Nefarious Neighbors: How Living near Payday Loan Stores Affects Loan Use

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NEFARIOUS NEIGHBORS: HOW LIVING NEAR PAYDAY LOAN STORES AFFECTS LOAN USE

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Abstract

Few of us give much thought to local laws, yet local laws, such as zoning and other land use regulations, have an abiding influence on our lives. Think for a few moments about the types of businesses located near your home. Are these businesses places you frequent? Considering socio-economics, how do land uses differ from locale to locale throughout your city or state? Do all citizens have an equal voice in the land use approval process? The answer is likely no, which creates environmental and economic justice issues.

Like all businesses, when it comes to payday lenders, geography matters. Payday lenders and other high-cost loan providers charge between 300% to 1,000% interest on consumer
loans, a fact that concerns many consumer advocates. For decades, we have known another disturbing fact — by locating storefronts in neighborhoods frequented by certain demographic groups, payday lenders and other providers of high-cost credit target people of color, low-income and moderate-income Americans, military personnel, and the elderly. What we did not know until now, however, was whether this targeting succeeds in increasing loan usage by these groups.

This Article examines the extent to which living near a payday lender increases the likelihood that a consumer will use one. A growing body of literature examines the possible spatial patterns of alternative financial services, but here we add to that literature by explicitly exploring the relationship between distance and density of payday loan stores and consumer use of such loans. The study described in this Article finds that consumers who live closer to payday lenders are more likely to use the loans and that if a consumer lives near more than one, he or she is even more likely to use the loans. The study results suggest local payday loan ordinances that limit the number of lenders, or forbid lenders from certain areas, effectively limit the harm caused by such high-cost loans.
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INTRODUCTION

As geographer Waldo Tobler famously noted, "everything is related to everything else" but near things are more related than distant things. In other words, geography matters. In the law, geography is often controlled by local ordinances rather than state or federal laws. Fed up with a lack of regulatory efforts at the state or federal level, many consumer advocates concerned about payday loan abuses are turning to local laws to curb abusive payday loan practices. Our study shows that these efforts are likely to bear fruit in the form of meaningful payday loan reform that might reduce unconscionable payday loan practices.

Think for a few moments about the types of businesses located near your home. How did these businesses arrive in your neighborhood? In other words, who approved them for this location and why? Considering socio-economics, how do land uses differ from locale to locale throughout your city or state? Do all citizens have an equal voice in the land use approval process? The answer is likely no, which creates environmental and economic justice issues. People who control which businesses appear in communities have significant influence on the everyday lives of those who live there, perhaps much more influence than most of us have previously understood.

Local lawmakers should think long and hard about zoning and other local land use regulation, given the broad influence of these regulations on society. Mayors, city council members, and city planners now have evidence that the business and other uses such as parks and community centers they approve for their cities, have an impact on citizen well-being. Perhaps it is obvious that approving a license or zoning application for a liquor store, a fast-food restaurant, a payday lender, or a bar will result in more use of those businesses. Conversely, it makes sense to assume that installing parks, basketball courts, health food stores, grocery stores and community gardens will improve well-being to a

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greater extent than liquor stores, bars or payday lenders. In this Article, we test this broad hypothesis in the context of the geography of payday loan stores as this geography affects payday loan usage. In so doing, we provide valuable data for mayors, city councils, and city planners who wish to be more proactive in improving the health and well-being of communities across our nation.

Payday, title and high-cost installment lenders may charge interest rates from 100% per annum to 1100% per annum. While some scholars laud these lenders as godsend for people with poor credit and few other options, many others in society fear that the lenders ultimately do most consumers more harm than good. Although there are a number of exceptions, federal legislation requires lenders disclose their interest rates on an annual basis, meaning lenders must tell consumers the interest they are charging. Nevertheless, these interest rates are often obfuscated if not completely hidden from consumers.

There is no federal interest rate cap on consumer loans, except for loans made to military personnel and their families, in which case lenders can charge only 36% or less per annum.

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3 See Lee R. Maheswaran, The Health Benefits of Urban Green Spaces: A Review of the Evidence, 33 J. PUB. HEALTH 212, 212 (2011) ("Most studies reported findings that generally supported the view that green space have a beneficial health effect."). See generally Deborah A. Cohen et al., Contribution of Public Parks to Physical Activity, 97 AM. J. PUB. HEALTH 509 (2007) (evidencing the critical role parks play in facilitating physical activity in minority communities).

4 See Nathalie Martin, 1,000% Interest—Good While Supplies Last: A Study of Payday Loan Practices and Solutions, 52 ARIZ. L. REV. 563, 564 n.1 (2010) [hereinafter Martin, 1,000% Interest] ("The [payday] loans on which we gathered data ranged in interest rates from 100% per annum to 1100% per annum.").


8 See 10 U.S.C. §987(a)-(b) (2012) ("A creditor who extends consumer credit to a covered member of the armed forces or a dependent of such a member . . . may not impose an annual percentage rate of interest greater than 36 percent with respect to the consumer credit extended . . . .''); 32 C.F.R. §232.4(b) (2016) ("A creditor may not impose an [Military Annual Percentage Rate] greater than 36 percent in connection with an extension of consumer credit that is closed-end credit or in any billing cycle for open-end credit.").
2007, a bipartisan Congress enthusiastically passed the Military Lending Act, after evidence emerged that high-cost loans like payday and title loans were interfering with military readiness. Military personnel and their families are now protected by the 36% federal interest rate cap, but what about the rest of us? Concern over harm to consumers caused state legislators, city councils, religious and consumer groups to look for alternatives to federal legislation to curb abuses in this controversial industry. These non-federal legal actions include state legislation, among other patchwork solutions.

Legal scholars, geographers and others have empirically shown that lenders offering payday loans, title loans and high-cost installment loans often locate their stores outside military bases and in low-income and minority neighborhoods. Scholars also

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12 See, e.g., Graves & Peterson, supra note 9, at 832 (evidencing payday lenders target military personnel); Steven M. Graves, Landscapes of Predation, Landscapes of Neglect: A Location Analysis of Payday Lenders and Banks, 55 PROF. GEOGRAPHER 303, 312 (2003) [hereinafter Graves, Landscapes] (suggesting the payday lending industry targets neighborhoods with a higher percentage of poor and minority residents); William C., Apgar, Jr., & Christopher E. Herbert, Subprime Lending and Alternative Financial Service Providers: A Literature Review and Empirical Analysis, U.S. DEPT HOUSING & URB. DEV. OFF. POL’Y DEV. & RES. II1, II60-1 (2004) (alternative financial service providers are highly concentrated in lower income neighborhoods and in neighborhoods where Hispanics comprise a significant share of the population); Kenneth Temkin & Noah Sawyer, Analysis of Alternative Financial Service Providers, FANNIE MAE FOUND. (2004), https://www.urban.org/sites/default/files/alfresco/publication-pdfs/410935-Analysis-of-Alternative-Financial-Service-Providers.PDF (alternative financial service providers cluster in minority and low-income neighborhoods); Wei Li, et al., Predatory Profiling: The Role of Race and Ethnicity in the Location of Payday Lenders in California, CTRL. FOR RESPONSIBLE LENDING (2009), http://www.responsiblelending.org/payday-lending/research-analysis/predatory-profiling.pdf (racial and ethnic composition of neighborhoods is the primary predicator of payday lending locations); Robin A. Prager, Determinants of the Locations of Payday Lenders, Pawnshops and Check-Cashing Outlet, 45 R. INDUS. ORG. 21, 37-38 (2014);
have demonstrated that customers of these lenders do not shop around for price when choosing loan but typically choose a lender based upon location or a third-party recommendation. Perhaps it is no surprise that living near one or more payday lending establishments increases the likelihood that a consumer will use these loans. Three of the authors – a geographer and two social workers – devised a study to test the premise that having payday lender(s) in the neighborhood increases payday loan usage by neighborhood residents. This Article describes that study, the first empirical study to establish definitively that living near payday loan establishments increase the likelihood that a consumer will use the loans. The study has important implications for both state legislatures and local governments who seek to limit the number stores in a particular place or prohibit payday lenders entirely.

Whether in favor or opposed to regulating payday loans, few people argue payday loan stores increase the panache of a neighborhood. Indeed, in recent years, payday loans have joined the ever-ubiquitous liquor stores, limited nutritious food stores, and toxic waste dumps that have always proliferated in disadvantaged communities. Payday loans are cash advances made with the promise of a payback with interest, following receipt of the borrower's next paycheck. Unfortunately, the arrival of payday rarely makes paying the loan easy. The loans are easy to take out but hard to repay. High interest rates add up quickly, and while the loans are framed as term loans that can be repaid in short order, they are designed to continue extracting the bi-weekly


13 *PEW CHARITABLE TRUST, Payday Lending, supra* note 5, at 15.

14 See Greg Hinz, *Potent Mix: Liquor, Poverty, CRAIN'S CHICAGO BUS.* (Jan. 18, 1997), http://www.chicagobusiness.com/article/19970118/ISSUE01/10005751/potent-mix ("Low-income, minority neighborhoods and suburbs are far more likely to be home to package liquor stores than middle-to-upscale white areas.").

15 See Kelly M. Bower, et al., *The Intersection of Neighborhood Racial Segregation, Poverty, and Urbanicity and Its Impact on Food Store Availability in the United States, 58 PREVENTIVE MED.* 33, 35-38 (2014) (the number of convenience stores increases as the level of neighborhood poverty increases).

fee. In other words, most are not designed to be repaid.17 Refinancing, sometimes many times over, is often inevitable due to the short-term and non-amortizing structure of the loans. Consumer borrowers plunge deeper and deeper into debt, which further erodes borrowers’ financial stability and opportunities to create wealth.18 Initially, these loans seem attractive to low and moderate-income consumers with weaker credit histories, because they require no credit check and are relatively quick to arrange, but borrowers learn quickly that the loans have a deep, dark side.19

In the absence of the federal regulation of payday loans, states attempt to control the use of these high interest loans by either limiting the amount of interest charged or capping the number and amount of loans an individual may take out.20 In addition to state action, some local governments enact ordinances zoning the density of payday loan shops within an area through the use of anti-concentration ordinances, the distance of store locations from residential areas, or to impose other geographical and non-geographical limitations.21

17 P E W C H A R I T A B L E T R U S T, Payday Lending, supra note 5, at 15 (Lenders say in their marketing materials that the loans are not designed for long-term use, but this is untrue. The loans are designed for long-term use. Indeed, the average borrower is indebted for payday loans five to seven months a year).
19 Id.
While research on the effects of state and local payday loan laws is limited and findings are mixed, our study differs from past studies by examining the relationship between the distance and density of payday loan stores and consumer use of payday loans. Exploration of this relationship informs policymakers about the efficacy of location and density regulations as a means of protecting the consumer.

Part II of this Article describes the legal landscape of payday loans and other high-cost loan and also describes the various types of loans and how this variation developed. This Part describes the history of usury in the United States and the ways in which states and local government attempt to regulate payday loans, in light of federal inaction. Part III describes the bifurcation of U.S. financial markets and explains how the geography theories of distance decay and localization economies affect payday markets. Part IV describes our study methodology and results. In Part V, we conclude with lessons for local policy makers on how our data can be used to create meaningful local payday loan ordinances, which can in turn improve the lives of people in our towns and cities nationwide.

I. THE LEGAL LANDSCAPE: TYPES OF HIGH-COST LOANS, USURY LAWS, AND REGULATION OF HIGH-COST LOANS

Current regulation of payday and other high-cost loans are the worst kind of regulation – extensive but not effective. This regulation takes up a great deal of space in the legal landscape but is designed to be neither effective nor efficient. Rather, lenders lobby for laws that appear thoughtful and rigorous but are

22 Compare Christopher S. Fowler, et al., The Geography of Fringe Banking, 54 J. REGIONAL SCI. 688, 703 (2014) (explaining local and state regulatory environment does not affect the total number of payday loan establishments), and Temkin & Sawyer, supra note 12, at 27-8, with McKernan, et. al. supra note 20, at 215 (contending state regulations effectively regulate use of alternative financial services and payday lenders), and James R., Barth, et. al., Do State Regulations Affect Payday Lender Concentration?, 84 J. ECON. & BUS. 14, 23-4 (2016) (same).
23 See infra notes 27-83 and accompanying text.
24 See infra notes 84-116 and accompanying text.
25 See infra notes 117—33 and accompanying text.
26 See infra notes 134-40 and accompanying text.
27 Martin, Public Opinion, supra note 11, at 273.
neither.\(^{28}\) As explained below, historically, regulating high-cost consumer credit was left primarily to the states. A few federal laws also apply, making the resulting patchwork a complex labyrinth.\(^{29}\) Local governments, fed up with inaction on state and federal level, joined the party, leading to a third level of regulation.\(^{30}\) These developments are discussed in detail in this section, along with a description of usury laws and the various types of high-cost loans in the marketplace today.

A. Types of High-Cost Loans

While our study measures only the use of traditional payday loans, knowledge of the fragmented market helps us regulate high-cost credit in the future. Lenders design a variety of high-cost loans that provide access to people who may not have access to credit, often at rates of 300-1,000% interest or more.\(^{31}\) Terms of different loan products vary greatly. One example is the “payday” loan, so named because its original purpose was to help a customer survive a short-term cash flow crisis between now and payday.\(^{32}\) In a typical payday loan, a consumer borrows money at a rate of between $15 and $25 per $100 for a period of fourteen days or less.\(^{33}\) In other words, if a consumer was paid four days ago but is already out of cash, she can go borrow, for example,

\(^{28}\) See id.


\(^{30}\) See generally Martin & Mayer, supra note 2.


\(^{32}\) See Ronald J. Mann & Jim Hawkins, Just Until Payday, 54 UCLA L. REV. 855, 857 (2007) (explaining the mechanics of a typical payday loan); Karen E. Francis, Note, Rollover, Rollover: A Behavioral Law and Economics Analysis of the Payday Loan Industry, 88 TEX. L. REV. 611, 611–12 (2010) (describing a payday loan transaction); Martin, 1,000% Interest, supra note 4, at 564 (Payday loans “were originally designed to tide a consumer over until payday, and then be paid back in one lump sum when the consumer received her paycheck.”).

\(^{33}\) Martin, 1,000% Interest, supra note 4, at 564.
$400 between now and her next payday (now ten days away). To receive the $400 at a $15 per $100 rate she needs a checking account and writes a check, or authorizes an automatic debit, for $460 post-dated to her next payday.\(^3^4\) When payday comes, she can either let the check or debit clear, assuming the unlikely event that she now has this money, or she can go in and pay another $60 to borrow the same $400 for the next two weeks. This loan carries an annual interest rate of 390% or more.

Another loan type is the longer high-cost "installment loan[,]" created to skirt state laws enacted to curb the classic difficult-to-pay, short-term, non-amortizing, payday loan.\(^3^5\) In one such installment loan, a customer borrows $100, to be repaid in twenty-six bi-weekly installments of $40.16 each, plus a final installment of $55.34. \(^3^6\) In total, this borrower pays a total of $1,099.71 on a $100 loan. The annual percentage rate on the loan is 1,147%.\(^3^7\)

Another type of high-cost loan is the auto title loan, for which consumers do not need bank accounts.\(^3^8\) Rather borrowers simply need an unencumbered automobile to secure the loan. These loans carry a typical interest rate of 25% per month or 300% per annum.\(^3^9\) While title loans typically carry lower interest rates

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\(^3^4\) See id.

\(^3^5\) See generally From Payday to Small Installment Loans, supra note 31.


\(^3^7\) See B & B Investment Group, No. D-01010CV-2009-01916 at ¶ 7. See also Salmon, supra note 36. This assumes lender is unable to convince borrower to re-borrow the principal before the loan is repaid.


\(^3^9\) See Hawkins, et. al., supra note 38, at 1014-15 ("The most common term for the [title] loan is one month, the interest rate charged is commonly around 300% (when expressed as an annual percentage rate) . . ."); Martin & Adams, supra note 38, at 48 (concluding interest rates for title loans are typically 100%-300% per annum).
than payday loans, they may be larger loans, increasing the difficulty to repay and creating debt traps.\textsuperscript{40} Title loans also subject borrowers to the possibility of losing their vehicle, a risk not encountered with the other forms of high-cost loans described here. In a prior study, one of the authors found that in one year in New Mexico, as many as 71\% of title loan borrowers lost their cars to repossession.\textsuperscript{41} Our study, described in Part IV, analyzed only traditional payday loan use, which was the predominant type of high-cost loan used in Louisiana at the time of our data collection.

\textbf{B. History of U.S. Usury Laws}

Until recently, most U.S. states had usury laws that capped interests on consumer loans.\textsuperscript{42} Usury laws date back to the earliest civilizations and are one of the simplest ways to protect consumers from harsh credit practices.\textsuperscript{43} Even Adam Smith, the father of modern economic theory, believed interest rate caps were

\textsuperscript{40} Constance Brinkley-Badgett, \textit{Title Loans vs. Payday Loans: A Side-by-Side Comparison}, CREDIT.COM, February 2, 2016, available at https://blog.credit.com/2016/02/title-loans-vs-payday-loans-a-side-by-side-comparison-(last accessed on February 24, 2019)(stating that "title loan amounts are about $1,000 versus $375 for payday loans, the survey found. This is one reason that the estimated $1,200 spent annually by an average title loan borrower on fees is more than twice the $520 spent a year by an average payday loan borrower...").

\textsuperscript{41} Martin & Adams, \textit{supra} note 38, at 45 ("[O]ur research shows that as many as 71\% of the title loan customers have their vehicles repossessed.").


\textsuperscript{43} Peterson, \textit{Usury Law}, \textit{supra} note 42, at 1113 ("Usury law, 'the oldest continuous form of commercial regulation,' dates back to the earliest recorded civilizations and continues to constrain payday lending in many American states.").
a good idea. Interest rate caps remained more or less in place throughout the United States until the Supreme Court's decision in *Marquette National Bank v. First Omaha Service Corp.*, in which "the Supreme Court was asked to decide which state’s usury law applies when a national bank lends money to a consumer in another state—that of the consumer or that of the bank." When the U.S. Supreme Court concluded that the bank's state rate applied, states began eliminating their usury caps in order to attract financial institutions to their states, with South Dakota and Delaware eliminating their caps first. The decision effectively deregulated state interest rate caps, allowing national banks headquartered in a state without usury caps to export their lack of an interest rate cap on consumers in any state. State lenders soon lobbied Congress for the same right, which Congress granted. Thereafter, banks could charge customers whatever rate they liked.

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46 See [Peterson, Usury Law](#) note 42, at 1121-22.

47 See id. at 1122.

48 See id.

49 See id.

50 See id.
C. Regulation of High-Cost Loans

1. Federal Law on High-Cost Loans

No federal laws regulate the specific terms of consumer loans. However, the federal Truth in Lending Act applies to all loans, and the federal Electronic Fund Transfer Act applies to online lending. While we do have a federal agency in charge of regulating transparency and fairness in consumer financial transactions, the Consumer Financial Protection Bureau (CFPB), the future of the CFPB is in a state of flux following the 2016 presidential election. At the moment, the CFPB regulates banks, credit unions, securities firms, payday lenders, mortgage-servicing operations, foreclosure relief services, debt collectors and other financial companies operating in the United States, but lacks authority to set interest rate caps on payday loans or any other credit product.

Congress unquestionably has the power to set federal interest rate caps. In 2007, Congress passed the Military Lending Act

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56 Nathalie Martin, Regulating Payday Loans: Why This Should Make the CFPB’s Short List, 2 HARV. BUS. L. REV. ONLINE 44, 48 (2011) [hereinafter Martin, Regulating Payday Loans].
(MLA), which placed a 36% interest rate cap on consumer loans prohibited lenders from engaging in predatory practices toward active-duty military members and their dependent family members. Military leaders, deeply concerned about the effects of predatory lending on military readiness, realizing state lawmakers' inability or unwillingness to pass laws protecting the troops, focused their efforts on passing federal legislation. In 2006, the United States Department of Defense issued a report finding that predatory lending undermines military readiness, harms the morale of troops and their families, and adds to the cost of fielding an all volunteer [sic] fighting force." Congress noted that lenders were blatantly targeting the military by clustering in large numbers "near military bases" and using "military-sounding names." Congress also found that many military personnel lacked sophistication in financial matters and were easily taken advantage of. While the original MLA contained many loopholes, which lenders quickly took advantage of, these loopholes have now been closed for the most part.

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57 See 10 U.S.C. §987(a)-(b) (2016) ("A creditor who extends consumer credit to a covered member of the armed forces or a dependent of such a member . . . may not impose an annual percentage rate of interest greater than 36 percent with respect to the consumer credit extended . . ."); 32 C.F.R. §232.4(b) (2015) ("A creditor may not impose an [Military Annual Percentage Rate] greater than 36 percent in connection with an extension of consumer credit that is closed-end credit or in any billing cycle for open-end credit.").
60 Id.
61 See Graves & Peterson, supra note 9, at 698 (identifying the types of businesses targeting military personnel around military bases by conducting electronic searches); id. at 668-72 (discussing U.S. senators argued payday loans interfered with military preparedness by interfering with security clearances and also by making it so that soldiers cannot devote their attention to their jobs). This in turn negatively affects their performance. As explained by Republican Representative Walter Jones, Jr., "[w]hen relatively unsophisticated borrowers are unable to readily repay a loan from these lenders, they can become consumed with worries over their debt and this undercuts their abilities to fulfill their military duties." 151 CONG. REC. E1487-01 (July 14, 2005) (statement of Rep. Jones).
62 Graves & Peterson, supra note 9, at 668-72.
2. State Laws on High-Cost Lending

Whether to have a usury cap is left to states and some states still cap interest on all consumer loans. For example, most states along the eastern seaboard cap the amount of interest and fees a lender may charge for consumer loans in a way that is "undiluted" and "trim." In other words, no lender may charge more than 18% or 36% for a loan of any kind. These type of laws are referred herein as laws with "true caps."

In most of the country, however, true caps are rare. More specifically, fifteen states and the District of Columbia either forbid payday lending or cap interest rates in a fashion that makes lending undesirable. The rest of the states have either no regulation of consumer loans, have regulations that affirmatively allow the high-cost products described above, or have piecemeal laws that apply to one or more of the various types of loans. The resulting legislative patchwork keeps legislatures and consumer protections organizations busy around the clock, but has not resulted in any overall decrease in high-cost loans or in interest rates on such loans. To the contrary, the high-cost lending industry is growing exponentially, faster than any other part of the consumer credit sector.

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65 Peterson, Usury Law, supra note 42, at 1117.

66 Saunders, supra note 63, at 3. The following states ban or cap payday loans at 36% or less: Arizona, Arkansas, Connecticut, District of Columbia, Georgia, Maryland, Massachusetts, Montana, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Vermont, and West Virginia.


68 United States Underbanked Financial Services Are a $78 Billion Marketplace That Encompasses Close to Two Dozen Products and Services Provided to Over 68 Million Consumers, 2011 UNDERBANKED MARKET SIZING STUDY, CTR. FIN. SERV. INNOVATION (Nov. 2012), http://www.cfsinnovation.com/system/files/CFSI_2011_Underbanked_Market_Sizing_S tudy_November_2012.pdf (noting the Center for Financial Services Innovation ("CFSI") claims to be "[T]he nation's leading authority on financial services for underserved consumers. Through insights gained by producing original research; promoting cross-sector collaboration; advising organizations and companies by offering specialized consulting services; shaping public policy; and investing in nonprofit organizations and
3. Local Laws on High-Cost Lending

Some local communities, fed up with inaction or ineffective action to curb payday loan abuses, are taking matters into their own hands. Payday lending is a good subject for local reform. The harms of high-cost loans are felt first in local communities, where people borrow primarily to pay for day-to-day living expenses.

In fact, “[l]ocal governments are often more motivated to fix problems like this than are states or the federal government,” and local governments “are frequently more aware that these problems exist.” Some see homelessness increase as result of payday loans and other consumer-adverse loans. Fueled by churches and other benevolent organizations, some city officials sadly watch while benevolence gifts from religious organizations and charities end up in the hands of high-cost lenders rather than grocery stores and landlords, a situation that concerns people of all political and religious persuasions.

start-ups, CFSI delivers a deeply interconnected suite of services benefiting underserved consumers.”). See also Fahzy Abdul-Rahman, Small-Dollar Predatory Lending and Bad Loans: Guide G-260, N.M. ST. U., COOPERATIVE EXTENSION SERV., C. AGRIC., CONSUMER & ENVTL SCI. 1 (Nov. 2012), http://aces.nmsu.edu/pubs/_g/G260.pdf (“Between 1992 and 2000, the number of predatory lenders in New Mexico grew from one per 66,000 citizens to one for every 5,212 citizens.”).

69 See Martin, Public Opinion, supra note 11, at 269–73 (discussing a wide variety of state and national polls that show broad public support for interest rate caps). See, e.g., Joshua Cooper, Reassessing Payday Lenders in the Wake of Their Most Negative Court Holding to Date, 18 J. CONSUMER & COMM. L. 15, 16 (2014) (describing a consumer advocacy group’s placement of ads against payday lenders on “Shark Week,” and comedian John Oliver’s show “Last Week Tonight” as part of a growing national movement to curb payday lending); Ted Seeger, Texas Cities Respond to Payday Lending, 52 HOUSTON L. REV. 741, 753–58 (2014) (discussing failures of the Texas legislature to combat payday loan abuses); Martin & Mayer, supra note 2, at 147-49 (providing examples of the options that local communities have when federal lawmakers do not address payday lending).

70 Martin & Mayer, supra note 2, at 147-49 (“[D]iscuss[ing] the tools available to local communities when state or federal lawmakers fail to act on issues of community concern”).

71 Peterson, Warning: Predatory Lender, supra note 44, at 932 (discussing local officials’ perceived need to step in and fill the gap causes by lax state and federal payday loan regulations).

72 See PEW CHARITABLE TRUST, Payday Lending, supra note 5.

73 Martin & Mayer, supra note 2, at 149.

74 See id. at 173 n.168.

75 See id. at 162.
As a result of concerns of this nature, nearly 250 local municipalities nationwide were working to limit payday loan abuses as of the fall of 2016.\(^{76}\) While legal issues, such as preemption, can limit the effectiveness of local action\(^{77}\) since state law is supreme over local or municipal law on the same subject, \(^{78}\) the vast majority of local payday loan ordinances (other than mere licensing and registration) are zoning ordinances, which are strictly within the purview of local governments.\(^{79}\)

Although zoning ordinances are safe from preemption challenges, municipalities are by no means limited to zoning tools in regulating payday loans.\(^{80}\) Given that some states have not regulated payday loans at all, there is often broad capacity for municipalities to effect change beyond mere zoning.\(^{81}\) Cities and counties can pass licensing and registration regulations, moratoria and permanent bans on new loan establishments, and permit regulations as well as caps on the total number of payday lenders within a municipality or county through traditional zoning powers.

Cities and counties can also limit the proximity of lenders in relation to one another and to other uses, and they can set good neighbor polices by setting limits on hours of operation and requiring certain lighting and signage.\(^{82}\) Municipalities may also

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\(^{76}\) Telephonic interview with Steven Graves, February 6, 2018. (Professor Graves keeps a database of all local ordinances as they are passed.).

\(^{77}\) The federal preemption doctrine comes from the U.S. Constitution. See U.S. CONST. art. VI, cl. 2 ("This Constitution, and the Laws of the United States which shall be made in Pursuance thereof . . . shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding").

\(^{78}\) Griffith et al., supra note 21, at 37.

\(^{79}\) See id. at 17–35.

\(^{80}\) See id. at 12 (summarizing the many ways in which municipalities have regulated payday lending, including moratoria on new payday lending while studying the issue, permanent moratoria, limits on density and distance, and special permit requirements, among others).

\(^{81}\) Other jurisdictions regulate piecemeal, leaving many opportunities for local governments to fill in the blanks. For an excellent summary of these laws across the Nation as of 2010, see NAT'L CONSUMER L. CTR., SMALL DOLLAR LOAN PRODUCT SCORECARD—UPDATED (May 2010), http://consumersunion.org/pdf/Scorecard-5-12-10.PDF.

\(^{82}\) See, e.g., MESA, ARIZ., ZONING ORDINANCE § 11-6-3 (July 4, 2018) (specifying that to receive a permit, a non-chartered financial institution must obtain any required state licenses, meet the separation requirements, submit documentation showing that
require distribution of information about local alternatives to payday loans. Finally, "municipalities can adopt [resolution[s] that support state legislative efforts to curb the damaging effects of payday lending on communities." In other words, local governments can educate state legislatures about what ordinary citizens actually want, which in effect shames state legislators who are turning a blind eye to the problem. Local payday loan ordinances were used very successfully for this purpose in Oregon, after which the state regulated payday lenders and caused the number of payday loan storefronts to drop from 329 to 81 in only one year.

II. SOCIO-GEOGRAPHIC BACKGROUND: BIFURCATED FINANCIAL MARKETS, DISTANCE DECAY THEORY, AND LOCALIZATION ECONOMIES

A. Bifurcated U.S. Financial Markets: How the Other Half Banks

When it comes to interest rates, US financial markets are currently bifurcated into two alternate systems owing to two distinct socio-economic realities in America. The first is the mainstream financial system that serves middle- and upper-income households. A person in this segment, using traditional financial services such as banks, might pay 10-18% on a short-term bank loan, an average of 14-16% for a loan taken out on a
credit card, or 4-5% for a fixed rate 30-year real estate mortgage loan. In contrast, low-moderate-income individuals exist in a post-Marquette financial system in which they borrow at rates of 300-1000% or more. These two socio-economic realities could not be more disparate. One would expect the disparity in interest rates to reflect completely different universes, or at a minimum, different countries. Both universes thrive in the U.S. with little in between.

How high are usage rates for high-cost loan products? In 2013, 39.3% of all U.S. households used at least one of the following types of alternative financial products: payday loans, installment loans, title loans, pawn shops, refund anticipation loans, rent-to-own services, non-bank money orders, non-bank check cashing and non-bank remittances. Not surprisingly, people who use traditional banks use alternative financial products less frequently. More specifically, unbanked households use alternative financial services and products at the rate of 63.2% while households with traditional bank relationships use these products just 21.7% in 2013.

People use alternative financial services for a variety of reasons, but they use alternative financial services most frequently for recurring basic consumption needs and convenience—not emergencies. This use, despite the huge

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88 See id.
89 See Martin, supra notes 32-41 and accompanying text.
93 Gregory Elliehausen & Edward C. Lawrence, Payday Advance Credit in America: An Analysis of Consumer Demand, CREDIT RESEARCH CTR. 28, 29 (2001), http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.200.7740&rep=rep1&type=pdf (claiming that 51% of payday borrowers made $25,000 - $50,000 a year and that an

Most of the previous research on the spatial distribution of alternative financial service providers has sought to determine whether alternative financial service providers target at-risk and vulnerable communities, including those with higher alarming 77% of the payday loan users made over $25,000). Less than 72% of the general population made an income this high three years later, according to Census data. See Household Income in the United States, Wikipedia, http://en.wikipedia.org/wiki/Household_income_in_the_United_States (showing by chart that 28.22% of the general population made $25,000 or less in 2003, meaning that only 71.88% made more than $25,000 in 2003, three years after these gentlemen gathered their data. Could the payday loan users actually be better off financially than the population as a whole? This makes little sense.).
concentrations of low-income individuals and minorities. This research, bivariate or multivariate correlational in nature, has determined that the alternative financial services industry is more concentrated in low- to moderate-income communities but not in the most impoverished areas. Most of these studies hint at, but do not actually prove, that low- to moderate-income consumers use the alternative financial service industry more often when those services are more densely located in their communities.

When researchers have tried to determine whether alternative financial service providers are filling a void in the market left by more traditional service providers, the results have been inconclusive. Some studies have found that alternative financial service providers are more likely to be located in areas where residents are underserved by traditional banks. Other studies found that the alternative financial service providers typically coexist with traditional banks. One study found that whether or not alternative financial service providers coexist with traditional banks depends on location. Another study, which used Euclidian distance from each census tract to the nearest check cashing provider and bank location in southeastern Pennsylvania, concluded that alternative financial service providers and traditional banks normally serve communities of different socioeconomic characteristics.

More recent research sheds light on how the density of alternative financial service providers and state regulation of payday lending are related to consumer use of alternative financial services.


100 T. Smith, M. Smith, & Wackes, supra note 97, at 219, 223.

101 See id at 223.

102 See id.

103 Temkin & Sawyer, supra note 12, at 3; Fowler et.al, supra note 22, at 688, 690.

104 Cover, Spring, & Kleit, supra note 88, at 339-41.

105 Dunham & Foster, supra note 88, at 136-40.
financial service providers. Using the 2012 National Financial Capability Study and restricted-use zip code files, scholars Friedline and Kepple measured community density as the total number of "auto title loans, payday loans, tax refunds, pawnshops, or rent-to-own stores." They then measured alternative financial services loan usage and found that the higher the density of alternative financial service providers, the more consumers used the loans.

To date, no empirical study has investigated how far consumers need to travel to access the nearest alternative financial service provider, or whether the density of alternative financial service providers within consumers' communities are associated with consumers' use of alternative financial service. Our study makes use of point addresses of consumers' residence and payday lenders to precisely and accurately measure accessibility in Euclidian distance. The methodology we use here is an improvement over that used in previous studies. Our study uses point addresses for its calculations. Additionally, the analysis is performed using Euclidian distance, since consumers who have zero lenders in their zip code or census tract may still live among many payday lenders. We further improved on past methodologies by including all payday lenders present just outside of the study area of our research. By controlling for proximity and density of


107 See id. at 58.

108 See id. at 66, 68. These authors found an increase in use of alternative financial services among consumers with incomes at or greater than $15,000 ("modest- and highest-income" groups), and that higher density of alternative financial service providers was associated with "chronic use" of these lenders among consumers with incomes less than $15,000 ("lowest-income" group). The study also found that state prohibition of payday lenders provided protection for modest- and highest-income consumers, but not so much for low-income consumers. See generally id.

109 Stan Openshaw, Developing GIS-Relevant Zone-Based Spatial Analysis Methods, in PAUL LONGLEY AND MICHAEL BATTY, SPATIAL ANALYSIS: MODELLING IN A GIS ENVIRONMENT 55-73 (WILEY 1996). This minimized the modifiable areal unit problem, caused by eliminating store locations that are within the statistically significant distance of a consumer because they fall just outside an artificial boundary. Focusing on a locality, the data utilized for this study contains no heterogeneity of AFS regulations, compositions of urban/rural, and zoning laws that would have affected consumers' use of AFS. See id.
traditional banks/credit unions, as well as individual-level financial and household characteristics, the present study fills the gap in the existing research on understanding how accessibility influences payday loan use.\textsuperscript{110}

\textbf{B. Distance Decay Theory and Localization Economies: Why Payday Loans in the Neighborhood Matter in Theory}

\textbf{1. Distance Decay Theory}

While it is intuitively understood that greater distance from a location limits our physical interaction with that location, this concept is described theoretically as \textit{distance decay} or sometimes alternatively as the \textit{gravity model}. Distance decay theory notes the decline in interaction between places, ethnic groups, or any other phenomena of interest as the distance between them increases.\textsuperscript{111} Distance decay is often described using geographer Waldo Tobler's first law of geography, namely that "everything is related to everything else, but near things are more related than distant things."\textsuperscript{112} While even Tobler admits that things are not always this simple,\textsuperscript{113} this maxim provides a meaningful starting point. Thus, the spatial distribution of services (i.e., accessibility), along with other individual factors, such as transportation availability, ability to weigh multiple alternatives, and personal preference, has a measurable effect on consumer use of those services. Distance decay models have been used to examine a broad array of human problems, including obesity and supermarket availability,\textsuperscript{114} criminal behavior and crime location,\textsuperscript{115} and health

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{110} See id.
  \item \textsuperscript{111} See generally A.S. Fotheringham, Spatial Structure and Distance-Decay Parameters, 71 ANNALS OF THE ASS'N OF AM. GEOGRAPHERS 425 (1981).
  \item \textsuperscript{112} Tobler, supra note 1, at 236.
  \item \textsuperscript{113} See id. at 234; see also Daniel Z. Sui, Tobler's First Law of Geography: A Big Idea for a Small World?, 94 ANNALS OF THE ASS'N OF AM. GEOGRAPHERS 269, 269 (2004).
  \item \textsuperscript{114} Paul L. Robinson et al., Does Distance Decay Modelling of Supermarket Accessibility Predict Fruit and Vegetable Intake by Individuals in a Large Metropolitan Area?, 24 J. HEALTH CARE FOR THE POOR & UNDERSERVED, 172, 173 (2013).
  \item \textsuperscript{115} Sun Liping, Yan Shaohong, Peng Yamin, & Yang Aimin, Criminal Incident Prediction Based on Geographical Profile, 6 J. CHEMICAL & PHARMACEUTICAL RES. 1, 1–7 (2014), available at http://jocpr.com/vol6-iss3-2014/JCPR-2014-6-3-1-7.pdf.
\end{itemize}
\end{footnotesize}
disparities and availability of healthcare facilities.\textsuperscript{116} Distance decay theory suggests that consumers may be more likely to take out a payday loan if there was a lender nearby due to the higher frequency of interaction between the business and the consumer.

2. Density and Localization Economies

Localization economies refers to the grouping of certain types of businesses near each other for the benefit of both the supply and demand sides of the equation. Clustering certain activities (in this case payday loan stores) may decrease the costs of labor and materials.\textsuperscript{117} For some businesses, being grouped together in particular locations allows for a supply of suitable employees. Additionally, nearness lowers the cost of infrastructure such as telecommunications, parking lots, security, and the like. For consumers, grouping these businesses together provides easier access to multiple locations along with cheaper transportation costs if they wish to compare rates or visit more than one location. The assumption is that separating these stores will make it more expensive and more difficult for consumers to locate and utilize them.

Combining these concepts, one could assume that a consumer would be more likely to make use of a payday loan if there was a lender in near proximity to his or her home and if there are convenient ways to use more than one location for comparison. While localization economies may provide some benefits for businesses and consumers, the high density of payday loan stores and visible marketing also provides behavioral cues that encourage use of alternative financial services.\textsuperscript{118} In other words, having a large number of lenders normalizes the practice of charging 300-1,000\% interest.

Since considering the distance decay and localization economies theories, our study was guided by two hypotheses.

\footnotesize
\textsuperscript{116} Zoë M. McLaren, Cally Ardington, & Murray Leibbrandt, Distance Decay and Persistent Health Care Disparities in South Africa, 14 BMC HEALTH SERVS. RES. 1, 8 (2014).


\textsuperscript{118} See generally Bertrand, Mullainathan, & Shafir, supra note 88.
First, increases in distance of payday lenders from the consumers' residences should be associated with a decreased likelihood of payday loan use. Second, increases in density of payday lenders should be associated with an increased likelihood of payday loan use. Below, we describe how we tested these working hypotheses.

III. STUDY METHODOLOGY

This part describes the methodology for our study, some of the study limitations, as well as the results of our study.

A. Sources of Data

This study utilized data collected from 289 Chapter 7 Bankruptcy filers who filed for bankruptcy in June 2005 in the Middle District (i.e., Baton Rouge, Louisiana) United States Bankruptcy Court. The bankruptcy filers' home addresses, as well as data on individual-level characteristics, were furnished in the bankruptcy data. Because not all of the 289 addresses could be retrieved or correctly geocoded in the GIS program, a subset of the sample comprised of 172 households were included in the final analyses. The only known available list of the population of U.S. payday lender addresses, which was compiled in the year 2007, was furnished by a geographer who has studied payday lending neighborhoods.119

B. Description of Baton Rouge

Our study was conducted in Louisiana, which does not limit interest rate caps. As background, Louisiana has the second highest rate (13.9 %) of unbanked and the seventh highest rate

119 Telephonic Interview with Steven Graves, June 2011. The authors were unable to locate a list of the population of payday lender addresses for the year 2005. To maintain consistency with the reference year (2007) of the list of payday lender addresses, all addresses of regional banks and credit union locations, compiled for the year 2007, for community-level control variables were obtained from the FDIC Summary of Deposits (SOD) database and the Louisiana Corporate Credit Union database. See Baton Rouge Credit Union Finder, CUWEB.ORG, available at http://www.cuweb.org/cu_finder.htm#laf,
(24.5 %) of underbanked population in the United States.\textsuperscript{120} Louisiana also has the ninth highest rate (7.1 %, compared to the national average of 4.7 %) of consumers who have ever used payday loans.\textsuperscript{121} We collected our data in the Baton Rouge metropolitan area, which has similar demographic characteristics to the rest of the state.\textsuperscript{122}

Figure 1 illustrates the agglomeration of payday lender locations in the Baton Rouge metropolitan area (hereafter “Baton Rouge”) with respect to payday loan consumers in the sample. The progressively darker areas show a progressively heavier concentration of payday loan establishments. The red dots are the homes of the consumers in our sample. Through Figure 1, we can see the strong relationship between the home addresses of the bankruptcy debtors in our sample and the concentrations of payday loan availability. The darker color zip code areas, which show a higher concentration of payday lenders, correlate with the higher concentration of consumers’ homes.


\textsuperscript{121} Addendum to the 2011 FDIC National Survey of Unbanked and Underbanked Households, FEDERAL DEPOSIT INSURANCE CORPORATION, (June 2013), available at https://www.fdic.gov/householdsurvey/2013_ofsaddendum_web.pdf.

\textsuperscript{122} See CORP. FOR ENTERPRISE DEV., The Most Unbanked Places in America (2011), https://prosperitynow.org/blog/most-unbanked-places-america. Additionally, the FDIC’s National Survey of Unbanked and Underbanked Households found that, in 2013, 7.7% of U.S. households are unbanked. However, 20.6% of African Americans, 17.9% of Latinos, and 15.0% of Others (i.e., all remaining racial-ethnic groups) are unbanked. In addition, the unbanked are more likely to be unmarried, have incomes of less than $30,000, less than a high school education, and a foreign-born Spanish speaker than the U.S. population as a whole. See 2017 FDIC National Survey of Unbanked and Underbanked Households, supra note 118.
C. Payday Loan Consumers and Payday Lender Locations in the Baton Rouge Metropolitan Area

1. Description of the Variables

In our study, we chose payday loan use as our dependent variable. We used the Public Access to Court Electronic Records
(PACER) system to search through the bankruptcy debtor's court disclosures (specifically their schedules of assets and liabilities) to find out if they had listed at least one payday loan among their debts. We identified payday loan debts in the bankruptcy files by correlating the names of creditors with those payday loan lenders licensed by the state Office of Financial Institutions and/or through the creditor's names, such as those including the terms payday loan, payday lender, or check lender in the creditor name.

The first major independent variable we used was distance. More specifically, we used the Euclidean distance or straight-line distance in miles between the bankruptcy filers' home addresses and the nearest payday lender. The second major independent variable we used was density of payday loan stores, which we measured by determining the number of payday lenders within a 1.5-mile radius of the bankruptcy filers' home addresses. To compute the distance and density of payday lenders and their proximity to the sample, the bankruptcy filers' home addresses and a list of licensed payday lenders were geocoded (i.e., pinpointed) on a map of the locality using a program called ArcGIS Desktop.123

For the distance variable, we computed the Euclidean distance in miles to ascertain the point-to-point distance between the bankruptcy filers' home addresses and the nearest payday lender. In order to make sure we chose the right distance for measuring density, we placed the bankruptcy filers' home address as the center of the circle for each debtor and then engaged in a series of sensitivity tests to determine which increment of the density-within-quarter-mile radius variable best modeled the effect of density on the dependent variable. We tested 0.25 miles, 0.5 miles, and 0.75 miles, increasing incrementally by 0.25 miles up to a maximum of 2.5 miles. We ultimately selected a radius of 1.5 miles as the independent variable because, of all of the density independent variables, the model with this density-within-a-1.5 mile radius exhibited the highest model goodness-of-fit statistics and independent variable t-test statistics we tested.

We built several statistical controls into our model, a series of theoretically and empirically relevant community and individual-

123 We used release 10.3.1 of the program. See http://desktop.arcgis.com/en/.
level variables. We measured the four community-level control variables—bank distance, bank density, credit union distance, and credit union density—in a manner consistent with the payday lender distance and density variables.¹²⁴

Payday loan borrowers tend to be renters rather than homeowners, single, and earn low incomes.¹²⁵

Therefore, dichotomous individual-level control variables included the presence of homeownership and the status of being married. Two continuous individual-level control variables included in the analyses were the number of children present in the bankruptcy filers’ households and the income-to-needs ratios (i.e., income divided by poverty threshold).

D. Statistical Strategy

Using Stata/SE 14.1 software to analyze the data, we created descriptive statistics for all of the variables. We created frequencies and percentages for the dichotomous variables and means and standard deviations for the continuous variables. We used logistic regression to analyze the relationship between the distance and density of payday lenders and payday loan use, holding all else constant. We reported parameter estimates as odds ratios, and we found statistical significance by one-tailed tests of statistical significance levels less than an alpha-level of 0.05. We conducted Stata post-estimation to generate and graph the predicted probabilities of payday loan use for each bankruptcy filer for their values of payday distance, holding the other variables constant. We also conducted this same post-estimation process for the payday density variable.

¹²⁴ Fowler et al., supra note 22, at 696. These bank and credit union variables were separately entered because at least one study found that payday lenders were more likely to be present “in counties that also have more traditional banks (but not more credit unions).” Id.

¹²⁵ Logan & Weller, supra note 90, at 1.
Table 1:

Descriptive Statistics of the Subset of the Sample in the Analyses (n = 172)

<table>
<thead>
<tr>
<th>Variables</th>
<th>n (%)</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payday Loan Use</td>
<td>32 (18.60)</td>
<td></td>
</tr>
<tr>
<td>Payday Distance (Miles)</td>
<td></td>
<td>2.46 (2.71)</td>
</tr>
<tr>
<td>Payday Density (Within 1.5 Mile Radius)</td>
<td></td>
<td>3.31 (3.85)</td>
</tr>
<tr>
<td>Bank Distance (Miles)</td>
<td></td>
<td>3.35 (3.32)</td>
</tr>
<tr>
<td>Bank Density (1.5 Mile Radius)</td>
<td></td>
<td>1.34 (1.90)</td>
</tr>
<tr>
<td>Credit Union Distance (Miles)</td>
<td></td>
<td>7.00 (16.42)</td>
</tr>
<tr>
<td>Credit Union Density (Within 1.5 Mile Radius)</td>
<td></td>
<td>0.64 (1.20)</td>
</tr>
<tr>
<td>Home Ownership</td>
<td>131 (76.16)</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td>$34,005.49 ($27,224.22)</td>
</tr>
<tr>
<td>Married</td>
<td>76 (44.19)</td>
<td>$29,184.00*</td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td>0.76 (1.07)</td>
</tr>
</tbody>
</table>

* Denotes median value for non-normally distributed variables.

IV. Study Results

A. Descriptive Results

Table 1 contains our descriptive statistics of the subset of bankruptcy filer sample whose home addresses were geocoded. Of the subset of 172 bankruptcy filers in the empirical analyses, 32 (18.60%) had used payday loans. The sample lived within a mean of 2.46 (SD = 2.71) miles of the nearest payday lender and had a mean of 3.31 (SD = 3.85) payday lenders within a 1.5-mile radius of their home addresses. The bankruptcy filers lived within a mean of 3.35 (SD = 3.32) miles of the nearest bank and had a mean of 1.34 (SD = 1.90) banks within a 1.5-mile radius of their home addresses. The sample also lived within a mean of 7.00 (SD
= 16.42) miles of the nearest credit union and had a mean of 0.64 (SD = 1.20) credit unions with a 1.5-mile radius of their home addresses. In terms of the individual-level control variables, three-quarters of the sample (n = 131, 76.16 %) owned a home. The sample's mean and median incomes were $34,005.49 (SD = $27,224.22) and $29,184.00, respectively. A little over two-fifths (n = 76, 44.19 percent) of the bankruptcy filers were married, and in terms of children, the sample had a mean of 0.76 (SD = 1.07) children.

Table 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>OR</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payday Distance</td>
<td>0.73*</td>
<td>-1.66</td>
</tr>
<tr>
<td>Payday Density</td>
<td>1.15**</td>
<td>2.49</td>
</tr>
<tr>
<td>Bank Distance</td>
<td>1.01</td>
<td>0.05</td>
</tr>
<tr>
<td>Bank Density</td>
<td>0.96</td>
<td>-0.32</td>
</tr>
<tr>
<td>Credit Union Distance</td>
<td>0.99</td>
<td>-0.31</td>
</tr>
<tr>
<td>Credit Union Density</td>
<td>0.79</td>
<td>-1.18</td>
</tr>
<tr>
<td>Homeownership</td>
<td>0.25**</td>
<td>-2.62</td>
</tr>
<tr>
<td>Married</td>
<td>1.44</td>
<td>0.70</td>
</tr>
<tr>
<td>Children</td>
<td>1.60*</td>
<td>2.20</td>
</tr>
<tr>
<td>Income-to-Needs Ratio</td>
<td>1.05</td>
<td>0.37</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 23.84** \ (p = 0.008) \]

*p < .05. **p < .01

C. Quantitative Empirical Results

Table 2 presents results of logistic regression. The major independent variables and a couple of control variables significantly predicted payday loan use in the distance and density concurrent model, as evidenced by a significant chi-square statistic (\( \chi^2 = 23.84, p < 0.01, \text{Pseudo } R^2 = 0.14 \)). We found that an increase in distance of payday lenders from the bankruptcy filers' home addresses was associated with a decreased likelihood of payday loan use (Odds Ratio [OR] = 0.73, z = -1.66, p < 0.05). We
further found that increases in density of payday lenders within 1.5 miles of the bankruptcy filers' home addresses were associated with an increased likelihood of payday loan use ($OR = 1.15, z = 2.49, p < 0.01$).

Our study dataset matched up consistently with many prior studies on homeownership ($OR = 0.25, z = -2.62, p < 0.01$), which significantly predicted decreases in the likelihood of payday loan use, while increases in the number of children ($OR = 1.60, z = 2.20, p < 0.05$) significantly predicted increases in the likelihood of payday loan use. The remainder of the control variables, bank density, bank distance, credit union density, and credit union distance did not significantly predict payday loan use.\footnote{Bank distance ($OR = 1.01, z = 0.05$), bank density ($OR = 0.96, z = -0.32$), credit union distance ($OR = 0.99, z = -0.31$), credit union density ($OR = 0.79, z = -1.18$), marital status ($OR = 1.44, z = 0.70$), and income-to-needs ratios ($OR = 1.05, z = 0.37$).}
Figure 2

The Distance Decay Function

We generated two graphs using the Stata post-estimation functions. Figure 2, the Distance Decay Function, demonstrated that increases in payday distance are associated with decreases in the predicted probability of payday loan use when holding all other variables constant. The predicted probability of payday loan use for filers who live close to payday lenders was approximately 0.24. Figure 3 shows the Localization Economies Function. More specifically, Figure 3 shows that increases in payday density are associated with increases in the predicted probability of payday loan use. The predicted probability of payday loan use for

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127 This probability drops to about 0.18 at one-mile from the nearest payday lender and decreases at a smaller rate for each mile increase in distance thereafter.
filers who live within communities dense with payday lenders increases almost linearly for each unit increase in payday density.

**Figure 3**

![The Localization Economics Function](image)

**E. The Localization Economics Function**

Several scholars have noted the way in which low- and moderate-income households use alternative financial services creates an equity or environmental justice issue. This results from a lack of access to better alternatives at traditional banking institutions. In an attempt to address the geographically uneven distribution of alternative financial services, previous

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129 See id.
studies have attempted to answer whether the alternative financial services industry strategically locates its storefronts in neighborhoods with consumers predominantly of a lower socioeconomic status and minority composition for the particular purpose of filling the void after traditional banks have left.

F. Study Limitations

While this is the first study that examined the association between the distance and density of payday lenders and consumer use of payday loans using point addresses and controlling for accessibility of mainstream banks and credit unions, this study has several limitations. First, this study used non-representative cross-sectional data and cannot establish causality. While the Chapter 7 bankruptcy filers' data offers a unique advantage of furnishing point addresses of filers with detailed accounts of AFS use, the data may have contained a more socioeconomically disadvantaged segment of population; particularly given that bankruptcy debtors have more income volatility than average Americans. Bankruptcy debtors also tend to be middle-class rather than the working poor, a fact that may make up for this income volatility in the sample.

Furthermore, 40% of the sample had missing addresses and were more likely to be more disadvantaged with lower incomes and higher use of payday loans. Second, due to a small sample size, the authors of this study could not conduct group analyses based on income as Friedline and Kepple had accomplished in their study.\footnote{Friedline & Kepple, supra note 104, at 58.} Future studies with a larger sample size may consider analyzing data on different income groups. Third, while it is common to utilize different data sources of different reference years, due to limited data availability,\footnote{Fowler et al., supra note 22, at 696-97.} this study used consumer data of 2005 as compared to addresses of payday lenders and banks and credit unions of 2007. Thus, bias could have been introduced based on the extent to which the location of consumers, payday lenders, and banks and credit unions changed between 2005 and 2007. Fourth, due to the unavailability of data, this study did not control for other unobserved variables, such as age,
race, gender, financial literacy, unexpected hardships, and comfort level with other barriers to mainstream banks, which may have affected payday loan use. The authors attempted to overcome some of the data limitations in the following ways. While federal bankruptcy courts do not require filers to enter gender when filing, the authors used filers' names to create a gender variable. The inclusion of a gender variable in the models neither improved model fit nor was it a significant factor to determine payday loan use. The authors additionally explored how the inclusion of homeownership may have served as a proxy for some of the missing variables, (e.g., race and ethnicity) as evidenced by U.S. census data which revealed clear differences in homeownership rates by race and ethnicity.\textsuperscript{132}

\textbf{G. Other Study Implications on Related Subjects}

As demonstrated in this study, homeownership was significantly related to decreases in the likelihood of payday loan use. This finding demonstrated that homeownership was a protective factor against payday loan use, which was consistent with previous studies.\textsuperscript{133} Policymakers should look to implement policies that build consumers' financial asset portfolios, encourage the purchase of homes and the development of other financial assets, such as bank savings accounts, and to curb the use of costly alternative financial services such as payday loans.\textsuperscript{134}

It is worthwhile to consider two findings on the presence of children and the accessibility of traditional banks and credit unions. First, findings showed that increases in the number of children were associated with increases in the likelihood of payday loan use. There appears to be added costs for the added number of children that is not captured by income-to-needs ratio (i.e., income divided by poverty thresholds). For instance, a household may


\textsuperscript{133} Younghée Lim et al., The Role of Middle-Class Status in Payday Loan Borrowing: A Multivariate Approach, 59 SOC. WORK 329, 335 (2014).

\textsuperscript{134} See generally Julie Birkenmaier & Sabrina Watson Tyuse, Affordable Financial Services and Credit for the Poor: The Foundation of Asset Building, 13 J. COMMUNITY PRAC. 69 (2005); Sherraden et al., FIN. CAPABILITY AND ASSET DEV.: RES., EDUC., POL'Y, & PRAC. 3-43 (Oxford University Press 2013).
have enough income to escape extreme material hardship in the context of federally-defined poverty. Nevertheless, the household may not have enough to cover other expenses incurred by unexpected medical and other needs due to financial vulnerability.\textsuperscript{135}

Second, accessibility of traditional banks and credit unions indicated by distance and density of those establishments was not a significant factor in determining payday loan use. It may be that the low- to moderate-income consumers in the study are extremely economically disadvantaged, and they have low credit scores or no credit history to take advantage of banks and credit union accessibility. It also may be that low- to moderate-income consumers have no incentives to use bank products because of negative prior experiences with bank products and personnel, and/or they lack knowledge of the affordable products offered by community-based credit unions. Future research should further investigate what the accessibility of traditional banks and credit unions means for low- to moderate-income consumers.

CONCLUSION

Access to payday loans increases the likelihood of using payday loans. Snowballing payday loan debt can strip financially vulnerable consumers of opportunities to develop assets, hamper convenient access to traditional and non-predatory banking products marketed to unbanked and underbanked consumers, and reduce low- to moderate-income consumers' abilities to save and acquire wealth. More research is needed to better understand the causal mechanisms through which the accessibility of payday lenders and regulations of the payday lending industry impacts consumers' use of payday loans, as well as the social welfare implications of payday loan use among consumers in the local economy. Deeper, macroeconomic reasons why consumers use alternative financial services also need to be addressed including declining wages,\textsuperscript{136} a greater reliance on credit and the

\textsuperscript{135} Trey Bickham & Younghee Lim, \textit{In Sickness and in Debt: Do Mounting Medical Bills Predict Payday Loan Debt?}, 54 SOCI. WORK IN HEALTH CARE 518, 527 (2015).

\textsuperscript{136} Younghee Lim et al., \textit{supra} note 131, at 335-36.
disappearance of small dollar credit, and increased income volatility.\textsuperscript{137}

In the meantime, however, mayors, and city council members should use their zoning power wisely in light of our study results. Our study is the first study to investigate the relationship between distance of payday lenders and consumers’ residence. Until now, there has been no empirical data investigating the relationship between spatial distribution of payday lenders and consumers’ use of alternative financial services. Here, we close this gap and provide useful data on how distance and density of alternative financial services is associated with consumers’ likelihood of alternative financial service use.

We do this by testing two hypotheses. Consistent with \textit{distance decay theory}, our first major finding revealed that increases in the distance of payday lenders from the consumers’ home addresses were associated with a decreased likelihood of payday loan use. Consistent with the \textit{localization economies framework}, our second major finding revealed that increases in the density of payday lenders within 1.5 miles of the consumers’ home addresses were associated with an increased likelihood of payday loan use.

The second finding on the association between density of payday lenders and payday loan use is consistent with the previous research findings on density of AFS and AFS use. More specifically, a higher density of AFS storefronts (e.g., auto title loans, payday loans, tax refunds, pawn shops, and rent-to-own stores) were related to more frequent AFS use.\textsuperscript{139} Considering that higher density can be attributed to lax laws at the local or state level, this finding suggests that more lenient payday loan laws increase consumer use of loans.\textsuperscript{140}

Future research should more carefully examine how local ordinances (namely the regulation of payday distance and density) impact payday loan use, controlling for other factors influencing consumer use of payday loans. Given that there are approximately

\textsuperscript{137} Baradaran, \textit{supra} note 84, at 533-34.
\textsuperscript{138} Younghee Lim et al., \textit{supra} note 131, at 335 (2014); Servon & Castro-Cosio, \textit{supra} note 95, at 14-18.
\textsuperscript{139} Friedline & Kepple, \textit{supra} note 104, at 71-72 (2017).
\textsuperscript{140} McKernan et al., \textit{supra} note 20, at 217.
250 local ordinances pertaining to payday distance and density,\textsuperscript{141} new research to measure the impact of such ordinances would be very useful.

Regardless of what future researchers find, however, the findings of this study imply important considerations for policymakers in locales. Many localities have ruled that payday lenders must be at least 500ft. (0.09 miles) away from residential areas.\textsuperscript{142} According to our study results, however, the 500ft. threshold may be inadequate. Consumer use of payday loans decreases sharply up to the first 3 miles (15,840ft.) of distance from residence and thereafter decreases more gradually (see Figure 2). In a similar vein, this study found that density at a 1.5-mile (7,920ft.) radius is most significant in predicting consumer use of payday loans (see Figure 3). Local governments that wish to implement payday loan ordinances to effectively reduce consumer use of payday loans should carefully consider the changes in the effect of payday loan use as miles increase and as density increases within a 1.5-mile radius.

Above all, localities that wish to limit residents' use of payday loans should carefully examine how ordinances of distance and ordinances of density may interact and examine what kinds of ordinance combinations will yield the best outcomes for residents' well-being. Mayors, city council members, and city planners can help consumers by using their local zoning and regulatory power to carefully consider whether to allow payday lending in their cities and towns. The businesses located near our homes have a deep abiding influence on us, and those in control of those business locales have the power to change lives.

\textsuperscript{141} Telephonic interview with Steven Graves, February 5, 2018 (Professor Graves keeps a database of all local ordinances as they are passed.).

\textsuperscript{142} Martin & Mayer, supra note 2, at 152-53.