 <sup>a</sup>	1,048 <sup>a</sup>
Response rate, Census forms (%)	46.78	49.85 <sup>a</sup>	52.21 <sup>ab</sup>	53.24 <sup>ab</sup>	52.30 <sup>ab</sup>
Voter turnout, 2020 U.S. election (%)	65.75	62.70	62.00 <sup>a</sup>	63.41	66.41 <sup>bc</sup>
Republican votes, 2020 U.S. election (%)	72.29	69.35	70.25	69.32	66.10 <sup>abc</sup>

Notes: Unconditional means reported. a = statistically different from Critical Legal Deserts at  $P < 0.05$ ; b = statistically different from Urgent Legal Deserts at  $P < 0.05$ ; c = statistically different from Emerging Legal Deserts at  $P < 0.05$ .

TABLE 6: ECONOMIC INDICATORS IN 2022

	Critical Legal Deserts <i>N</i> =253	Urgent Legal Deserts <i>N</i> =413	Emerging Legal Deserts <i>N</i> =518	Average Legal <i>N</i> =732	Mid-High Legal <i>N</i> =391
<i>Income and Poverty</i>					
Median household income (\$)	55,771	57,679	58,256	58,537 <sup>a</sup>	61,178 <sup>abc</sup>
Median earnings per job (\$)	34,648	35,346	35,528	35,841	36,254 <sup>a</sup>
Income owned by top 20% (%)	46.90	47.97	47.87	48.21	48.86 <sup>abc</sup>
People living below poverty (%)	15.53	15.87	15.24	15.07	14.27 <sup>b</sup>
People living 150% below poverty	26.48	26.27	25.59	25.32	23.92 <sup>abc</sup>
<i>Labor Force Participation</i>					
Labor force participation, 18 and over (%)	53.76	53.65	54.84	56.09 <sup>abc</sup>	58.01 <sup>abc</sup>
Labor force participation, 18-64 (%)	75.06	72.72	74.07	76.06 <sup>bc</sup>	79.92 <sup>abc</sup>
<i>Employed Persons by Industry</i>					
Agriculture, forestry, fishing (%)	10.37	5.80 <sup>a</sup>	4.86 <sup>a</sup>	5.10 <sup>a</sup>	7.25 <sup>abc</sup>
Mining (%)	2.69	1.81	1.60 <sup>a</sup>	1.38 <sup>a</sup>	1.18 <sup>ab</sup>
Construction (%)	7.91	8.26	8.17	7.87	7.78
Manufacturing (%)	9.65	12.77 <sup>a</sup>	13.81 <sup>a</sup>	13.63 <sup>a</sup>	11.21 <sup>bc</sup>
Transportation, warehousing, utilities (%)	6.51	6.21	6.20	5.89	5.77 <sup>abc</sup>
Professional services (%)	7.35	8.12	8.48 <sup>a</sup>	8.65 <sup>a</sup>	9.40 <sup>abc</sup>
Healthcare, social assistance services (%)	12.11	13.30 <sup>a</sup>	13.56 <sup>a</sup>	14.02 <sup>ab</sup>	13.91 <sup>a</sup>
Education services (%)	9.67	9.51	9.05	9.16	9.43
Retail, leisure, other services (%)	25.21	25.94	26.55	26.76 <sup>b</sup>	26.70 <sup>a</sup>
Public administration (%)	6.69	6.23	5.60 <sup>ab</sup>	5.29 <sup>ab</sup>	5.07 <sup>abc</sup>

Notes: Unconditional means reported. a = statistically different from Critical Legal Deserts at  $P < 0.05$ ; b = statistically different from Urgent Legal Deserts at  $P < 0.05$ ; c = statistically different from Emerging Legal Deserts at  $P < 0.05$ .

## APPENDIX

### A. LATENT PROFILE ANALYSIS

LPA is used to create a classification of counties based on lawyer gap rates per 10,000 population in 2022. The estimated LPA density function is presented in equation 1, where  $\mathbf{x}_i$  is the lawyer gap rate,  $\lambda_k$  are the mixture weights for each variable in class  $k$ , and  $\boldsymbol{\theta}_k$  are the mean vectors and covariance matrices for each class, where  $\boldsymbol{\theta}_k = (\boldsymbol{\mu}_k, \boldsymbol{\Sigma}_k)$ .<sup>152</sup> The LPA is identified by having positive degrees of freedom, an information matrix that is positive definite, and the assumption of uncorrelated indicators, where  $\text{cov}(\mathbf{x}_i, \mathbf{x}_i) = 0$ .<sup>153</sup> Expectation-maximization is used to obtain maximum likelihood a posteriori (MAP) estimates. To avoid the issue of local maxima, we estimate 5,000 initial starting values and optimize 10 in the final stage.<sup>154</sup>

#### EQUATION A1: LATENT PROFILE ANALYSIS

$$f(\mathbf{x}_i | \boldsymbol{\theta}) = \sum_1^K \lambda_k f_k(\mathbf{x}_i | \boldsymbol{\theta}_k)$$

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<sup>152</sup> Collier, Z. and W. Leite. 2017. "A Comparison of Three-Step Approaches for Auxiliary Variables in Latent Class and Latent Profile Analysis, 24 STRUCTURAL EQUATION MODELING 819-830 (2017).

<sup>153</sup> Beau Abar & Eric Loken, *Consequences of Fitting Nonidentified Latent Class Models*, 19 STRUCTURAL EQUATION MODELING 1-15 (2012); Geoffrey McLachlan & David Peel, *FINITE MIXTURE MODELS* (2000).

<sup>154</sup> Herbert W. Marsh, Oliver Lüdtke, Ulrich Trautwein & Alexandre J.S. Morin, *Classical Latent Profile Analysis of Academic Self-Concept Dimensions: Synergy of Person- and Variable-Centered Approaches to Theoretical Models of Self-Concept*, 16 STRUCTURAL EQUATION MODELING 191-225 (2009).

## B. IMPUTATIONS AND LIMITATIONS

The Census Bureau instituted a more strict data suppression policy for CBP data in 2017, requiring us to impute missing data points using a Markov chain Monte Carlo (MCMC) imputation model. MCMC models take known and unknown values to create a series of data patterns, which are used to generate plausible estimates of those missing cells. The more non-missing data patterns there are, or patterns with only a few missing cells, the more accurate the imputation. We specify our MCMC model with known CBP employment data from 2016 and partially known data for 2022 for the following NAICS codes: professional services (541), legal services (5411), and office of lawyers (54111). Higher-order NAICS codes are used because there is less data suppression. We also include known socioeconomic values that include population, population density, RUCC code, state identifier, and median household income. We estimated a full MCMC model that generated 2,000 multiple imputations with a fixed minimum value of zero and no upper bound. We then calculated the median of those imputations to use as the imputed value.<sup>155</sup> The MCMC model performed well, with all imputed values exhibiting high consistency with coefficients of variation below 33 percent. However, the model performed poorly when imputing annual payroll for law office in 2022. To address this issue, we substituted missing cells with the average law office earnings per job for each state by RUCC, so that a county with an RUCC=8 would have the missing payroll imputed with the state earnings per job for RUCC=8. We then estimated total law office payroll by multiplying imputed earnings per job by law office employment.

The impact of the COVID-19 pandemic on data collection and quality is a limitation for all federal data sources. Most agencies do not report margins of error, so it is impossible to

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<sup>155</sup> James R. Carpenter & Michael G. Kenward, *MULTIPLE IMPUTATION AND ITS APPLICATION* (2013).

ascertain the quality of the data since 2020. The exception is ACS, where estimates for most counties exhibit relatively low error, with most coefficients of variation around 25 percent. A small number of counties had errors of 50-60 percent, including three very low population counties in Texas, and about ten counties with large mining employment.

### C. LIST OF VARIABLES

<b>Variable Name</b>	<b>Description</b>	<b>Source</b>
Lawyer rate	Employment in law offices per 10,000 people	CBP
RUCC lawyer rate	Average US employment in law offices per 10,000 people by rural-urban continuum code	CBP
Lawyer gap rate	Difference between lawyer rate minus RUCC lawyer rate	Calculated
Adjacent lawyer rate	Average lawyer rate of surrounding counties using Queen's contiguity	Calculated using ArcGIS
Adjacent lawyer gap rate	Average lawyer gap rate of surrounding counties using Queen's contiguity	Calculated using ArcGIS
Number of law office employees	Average employment in law offices	CBP
Mean earnings per job	Average earnings per job in law offices, for all occupations	CBP
Upper quartile earnings per job	75 <sup>th</sup> percentile earnings per job in law offices, for all occupations	CBP
Number of law offices	Average number of law offices	CBP
No law offices in county	Percent of counties with no law office	CBP
Law offices by employment size	Percent of law offices within the employment range	CBP
County land area	Land area in square miles	ArcGIS
Density of interstates	Linear miles of US interstates per 100 square miles of land area	ArcGIS
Topography	1-4 plains; 5-8 tablelands; 9-12 plains with hills or mountains; 13-17 open hills and mountains; 18-21 hills and mountains	ERS
Native American reservation land	Percent land area in federal reservations	ArcGIS and DOI
Outlying metropolitan	Percent counties in a metro area, but no city of 50,000 or more people	OMB
Micropolitan, city over 10k	Percent counties in a micropolitan area	OMB
Rural, no city over 10k	Percent counties in a non-core area	OMB
Population	Total population	ACS
Population density	Population density per square mile of land area	Calculated
Age 17 and under	Percent population age 17 and younger	ACS

Age 65 and older	Percent population 65 and older	ACS
White race alone, not Hispanic	Percent white race alone, not Hispanic	ACS
Hispanic any race	Percent Hispanic of any race or multiple races	ACS
Never attended high school	Percent population age 25 and older whose highest education is elementary or middle school	ACS
No high school diploma / GED	Percent population age 25 and older whose highest education high school, but did not receive a diploma or GED	ACS
Single-headed families with children	Percent households with children 17 and younger headed by a single parent	ACS
Disability, all ages	Percent population 5 years and older with any disability	ACS
No health insurance coverage	Percent of the noninstitutionalized population without private or public health insurance	ACS
Not a U.S. citizen	Percent population not a US citizen by birth or naturalization	ACS
English second language speakers	Percent population 5 years and older whose primary language is not English	ACS
Limited English ability	Percent of households where all people 14 years and older have difficulty speaking English	ACS
Rent 30% or more of HH income	Percent of renter households paying 30% or more of their household income on rent and housing costs	ACS
Housing with 10 + units	Percent of housing units with 10 or more units within a single building	ACS
Housing in mobile homes	Percent of housing units that are mobile homes	ACS
Crowded housing	Percent of housing units where the number of people exceeds the number of rooms	ACS
Wired broadband internet subscription	Percent of households with a non-cellular broadband internet connection	ACS
No internet access	Percent of households with no internet access, including cellular and public services	ACS
Religious organizations	Number of employees in religious organizations per 10,000 people	CBP
Civic and social organizations	Number of employees in grantmaking, social, civic, business, and political organizations per 10,000 people	CBP
Charitable donations	Average value of charitable donations reported on IRS 1040, per return with taxable income	IRS
Response rate, Census forms	Percent of households returning ACS mailed questionnaire	ACS
Voter turnout, 2020 U.S. election	Percent of eligible voters who cast ballot in 2020 US Presidential election	MIT
Republican votes, 2020 U.S. election	Percent of votes for Republican/Trump in 2020 US Presidential election	MIT
Median household income	Median household income, from all sources	ACS
Median earnings per job	Median earnings per job, including self-employment	ACS

Income owned by top 20%	Percent of income owned by top 20% of richest households	ACS
People living below poverty	Percent of people lived below the poverty line	ACS
People living 150% below poverty	Percent of household living 50% above the poverty line	ACS
Labor force participation, 18+	Percent of people age 18 and older who are employed or unemployed but seeking work	ACS
Labor force participation, 18-64	Percent of people age 18-64 who are employed or unemployed but seeking work	ACS
Agriculture, forestry, fishing	Percent of employed persons 16 and older working in NAICS 11	ACS
Mining, including oil and gas extraction	Percent of employed persons 16 and older working in NAICS 21	ACS
Construction	Percent of employed persons 16 and older working in NAICS 23	ACS
Manufacturing	Percent of employed persons 16 and older working in NAICS 31-33	ACS
Transportation, warehousing, utilities	Percent of employed persons 16 and older working in NAICS 22,48,49	ACS
Professional services	Percent of employed persons 16 and older working in NAICS 51,52,53,54,55	ACS
Healthcare, social assistance services	Percent of employed persons 16 and older working in NAICS 62	ACS
Education services	Percent of employed persons 16 and older working in NAICS 61	ACS
Retail, leisure, other services	Percent of employed persons 16 and older working in NAICS 56,71,72,81	ACS
Public administration	Percent of employed persons 16 and older working in NAICS 92	ACS

Notes: ACS = American Community Survey, U.S. Census Bureau; ArcGIS = geographic information systems software, ESRI; CBP = County Business Patterns, U.S. Census; DOI = U.S. Interior Department; ERS = Economic Research Service, U.S. Agriculture Department; IRS = Internal Revenue Service; OMB = Office of Management and Budget, U.S. Executive Office of the President; MIT = Election Data and Science Lab, Massachusetts Institute of Technology.