Rental Property Owner Stress During the Covid-19 Pandemic: Results from a Minneapolis, MN survey.

Daniel Kuhlmann, PhD
Iowa State University
dok@iastate.edu

Jane Rongerude, PhD
Iowa State University
jrong@iastate.edu

Biswa Das, PhD
Iowa State University
dbas@iastate.edu

Lily Wang, PhD
George Mason University
lwang41@gmu.edu

Draft: Please do not cite or circulate without our consent.

Abstract:

The Covid-19 pandemic has placed a unique strain on the US housing system. Unprecedented job losses combined with a public health imperative to keep people housed pushed policymakers to issue a series of orders pausing residential evictions. These moratoria kept people in their homes but did little to address underlying housing stress. In this paper, we document the early impact of the pandemic on private rental housing owners with the results of a new survey. Between December 2020 and January 2021, we surveyed rental property owners in Minneapolis, Minnesota, asking questions about their businesses and about how the pandemic has affected their ability to operate rental properties. In this paper, we present a descriptive analysis of their responses. Nearly half of the respondents to our survey reported that the pandemic affected their business in some way. The most commonly reported impacts were an anticipated decline in cash flow and increases in rent arrears across their portfolios. We find associations between property owner stress and rents, portfolio size, race, and owning physically deficient properties. The results of our analysis will be useful for policymakers as they continue to confront housing insecurity generated by the Covid-19 pandemic.

Introduction

The ongoing Covid-19 pandemic has placed a unique strain on the US housing system. In March 2020, as the virus spread across the country, local and state governments issued a series of public health orders, closing non-essential businesses and directing people to shelter-in-place. These orders, combined with general economic uncertainty, caused businesses to close *en masse*, leading to furloughs and an unprecedented spike in unemployment claims. The economic fallout of the pandemic was immediate, which in turn raised concerns among policymakers that households would miss rent payments leading to widespread evictions and displacement. Improving housing security is often a goal for policymakers, but the pandemic increased its relevance, as keeping people safely housed now had clear implications for public health. The response, at least initially, was a series of orders temporarily stopping new eviction fillings. These moratoria essentially froze the housing system, keeping people housed with no concrete long-term solutions to the insecurity the pandemic created.

In this paper, we document the pandemic's early impact on the rental housing system with a survey of property owners in Minneapolis, Minnesota. Minneapolis is a good site for this research, as the pandemic immediately impacted the city's economy, and state and local officials responded with an aggressive set of emergency policies. Between February and March 2020, the unemployment rate in the Minneapolis-St. Paul-Bloomington metropolitan statistical area increased from 3.1 to 11.8% (Statistics, 2021). The governor of Minnesota quickly closed K-12 public schools (March 15), halted indoor dining (March 16), and issued a stay-at-home order (March 25) to slow the virus's spread.[1] On March 23, the governor issued executive order 20-14, prohibiting residential landlords from terminating leases.[2] The moratorium halting residential evictions, which the federal CDC order eventually strengthened, lasted until September 12, 2021 (although the moratorium continues to protect certain tenants until June 1, 2022.)[3]

We collected survey responses from rental property owners in Minneapolis between December 2020 and January 2021. We contacted owners via email using the Minneapolis rental property inventory, a database containing information on the characteristics and ownership of nearly all rental properties in the city. In our survey, we asked questions about the demographic characteristics of residential rental property owners, characteristics of their rental housing businesses, and series of questions about whether and to what extent

---

[1] https://www.mprnews.org/story/2021/03/06/timeline-covid-19-minnesota

[2] https://www.leg.mn.gov/archive/execorders/20-14.pdf

[3] https://www.kare11.com/article/news/state/some-minnesota-renters-protected-federal-eviction-moratorium-ends/89-de1915cc-6993-458c-9b54-bc3625b71fb7

the pandemic had affected their ability to operate their rental property business. Here we present our initial findings, examining the scope of the pandemic's impact on rental property owners and analyzing the demographic and business-model correlates of pandemic stresses.

In conducting a survey of existing literature, we observed that there is relatively little prior research on the backgrounds and experiences of private rental owners (particularly small, non-institutional investors). In most rental housing scholarship, researchers focus on the characteristics and experiences of rental tenants. This is understandable, as policymakers are often most concerned about the housing outcomes of renters. But private investors own and operate the vast majority of rental housing in the US. To understand how rental markets operate and design programs to improve housing outcomes, we must understand the characteristics, backgrounds, and business models of private housing providers. Our study provides a template for this important and relatively novel type of housing research.

Our survey responses suggest that the Covid-19 pandemic affected the business of many rental property owners in Minneapolis. We ask questions about five different pandemic-related business impacts, including increased frequency of rental arrears, premature vacancies, increased overall vacancy, declines in cash flow, and increased difficulty in renting out vacant units. Of the over 1,500 responses we received (representing over 13% of all residential rental property owners in the city), nearly 49% reported that their businesses were affected in at least one way. The most common impact reported was an anticipated decline in cash flow, followed by increased rental arrears, an increase in overall vacancy numbers, and more difficulty leasing vacant units.

In addition, we estimate a series of regressions to examine the demographic and business-related correlates of business stress during the pandemic. Our analysis reveals a few general themes. First, owning more rental properties is positively associated with reporting pandemic-related stress. This could be because owners with large portfolios have greater exposure to pandemic-related risk, but it could also suggest differences in the tenant-screening, management, or business models of larger rental property operators. Second, we find a strong and consistent association between average rent and pandemic stress, with owners of lower-rent properties more likely to report operational impacts. The health and economic impacts of the pandemic fell disproportionately on lower-income people. Thus it should not be surprising that owners renting to these tenant populations were more likely to experience impacts on their businesses. Third, we find that black owners were more likely to report pandemic stress than other racial groups. While our survey does not allow us to examine the direct cause of this disparity, it is especially noteworthy given that black owners are substantially underrepresented among rental property owners in Minneapolis. Finally, owning a physically deficient property (according to the Minneapolis rental registry) was one of the most consistent predictors of property owner stress during the pandemic. Based on the findings, it is evident that the pandemic has disproportionately impacted financially stressed property owners. As a consequence, this could make regulating these owners more challenging and could further threaten the wellbeing of their tenants.

Our paper proceeds as follows. In the next section, we summarize the previous research on rental property owners' demographic characteristics and business models. We then describe our survey and provide validation of our survey responses. Next, we provide a summary of our survey results. Finally, we end our paper with a discussion of the policy implications of our research.

Correlates of Property Owner Stress

Housing researchers frequently consider the role of private property owners in rental markets, yet rarely are owners the central focus of policy-oriented research and evaluations (Garboden & Rosen, 2018). Although analysts generally acknowledge the important role that owners play in shaping housing outcomes (Mallach, 2007), they seldom consider the constraints that shape owner's behavior. Thus, we know a good deal about how property owners' behavior affects housing security through the supply-side of the rental housing market, but relatively little about the factors influencing owners' decision-making and behavior.

A good example of this somewhat counterintuitive treatment of owners in the housing literature comes from recent work on residential evictions. In a subset of this broad research agenda, scholars seek to understand why some property owners use evictions more than others. Researchers studying these questions have two theories that seek to explain why owners use the eviction process. One group argues that rental owners at the bottom of the market use eviction to profit from the uneven power dynamic between themselves and their tenants (Desmond, 2015; Desmond & Gershenson, 2016). These owners know that their tenants have few housing options due to limited resources, employment insecurity, and checkered rental histories. They can thus set rents relatively high, feel little pressure to improve the condition of their property, and use eviction to remove tenants when they fall into arrears. Under this paradigm, eviction-induced housing insecurity is the business model (Desmond & Wilmers, 2019).

Other researchers suggest that the owner who uses eviction-as-default is an exception and that most owners seek to work with tenants to avoid displacement, only using the eviction process when they have exhausted other options (Balzarini & Boyd, 2020; Raymond, Miller, Lucas, & Pokharel, 2016). The prevalence of evictions among these owners is not strategic but rather the result of owners' limited resources. Negative housing outcomes are not an intentional business decision but rather the result of owners' marginal market position, tenants, or both.

The conflict between these two extreme characterizations of the eviction process lies in their treatment of property owners in the eviction system and their assumptions about the resources of the property owners themselves. Under the first paradigm, owners have the resources and management expertise to exploit vulnerable tenants. Under the second, owners themselves are vulnerable, often undercapitalized, and lack management and legal experience. These debates highlight the importance of understanding the role and characteristics of not only tenants but those who own and manage rental properties. They are also two extremes, leaving room for a more nuanced exploration of the space between these two poles.

While housing policy researchers too often give the characteristics of property owners short shrift, scholars from other fields have placed property owners more central in their research. For example, understanding the investment strategies, capitalization, and returns of rental property investors is a common research question among real estate finance and economics analysts (Özogul & Tasan-Kok, 2020; Seay, Anderson, Carswell, & Nielsen, 2018). Scholars in these fields have studied whether investment returns differ based on geographic portfolio diversity (Feng et al., 2021), management practices (Brown et al., 2008), and asset types (Eichholtz et al., 1995) in this broad literature.

Although we frame and measure it differently, we are interested in a similar question about the factors influencing rental business stress. Instead of measuring property-level and portfolio returns in general, we use our survey to ask about rental business disruptions at the property and portfolio level during the pandemic. Ultimately, we set out to examine whether certain property owners were more likely to experience pandemic-related operational stress and from there to better understand the constraints that owners face more generally.

In investigating the impact of the pandemic on rental property owners, one can approach the issue of stress in two ways. In the first, an owner's stress is an extension of how the pandemic has affected their tenants. If a property owner rents to a population that experienced a disproportionate share of the economic and health impacts of the pandemic, one would expect that their tenants' would experience greater difficulties upholding the terms of their leases, and that these owners would feel the effect of the pandemic more strongly. For the second, an owner's stress reflects that individual's business choices and resources and is therefore an extension of how the pandemic has affected their lives directly.

If an owner faced unexpected expenditures or lost a non-rental source of income during the pandemic, it could affect their ability to maintain and manage their property and their feelings about the experience of being a property owner more generally.

While the pandemic has affected everyone in society, there is growing evidence that the health and economic distress produced by the pandemic were not distributed evenly but rather amplified preexisting social vulnerability (Chetty, Friedman, Hendren, Stepner, & Team, 2020; Gemelas, Davison, Keltner, & Ing, 2021; Kim & Bostwick, 2020). The risk of experiencing severe health impacts from Covid-19 is higher for older populations and those with preexisting medical conditions (Cummings et al., 2020). Low-wage workers, particularly those working in hospitality and other service industries, were more likely to experience layoffs and furloughs during the pandemic (Chetty et al., 2020; Jin Cho & Winters, n.d.). Before the pandemic, research had already established that both health and economic vulnerability correlate strongly with race and ethnic background (Kawachi, Daniels, & Robinson, 2005). These patterns continued and were amplified during the pandemic (see for example: [Gaynor & Wilson, 2020; Gil et al., 2020; Golestaneh et al., 2020]). We might thus expect that property owners renting to these vulnerable tenant populations are more likely to experience pandemic-related stress. Although we do not measure tenant demographic characteristics in our survey, we do ask about portfolio rents, which may correlate with tenants' economic vulnerability.

Rents are not the only component of the residential rental property system that affect tenant vulnerability. In several studies, analysts find that an owner's management experience is an important predictor of housing security. For example, Garboden and Newman (Garboden & Newman, 2012) suggest that particularly at the bottom of the rental market, experienced owners manage their properties more efficiently, leading to better tenant outcomes. Other researchers find that multifamily rental owners who live in their buildings are better able to anticipate and preemptively respond to tenant stress (Ellen et al., 2013). Not only does living in one's rental property matter, but it seems so does living nearby. Fisher and Lambie-Hanson (2012) compare mortgage defaults between owner-occupiers and local and non-local investors. They find slightly higher default probabilities among investors generally and local investors specifically.

There is also evidence that the size of an owner's portfolio matters for tenant outcomes as portfolio size impacts property management. Some debate exists as to whether larger portfolios lead to better or worse tenants outcomes on balance. On the one hand, owners with larger portfolios may benefit from leasing and management economies of scale (Mallach, 2007; Newman, 2005). These owners may have better systems to screen new renters and more resources to respond preemptively to tenant hardships. On the other hand, particularly for owners whose rental units are spread out, economies of scale may be limited, especially for management and maintenance (Charles, 2020). Owners of large portfolios may thus have more difficulty operating their portfolios, resulting in either increased management costs or neglect. There is some evidence that this is the case for investors in single-family rentals (Immergluck, 2018). Analysts have raised concerns that management inefficiencies among these owners negatively affect neighborhood, property, and tenant outcomes (Immergluck & Law, 2014; Travis, 2019).

Along the same lines, a property owner's financial resources may determine an owner's business model, how they manage their properties, and, ultimately, the experiences of their tenants. Owners with more personal wealth and less debt may choose to spend more on property maintenance and renovations (Brown et al., 2008; Harding et al., 2000). Similarly, they may be better able to work with tenants who are at risk of breaking the terms of their leases. If an owner relies on rental income to cover debt payments, they may be less willing (or see themselves as unable) to wave or offer reduced rent for struggling tenants (Balzarini & Boyd, 2020; Mallach, 2007).

Relatively little research exists regarding whether other demographic characteristics of property owners are associated with management practices and tenant outcomes. For example, no researcher, to our knowledge, have examined how an owner's gender influences their management behavior. The little research on property owner demographics and management tends to focus on racial and ethnic backgrounds. There is some evidence that a property owner's race, particularly if they are from the same racial group as their tenants, shapes management practices and tenant interactions (Evans & Porter, 2015; Zannella et al., 2020). Greenberg, Gershenson, and Desmond (2016) find that Hispanic tenants are less likely to face eviction when they rent form Hispanic property owners in Milwaukee.

A property owner's race may correlate with housing outcomes if non-white owners face discrimination in purchasing or lending markets. During the 2008 housing crisis, for example, lenders steered investors in predominantly black neighborhoods into riskier mortgage products and, as a result, those investors were more likely to experience defaults (Rosenblatt & Sacco, 2018). Similarly, Mayer (1985) finds that owners of properties in non-white neighborhoods have more difficulty accessing debt with favorable terms, leading them to underinvest in property maintenance. Finally, although there has been little research on access to debt for non-white real estate investors, there is substantial evidence suggesting that, on average, non-white borrowers (although not a monolithic group) face discrimination in residential mortgage markets. This was particularly true in the lead-up to the 2008 housing crisis (Hanson et al., 2016; Ladd, 1998; Steil et al., 2018). Black borrowers were more likely to have purchased homes with risky, sub-prime mortgages and, as a result, subsequently defaulted on their debt (Faber, 2013; Rugh & Massey, 2010).

In summary, we expect that property owner stress during the pandemic will correlate with their own preexisting vulnerability and the vulnerability of their tenants. Although our survey captures limited information about tenant characteristics, we ask detailed questions about property owners themselves. Our study is thus most useful in understanding what demographic, economic, and business model characteristics of property owners correlate with stress during the Covid-19 pandemic. In the next section, we describe our models in detail, followed by a summary of our results. We end with a discussion of the policy implications of our study and areas for future research.

Data and Methods:

To examine the impact of the pandemic on rental housing providers, we distributed a survey to owners of one or more rental properties in Minneapolis between November 2020 and January 2021. In most previous studies of private rental housing, including several administered during the pandemic, researchers survey tenants rather than property owners (Manville et al., 2020). There are likely several reasons for this focus. First, when policymakers design rental-housing programs, their primary goal is to improve the experiences of tenants rather than those of property owners and managers. Surveying tenants about the characteristics and quality of their units, interactions with owners, and financial insecurity is a sensible unit of analysis with this goal in mind.

Second, researchers can infer the full population of rental housing units in a particular place with a well-designed tenant survey. Suppose a study's goal is to understand the characteristics of rental housing in a given geography. In that case, surveying tenants can gather basic information about the rental housing stock, similar to a study that is representative of either rental units or property owners. But while the coverage may be similar, the information researchers can gather from tenants is different from that property owners can provide. Tenant surveys generally focus on, understandably, the experiences and financial situations of tenants. Tenants, however, can offer only limited information on the owners and managers of their rental units. Consequently, we know comparatively less about property owners' characteristics, behavior, and financial constraints than we know about their tenants.

Finally, in many past studies, convenience likely plays a role in the decision of researchers to focus on tenants. Property owners are a particularly difficult population to contact (Garboden & Rosen, 2018). Few cities have detailed and complete registries of rental properties, and fewer still contain up-to-date contact information for property owners. Even where contact information is available, property owners are often hesitant to respond to surveys. In part, this hesitancy stems from the preponderance of market research in the real estate industry. Professional market research often compensates respondents; thus property owners may expect higher compensation than is common in academic and policy-focused research. And while property owners may be used to receiving survey requests, they may worry that their responses will reveal proprietary information to competitors. Further, rental property owners, particularly those renting at the bottom of the market, may feel that popular and academic portrayals of tenant/property owner interactions represent them poorly. As a group, they may thus be hesitant to provide accurate responses to surveys if they believe the resulting research will add to the perceived stigma of their profession.

Despite these reasons, we argue that there is a strong case to be made for surveying property owners both in the context of the pandemic and more generally to improve our understanding of private rental market dynamics. While an understandable response to an unprecedented crisis, eviction moratoria placed a unique burden on rental property owners. By preventing property owners from evicting tenants for non-payment of rent, eviction moratoria shifted the financial burden of the pandemic onto property owners. Although later in the pandemic, the Coronavirus Aid, Relief, and Economic Security Act and American Rescue Plan provided some financial support to some property owners. We are interested in how, if at all, the pandemic affected the businesses of rental property owners overall.

Even outside the context of the pandemic, housing scholars are increasingly interested in studying the characteristics and behavior of rental property owners and managers. In the United States, even among low-income tenants, private property owners operate most rental housing units. According to the 2019 American Housing Survey, over 93% of rental units in the US are privately owned and operated. While there is a substantial literature that documents the experiences and constraints of tenants, we know less about the motivations, behaviors, and financial situations of property owners. While scholars have documented extreme cases of property owner neglect and abusive behavior, we ultimately know little about how common these types of interactions are and even less about what motivates this type of behavior.

To study how the pandemic affected residential property owners, we used the Minneapolis rental registry database to email owners of rental properties, asking them to complete a short online survey. The Minneapolis code of ordinances requires that owners obtain a rental license before renting out their property. Although many cities have rental registry requirements, the Minneapolis ordinance is more comprehensive than most, requiring a valid license to let any property, including single-family and condominium units.[4] The license application requires that property owners provide detailed contact information, including their email addresses. The city of Minneapolis then publishes this information through its open data portal.

We used these email addresses to contact property owners, inviting them to complete an online survey. We designed our survey instrument to gather information on the general characteristics of property owners and their rental portfolios and specific information on how the pandemic has affected their businesses. Because our unit of analysis is the property owner, when designing our instrument, we weighed the trade-offs between gathering detailed information on individual units within their portfolios, and potentially designing too detailed a survey that drives down response rates. While it would be interesting to be able to link pandemic impacts and property owner responses about the characteristics of individual units, we feared that property owners would need to consult their records to provide this level of detail and thus either fail to respond or provide incomplete responses.

Our survey begins with a detailed series of questions about the property owner and their rental property portfolios. In addition to general demographic information, we ask whether the property owner has other sources of income and how reliant they are on income from their rental property. We then ask a series of questions about their portfolios. To get an idea about the location of their rental properties, we first ask for the four zip codes where the owner owns the most properties. Although not a complete inventory of rental locations, these results give us an idea of the neighborhood characteristics of their rental properties. We then ask questions about their portfolios' rent, vacancies, building size, and cash flows. We ask questions at the building level for the cash flow, vacancy, and building size questions. For example, we ask how many rental properties they own in single-family buildings and in 2-4, 5-10, 11-25, and 25 plus multifamily buildings and the approximate vacancy across each building type. We capture rents at the unit level—asking respondents the number of units they rent in each of five rent bins (i.e., under $750, $751 to $1,000, etc.).

After the demographic and portfolio questions, we ask a series of questions about how the pandemic has affected their businesses. We ask about impacts across several broad areas, including missed rent, premature vacancies, leasing, and missed rent payments. For each of these impact areas, we ask respondents whether they have experienced them since the start of the pandemic, how common these impacts are, and how their frequency has changed since the pandemic.

[4] See https://www2.minneapolismn.gov/business-services/licenses-permits/rental-licenses/ for information on the rental licensure process.

Finally, we ask a series of questions about how property owners have responded to the pandemic. Of particular interest to our current analysis, we ask whether property owners have offered any of the following forms of assistance to their tenants during the pandemic: free rent, reduced rent, the ability to break leases without penalty, and payment plans for rent arrears. We also ask respondents about their use of evictions, whether they have applied and been approved for government assistance programs, whether they have sought assistance from their lenders, or postponed maintenance.

The validity of our analysis hinges on the representativeness of the property owners who responded to our survey. Ideally, to examine our survey's representativeness, we would compare the characteristics of our respondents with data on the true population of rental property owners in the city. Unfortunately, to our knowledge, there is no reliable source of data on the population of rental property owners, either at the national level or in Minneapolis. We thus use a second-best validation method to first check the representativeness of the underlying registry to the rental housing stock in Minneapolis and then compare how our responses compare to the registry. In other words, we assume that if the registry captures most rental properties in the city, then it must also capture the universe of rental property owners. We can then compare the characteristics of the survey responses to those included in the registry.

In Table 1, we present the results of this comparison. In Panel A, we show the count of rental housing units by the total number of units in the structure based on 2019 one-year ACS estimates against the same breakdown from the rental registry. The registry is very comprehensive. Both in raw counts and proportionally, the registry closely mirrors the ACS estimate of the Minneapolis housing stock.

In Panel B, we compare the registry with our survey responses on a similar breakdown of units in the structure. Again, the self-reported responses we received in our survey match closely with the registry. In Panels C and D, we compare the size of property owner portfolios in the registry with our survey results. This is, admittedly, an imperfect comparison. From the registry, we can only measure the size of a property owner's portfolio in Minneapolis. In the survey, however, we ask about all properties in their portfolio, not just those in Minneapolis. Perhaps not surprisingly, we find that both in terms of total rental units and properties, the portfolios of our survey respondents are larger than those in the registry.

Finally, in Panel E, we compare the self-reported rents in our survey against gross rent estimates from the 2019 one-year ACS. Again, this comparison is imperfect since we did not ask specifically about the property owner's portfolio of Minneapolis rentals. Compared to the Minneapolis housing stock, our survey respondents reported charging higher rents. According to the ACS, 45% of rental units in Minneapolis have gross monthly rents under $1,000, compared to 19% of units owned by our survey respondents. In sum, our results appear representative of Minneapolis property owners based on building size but possibly under-represents property owners with single-unit portfolios and those with low-rent units.

Table 1: Response Validation

A. Comparing Registry to ACS Estimates Based on Building Types.

	Estimates		Rental Registry	
	Units	**Percent**	**Units**	**Percent**
Single-Family	13,452	13.9%	13,536	13.6%
2 to 4 Units	17,718	18.3%	17,620	17.7%
5 to 9 Units	4,872	5.0%	4,741	4.7%
Over 10 Units	60,873	62.8%	63,921	64.0%

B. Comparing Registry to Survey Responses Based on Building Types.

	Rental Registry		Survey Results	
	Properties	**Percent**	**Properties**	**Percent**
Single-Family	13,536	57.6%	2,085	51.9%
2 to 4 Units	7,483	31.9%	1,450	36.1%
5 to 10 Units	896	3.8%	232	5.8%
11 to 25 Units	957	4.1%	106	2.6%
Over 25 Units	614	2.6%	144	3.6%

C. Comparing Registry to Survey Responses Based on Portfolio Size.

	Rental Registry		Survey Results	
	Owners	**Percent**	**Owners**	**Percent**
One Property	9,278	82.1%	661	51.6%
2 to 4 Properties	1,630	14.4%	485	37.8%
5 to 10 Properties	276	2.4%	83	6.5%
Over 10 Properties	120	1.1%	53	4.1%

D. Comparing Registry to Survey Responses Based on Building Types.

	Rental Registry		Survey Results	
	Owners	**Percent**	**Owners**	**Percent**
One Unit	6,598	58.4%	478	37.3%
2 to 4 Units	3,402	30.1%	489	38.1%
5 to 10 Units	623	5.5%	167	13.0%
Over 10 Units	681	6.0%	148	11.5%

E. Comparing Survey Responses to ACS Estimates Based on Rent.

	2019 1-Year ACS		Survey Results	
	Units	**Percent**	**Units**	**Percent**
Under $1,000	43,306	45.1%	7,406	18.5%
$1,000 to $1,500	29,277	30.5%	14,417	36.0%
$1,501 to $2,000	16,075	16.8%	12,657	31.6%
Over $2,000	7,278	7.6%	5,590	14.0%

How has the pandemic affected property owners?

We turn now to a summary analysis of the pandemic's impact on Minneapolis rental property owners. We are primarily interested in whether the pandemic has increased the frequency of various leasing and building operations issues. In our survey, we ask respondents for absolute impacts—e.g., since the start of the pandemic have you had any tenants who have missed rent payments, broke their leases, etc.—and how the frequency of these events have changed during the pandemic. Our outcome variables are dichotomous measures of whether the respondent reported the pandemic increased the frequency or severity of operational and leasing issues. These variables include an increase in the frequency of missed rent payments and premature tenant vacancies (i.e., tenants vacating their unit before their lease expiration), whether vacancy across their portfolio has increased during the pandemic, and whether the pandemic has made it harder to sign new leases. In addition to the frequency questions, we also include a measure of whether they anticipate a decline in cash flow across their portfolio in the coming year, whether they have deferred maintenance since the pandemic's start, and whether the pandemic has made them less satisfied owning rental properties.

In Table 2, we describe these outcomes and the proportion of respondents who reported experiencing each impact. Nearly half (49%) of respondents reported that the pandemic affected their leasing and building operations in one of more areas. The most common reported impact, 33% of all Minneapolis respondents, was an anticipated decline in cash flow. This was followed by an increase in the frequency of missed rent, increased vacancy, increased difficulty to sign new leases, and an increase in the frequency of premature vacancies with 24%, 12%, 12%, and 11% of respondents reporting these impacts, respectively. Additionally, 26% of all respondents reported deferring maintenance since the start of the pandemic, and 12% indicated that the pandemic had lowered their satisfaction with owning rental properties.

Table 2: Descriptive Statistics

	Mean/Proportion	Median	Min	Max
Pandemic Impacts				
Missed rent more frequent? (1 = Yes)	24%	--	0	1
Higher vacancy? (1 = Yes)	12%	--	0	1
Anticipated decline in cash flow? (1 = Yes)	33%	--	0	1
Premature vacancy more frequent? (1 = Yes)	11%	--	0	1
Harder to sign new leases? (1 = Yes)	12%	--	0	1
At least one of the above impacts? (1 = Yes)	49%	--	0	1
Deferred maintained? (1 = Yes)	26%	--	0	1
Less satisfied owning rental property? (1 = Yes)	12%	--	0	1
Owner/Business Characteristics				
Male? (1 = Yes)	55%	--	0	1
Under 35? (1 = Yes)	17%	--	0	1
Over 65? (1 = Yes)	15%	--	0	1
Black? (1 = Yes)	3%	--	0	1
Has other job? (1 = Yes)	75%	--	0	1
College Degree? (1 = Yes)	85%	--	0	1
Has debt on properties? (1 = Yes)	76%	--	0	1
Owned rental properties for less than 3 years? (1 = Yes)	19%	--	0	1
Owned rental properties for more than 15 years? (1 = Yes)	24%	--	0	1
Lives out of state? (1 = Yes)	11%	--	0	1
Lives in Minneapolis? (1 = Yes)	54%	--	0	1
Owns any Tier 2 or 3 Properties? (1 = Yes)	10%	--	0	1
Over 50% of income from operating rental properties? (1 = Yes)	10%	--	0	1
Income under $50k? (1 = Yes)	13%	--	0	1
Income over $125k? (1 = Yes)	38%	--	0	1
Total rental properties	3.2	1	1	430
Total Cash Flow	$24,969	$3,500	$0	$1,800,024
Average Rent	$1,389	$1,250	$750	$2,250

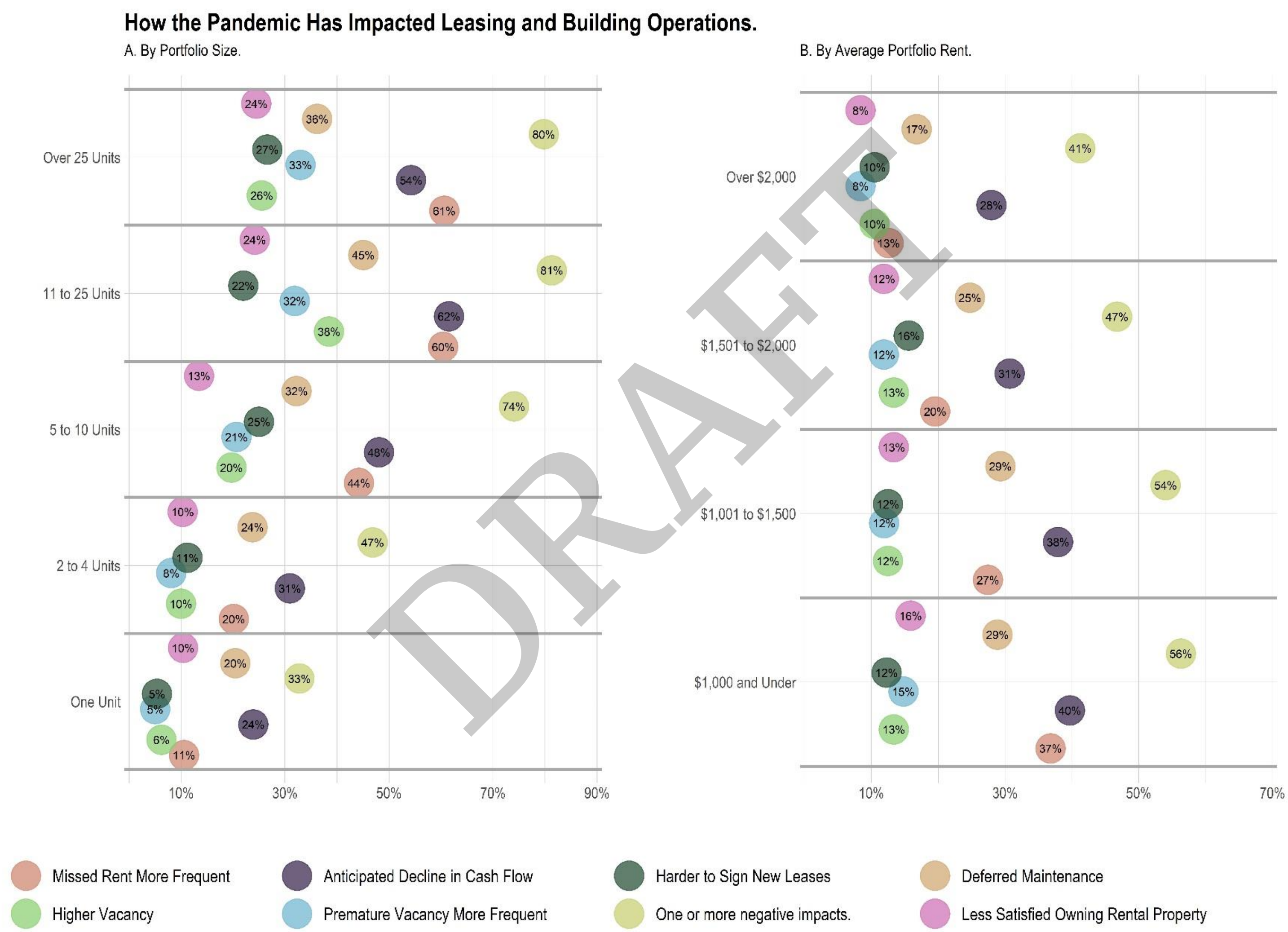
These impacts did not affect all property owners, however. In the next section, we provide a more detailed analysis of the correlates of pandemic-related impacts to rental property owners. To illustrate the unevenness of the pandemic's impact, we first show variation in these outcomes based on two property owner characteristics—the size of their rental portfolios and the average rent they charge across all their rental units. We present these comparisons graphically in Figure 1. In Panel A, we show differences in frequencies across these eight impact areas by the total size of the property owner's portfolio. Across all areas, owners of large rental portfolios are more likely to report pandemic impacts than those with only a few rental units. For example, only 33% of single-unit property owners reported having any impact from the pandemic, while 80% of property owners with over 25 rental units reported pandemic-related impacts.

This could be a probabilistic outcome rather than a substantive one since owning more rental units exposes property owners to more tenant-related risk. To illustrate this, suppose that there is a 20% chance that the pandemic will harm a tenant in a way that affects their rental stability. Assume also that this probability is uniform across all tenants (an assumption that likely does not hold since income and exposure to economic risks likely correlate with unit and property types). If this is the case, we should expect that approximately 20% of single-unit property owners would experience some pandemic-related impact on their building operations. For owners of two rental units, this probability increases to 36%. Again, this example is overly simplified and meant only to illustrate that we should expect that portfolio size will correlate positively with risk exposure and, thus, pandemic stress. However, it is also possible that property owners with larger portfolios are more likely to have business models based on renting to tenant populations that experienced higher levels of economic impact during the pandemic.

In Panel B, we show the same outcomes broken out by average rent charged across the property owner's portfolio. Across most outcomes, there appears to be a negative association between pandemic-related impacts and rent levels. The higher the rent charged across the owner's portfolio, the less likely they are to report having their leasing or operations negatively impacted by the pandemic. For example, among respondents who report charging, on average, over $2,000 a month in rent across their portfolio, 41% reported at least one negative leasing or operational impact since the start of the pandemic. Among respondents who charge less than $1,000 per month on average, in contrast, over 56% reported at least one pandemic impact (recall, for all respondents, 49% reported at least one impact).

The descriptive analysis we have presented thus far highlights two facts. First, the pandemic had a clear and measurable impact on Minneapolis property owners' leasing and building operations. The pandemic has had an unprecedented impact on not only people's health but also their economic well-being. Our results provide clear evidence that these personal and economic stresses have affected the owners of rental properties. Second, our comparisons by portfolio size and average rent suggest that the impacts of the pandemic have not been shared evenly by all property owners. Pandemic-related impacts were more common among property owners with large portfolios and those who own lower-rent units. In the next section, we explore these associations in more detail using a logistic regression model to examine the association between a richer set of property owner characteristics and these pandemic outcomes. This model estimates the probability of the binary independent variable occurring using a set of explanatory variables. As has been highlighted earlier, landlord stress is predicted using a set of landlord characteristics, e.g. size of portfolio, rent levels, cashflow, and other property owner demographic characteristics.

Figure 1: Outcome Summary



Correlates of Pandemic Rental Property Owner Stress

Just as the pandemic has had an uneven impact on individuals, our simple descriptive analysis suggests that the pandemic has had a varied impact on owners of rental properties. In this section, we examine the association between pandemic stress and a richer set of property owner characteristics. In total, we model seven outcomes: whether the premature vacancies or missed rent payments become more frequent since the start of the pandemic, whether vacancy across their portfolio has increased, whether it is harder to lease vacant units, whether they experienced a decline in cash flows, whether the pandemic has made them less satisfied owning rental properties, and whether they have deferred maintenance since their start of the pandemic. In addition, we also include a model measuring whether the respondent reported *any* impact from the pandemic. Because all of our outcome measures are categorical variables (e.g., did the respondent report and increase in vacancy during the pandemic or not), we use logistic regression models, a modeling technique well-suited for binary dependent variables.

In Table 2, we provide a full list of the control variables we included in our analysis. We control for three broad sets of property owner characteristics—two of which we generate from survey responses and one from the rental registry. The first set is survey questions about the general demographic and socioeconomic characteristics of the property owner. We include dichotomous measures of sex (55% of respondents are male), age (17% are under 35 and 15% are over 65), income, and employment (13% earn less than $50,000 per year from all sources, 38% earn over $125,000, 75% have other sources of income, and for 10% of respondents revenue from their rental properties comprise over 50% of their total income), race (3% are black), and education (85% have a college degree).

Next, we include self-reported characteristics of their rental businesses. We include measures of ownership length (19% have owned rental properties less than three years, while 24% have owned properties more than 15 years), the total number of properties in their rental portfolio (mean 3.2, median 1), the total cash flow across their portfolio (mean $24,969, median $3,500), the average rent they charge across their portfolio (mean $1,389, median $1,250), and whether they have any outstanding mortgage debt (76% have debt). Finally, we link the survey responses to the Minneapolis rental registry to create a measure of how close property owners live to their rental properties (54% live in Minneapolis, while 11% live out of state) and whether they own any properties listed in the 2nd or 3rd tiers of the registry (10% own tier 2 or 3 properties). Tier 2 properties have some documented issues affecting safety and habitability, while tier 3 properties have several documented issues, more than one of which poses an immediate threat to renter health and safety.

In Table 3, we present the results of our regression analysis. Although there is some variation between models, a few general themes emerge from this analysis. The first, which confirms what we showed in the descriptive analysis, is that leasing and operations impacts appear positively correlated with portfolio size during the pandemic. Even after controlling for a more robust set of property owner characteristics, our models suggest a positive association between the number of properties in an owner's portfolio and several pandemic operational impacts. For example, each additional property added to a respondent's portfolio suggests a 9% increase in the odds they report experiencing an increase in missed rent payments during the pandemic.

Similarly, an increase in the average rent a property owner charges across their portfolio reduces the odds of various pandemic outcomes. Each $100 increase in average rent, for example, suggests a 4% reduction in the odds that the owner reported at least one leasing or operational impact during the pandemic. In Figure 2, we plot the average marginal effect of average portfolio rent on each of the outcomes in our study. While the size and significance of the associations vary between models, the negative association itself is consistent across outcomes. Our models suggest that the probability of reporting more frequent missed rent, for example, for owners charging average rents of $1,000 is 31%, compared to 10% among those with average rents of $2,250.

Our models also suggest that certain demographic characteristics of property owners are associated with pandemic-related leasing and operations impacts. In general, male property owners are more likely to report pandemic stress than are female and non-binary respondents. Similarly, although with varying degrees of statistical significance, black owners are much more likely to report impacts than are non-black respondents. For example, identifying as black raises the odds the respondents reported an increase in the frequency of missed rent by 163%.

Across most categories, we find a positive association between a property owner's total income and various pandemic stresses. Reporting total income over $125,000 per year, for example, increases the odds that they anticipate a decline in cash flow by 27%. In part, like with portfolio size, this could be more probabilistic than substantive. Higher-income owners may own more properties and thus experience more pandemic-related risk, which would increase the likelihood the pandemic impacted leasing and operations. Importantly, however, higher-income property owners appear more able to weather these impacts. Reporting income over $125,000 lowers the odds that a respondent deferred maintenance during the pandemic by 27%.

Owning at least one low-quality, tier 2 or 3 property is one of the strongest and most consistent predictors of reporting pandemic stress. Owning a tier 2 or 3 property, for example, increasing the odds of reporting one or more leasing or operational impacts by 168%. Owning a property the city has flagged as distressed is also associated with anticipated declines in cash flows, increased vacancy, more frequent missed rent payments, and lowered satisfaction owning rental properties.

Table 3: Regression Results

	Dependent Variable:															
	One or More Impact		**Premature Vacancy (More Freq.)**		**Missed Rent (More Freq.)**		**Higher Vacancy**		**Leasing Units Harder**		**Decline in Cash Flow**		**Less Satisfied**		**Deferred Maintenance**	
Characteristic	*OR* [1]	*p-value* [2]	*OR* [1]	*p-value* [2]	*OR* [1]	*p-value* [2]	*OR* [1]	*p-value* [2]	*OR* [1]	*p-value* [2]	*OR* [1]	*p-value* [2]	*OR* [1]	*p-value* [2]	*OR* [1]	*p-value* [2]
Male?	1.33	.022**	0.9	0.57	1.15	0.37	1.32	0.16	1.13	0.5	1.24	.093*	0.95	0.78	0.89	0.38
Black?	1.85	0.11	0.99	0.98	2.63	.011**	2.27	.064*	0.89	0.83	1.11	0.77	1.24	0.64	2.15	.039**
Under 35?	0.99	0.95	1.27	0.34	0.89	0.59	0.62	0.12	1.67	.026**	0.87	0.45	0.85	0.53	0.81	0.28
Over 65?	0.74	0.17	0.43	.028**	0.47	.006***	0.65	0.19	0.44	.040**	0.95	0.81	0.79	0.47	0.55	.018**
Other Job?	0.86	0.41	0.88	0.62	0.92	0.71	0.77	0.32	0.93	0.8	0.9	0.58	0.76	0.27	0.66	.031**
College Degree?	0.75	0.15	0.76	0.32	0.49	<0.001***	0.73	0.24	1.12	0.72	0.68	.049**	0.69	0.14	0.74	0.16
Has Debt?	0.91	0.61	1.15	0.59	1.01	0.97	0.78	0.31	0.9	0.68	0.87	0.044	1.23	41	1.67	.011**
Owned < 3 Years?	0.61	.003***	0.7	0.17	0.66	.054*	0.54	.039**	0.6	.041**	0.7	.039**	0.91	0.68	0.79	0.21
Owned > 15 Years?	0.73	.058*	0.87	0.56	0.74	0.12	1.15	0.54	0.8	0.36	0.9	0.51	0.69	0.13	0.74	.093*
Out of State?	0.74	0.14	1.6	0.1	0.6	.045**	1.36	0.32	1.26	0.43	0.77	0.21	0.61	0.1	0.84	0.47
Live in Mpls?	0.84	0.21	1.2	0.36	0.61	.002***	1.45	.078*	1.26	0.26	0.85	0.25	0.57	.005***	1.12	0.45
Over 50% of Income From Rentals?	2.37	.001***	1.52	0.17	1.26	0.38	1.46	0.2	1.7	.092*	1.96	.003***	1.36	0.31	1.09	0.72
Income <50k?	1.07	0.72	1.39	0.25	1.22	0.36	0.98	0.95	0.59	0.12	1.07	0.74	1.48	0.13	1.44	.073*
Income > 125k?	1.03	0.82	1.5	.056*	0.94	0.72	1.71	.013**	1.42	.075*	1.27	.091*	1.32	0.32	0.73	.043**
Total Properties	1	0.85	1.06	<0.001***	1.09	<0.001***	1	0.99	1.02	.047**	1	0.96	1	0.79	1.01	0.64
Any Tier 2 or 3?	2.68	<0.001***	1.13	0.68	2.97	<0.001***	2.32	.001***	0.83	0.55	1.56	.039**	2.25	.002***	1.04	0.87
Total Cash Flow	1	.036**	1	0.12	1	0.2	1	0.11	1	0.2	1	0.25	1	0.7	1	.010***
Average Rent?	0.96	.022**	0.96	0.12	0.9	<0.001***	1	0.92	0.98	0.37	0.96	.030**	0.96	.068*	0.97	.061*
Observations	1,193		1,175		1,186		1,176		1,159		1,188		1,152		1,159	

*Notes: OR [1] = Odds Ratio, p-value [2] = *p<0.1 ; **p<0.05; ***p<0.01*

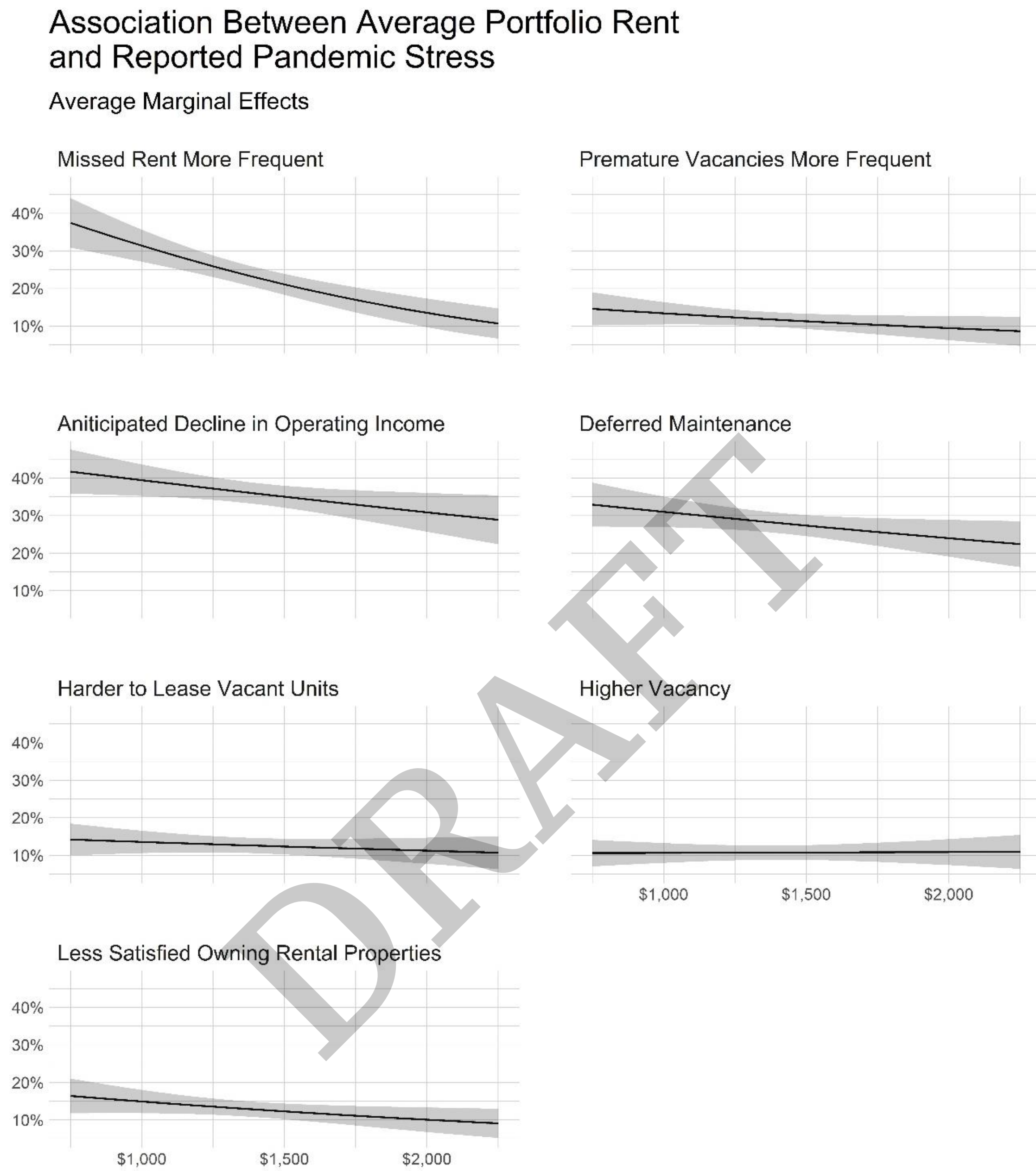
Discussion

As during past economic shocks and natural disasters, the Covid-19 pandemic has amplified preexisting housing insecurity (Comerio, 2014; Dickerson, 2017). Unlike in previous disasters, however, housing stress during the pandemic has been difficult to observe externally. During the early stages of the pandemic, a combination of local, state, and federal policies halted evictions but failed to forgive missed payments or provided little relief to either tenants or property owners. In this paper, we examine how the pandemic and subsequent policy responses affected the businesses of rental property owners in Minneapolis, Minnesota. Our novel and timely survey allowed us to examine correlates of stress, which will help inform policymakers as they develop responses to help affected rental housing providers.

We find that, broadly, pandemic-related business and operational stress was associated with four sets property owner characteristics. The first is portfolio size—owning more properties increases the likelihood an owner reported a negative pandemic impact. Partly, we suspect that this is because owning more properties exposes owners to more risk, but this association may also reflect differences in how large- and small-holders manage their properties. Owners of smaller portfolios may dedicate more time to tenant screening and remain in better contact with their tenants. This more personal management style may allow smaller holders to anticipate tenant hardship better and preemptively respond to avoid some of the negative outcomes we measure in our survey. This is consistent with Ellen et al.'s (2013) findings that owners who live in their buildings interact with tenants differently than those who live elsewhere. A more direct and personal connection with tenants may engender sympathy for tenant hardships or provide property owners with more information to manage their properties.

This association between portfolio size and stress can also help policymakers respond to the pandemic. In response to fears that the eviction moratoria would eventually lead to widespread tenant default and evictions, the federal government allocated nearly $47 billion to emergency rental assistance. Although there is some variation in the program's administration from state to state, it requires that tenants apply for assistance covering back rent and utility payments in most places. Because the onus is on the tenant to apply, advertising the program is important. Our results suggest that program administrators should communicate the program's availability with high-risk tenants and owners with large rental portfolios. The positive association between portfolio size and pandemic stress, particularly more frequent rent delinquencies, suggests that these owners may be an effective conduit to connect struggling tenants with assistance.

Figure 2: Average Marginal Effect of Rent on Stress



Second, we find a strong negative association between the average rent of a property owner's portfolio and pandemic stresses. This should not be surprising since there is mounting evidence that the economic, health, and social harm produced by the pandemic did not fall evenly across society but were concentrated among lower-income households (Chetty et al., 2020; Jin Cho & Winters, n.d.; Manville et al., 2020). Our results suggest that this disproportionate impact on lower-income households caused downstream impacts affecting the owners supplying relatively low-rent housing. This is important, as in many cities, including Minneapolis, the supply of low-cost, privately-owned housing was shrinking before the pandemic. Owners of low-cost rentals feel pressure in markets where prices are rising to renovate or redevelop (or sell to an investor) their buildings to take advantage of higher market rents (Schuetz, 2020). If, during the pandemic, these owners experienced concentrated financial losses, this could accelerate the attrition-through-redevelopment of privately-owned, low-cost units. Whether and to what extent these pandemic-related impacts affect the supply of privately owned low-cost housing is a worthy topic for future researchers.

Third, we find that black property owners more consistently reported pandemic impacts than did non-black owners. Because our survey is focused on the landlord, we do not have information about their tenants and thus we are unable to directly examine why this link exists. It is possible that the business conditions for black rental property owners are different than their non-black counterparts. For example, black owners may face higher borrowing costs, or they could have different relatsionships with their lenders or with the city and professional associations that have been providing information about tenant assistance programs during the pandemic. It could also be possible that black owners are more likely to own properties in non-white majority neighborhoods. As with income, researchers have found the negative impacts of the pandemic have fallen disproportionally on people and communities of color (Kim & Bostwick, 2020). If the pandemic disproportionately affected non-white neighborhoods in Minneapolis and black property owners disproportionally operate rentals in these areas, our results could reflect the outsized hardship these communities faced during the pandemic.

Irrespective of the underlying cause, it is concerning that the pandemic has had an outsized impact on black property owners. Our survey responses suggest that black investors own only 1% of rental units in Minneapolis. But according to 2019 ACS estimates, black households comprise nearly 25% of all renters in the city. If the pandemic stress we document in our analysis causes some black owners to sell their properties, this unbalanced representation among rental property owners could worsen. Future research should document barriers to and impact of black rental ownership, particularly as we exit the pandemic.

Finally, owning distressed tier two or three properties is the strongest and most consistent correlates of pandemic-related stress. As with the association between stress and rents, this may reflect that owners of distressed properties tend to rent to tenants disproportionately affected by the pandemic. Whatever the underlying cause, however, policymakers should be aware of and concerned about the pandemic's impact on owners of distressed properties. Most directly, the fact that these owners were more likely to report pandemic-related impacts to their business may augur future deterioration in unit quality.

Surprisingly, however, we did not find an association between owning distressed properties and deferring maintenance during the pandemic. Perhaps these owners are more sensitive to concerns about their properties' quality and thus less likely to respond truthfully to these questions. Or, maybe these owners had planned little maintenance, to begin with, and thus had less potential maintenance to defer. More optimistically, this result could highlight the effectiveness of Minneapolis's rental ordinance, even when owners are faced with operational and financial stressors. Tier 2 and 3 properties are those the city has flagged for more frequent inspections and higher renewal fees. Despite owners of these properties reporting more pandemic stresses, they were not more likely to defer maintenance. Forgoing maintenance for these owners may simply not be an option if they know the city will catch any disinvestment in future inspections.

In this analysis, we have presented preliminary evidence of the pandemic's impact on owners of rental properties in Minneapolis. In addition to the questions we have highlighted in this section, there is still a lot we do not know about the long-term effects of the pandemic on rental properties. We administered our survey when the eviction moratoria were still in effect and before congress approved the emergency rental assistance (ERA) program. At the time of writing, much of the funding provided in the ERA has yet to be distributed. Understanding whether the stressors we identify in this relatively early phase of the pandemic have lasting impacts on the rental housing market and the effectiveness of the ERA and moratoria are important questions for future research.

Not only was the scope of this analysis constrained by the timing of our survey, but basing our analysis off a single wave of a survey itself limits the depth of our analysis. The findings we have presented here are descriptive. Though we identify several associations between pandemic stress and property owner characteristics, we can only speculate on why these associations exist. This study is part of a larger, mix-methods research project that will address some of these shortcomings. We followed up our survey with in-depth property owner interviews, asking more nuanced, causal questions we cannot examine with the standalone survey. In addition to a planned second wave of our survey, we anticipate that our qualitative analysis will add substantive texture to our understanding of the pandemic's impact on rental property owners.

Acknowledgements

We would like to acknowledge the contribution of the research assistants who worked on this project: Lin Quan, graduate research assistant in the Department of Statistics at Iowa State University (ISU), and Caroline Stewart, Jenna Gilliam, and Kyra Troendle, undergraduate research assistants from the Department of Community and Regional Planning at ISU. Funding for this work came from the National Science Foundation (NSF #2050624).

Works Cited:

Balzarini, J., & Boyd, M. L. (2020). Working With Them: Small-Scale Landlord Strategies for Avoiding Evictions. https://doi.org/10.1080/10511482.2020.1800779

Charles, S. L. (2020). The financialization of single-family rental housing: An examination of real estate investment trusts' ownership of single-family houses in the Atlanta metropolitan area. *Journal of Urban Affairs*, *42*(8), 1321–1341. https://doi.org/10.1080/07352166.2019.1662728

Chetty, R., Friedman, J., Hendren, N., Stepner, M., & Team, T. O. I. (2020). *The Economic Impacts of COVID-19: Evidence from a New Public Database Built Using Private Sector Data*. Cambridge, MA. https://doi.org/10.3386/w27431

Comerio, M. C. (2014). Disaster Recovery and Community Renewal: Housing Approaches. *Cityscape*, *16*(2), 51–68. https://doi.org/10.4324/9781315404264-14

Desmond, M. (2015). *Unaffordable America: Poverty, housingm, and evcition* (Fast Focus). Madison, WI. Retrieved from http://www.irp.wisc.edu/publications/fastfocus/pdfs/FF22-2015.pdf

Desmond, M., & Gershenson, C. (2016). Who gets evicted? Assessing individual, neighborhood, and network factors. https://doi.org/10.1016/j.ssresearch.2016.08.017

Desmond, M., & Wilmers, N. (2019). Do the Poor Pay More for Housing? Exploitation, Profit, and Risk in Rental Markets. *2American Journal of Sociology*, *123*(3).

Dickerson, A. M. (2017). Hurricane Harvey and the Houston Housing Market. *Texas Law Review*, *96*.

Ellen, I. G., Hayashi, A., & Gross, B. (2013). *Maintenance and Investment in Small Rental Properties Findings from New York City and Baltimore*.

Fisher, L. M., & Lambie-Hanson, L. (2012). Are Investors the Bad Guys? Tenure and Neighborhood Stability in Chelsea, Massachusetts. *Real Estate Economics*, *40*(2), 351–386. https://doi.org/10.1111/j.1540-6229.2011.00317.x

Gaynor, T. S., & Wilson, M. E. (2020). Social Vulnerability and Equity: The Disproportionate Impact of COVID-19. *Public Administration Review*, *80*(5), 832–838. https://doi.org/10.1111/puar.13264

Gemelas, J., Davison, J., Keltner, C., & Ing, S. (2021). Inequities in Employment by Race, Ethnicity, and Sector During COVID-19. *Journal of Racial and Ethnic Health Disparities*. https://doi.org/10.1007/s40615-021-00963-3

Gil, R. M., Marcelin, J. R., Zuniga-Blanco, B., Marquez, C., Mathew, T., & Piggott, D. A. (2020). COVID-19 pandemic: Disparate health impact on the hispanic/latinx population in the

United States. *Journal of Infectious Diseases*, *222*(10), 1592–1595. https://doi.org/10.1093/infdis/jiaa474

Golestaneh, L., Neugarten, J., Fisher, M., Billett, H. H., Gil, M. R., Johns, T., … Bellin, E. (2020). The association of race and COVID-19 mortality. *EClinicalMedicine*, *25*, 100455. https://doi.org/10.1016/j.eclinm.2020.100455

Greenberg, D., Gershenson, C., & Desmond, M. (2016). Discrimination in evictions: empirical evidence and legal challenges. *Harvard Civil Rights-Civil Liberties Law Review*, *51*(1), 115. article.

Immergluck, D. (2018). Renting the Dream: The Rise of Single-Family Rentership in the Sunbelt Metropolis. *Housing Policy Debate*, *28*(5), 1–16. https://doi.org/10.1080/10511482.2018.1460385

Immergluck, D., & Law, J. (2014). Investing in Crisis: The Methods, Strategies, and Expectations of Investors in Single-Family Foreclosed Homes in Distressed Neighborhoods. *Housing Policy Debate*. Taylor & Francis. https://doi.org/10.1080/10511482.2013.850733

Kawachi, I., Daniels, N., & Robinson, D. E. (2005, March 2). Health disparities by race and class: Why both matter. *Health Affairs*. Project HOPE - The People-to-People Health Foundation, Inc. . https://doi.org/10.1377/hlthaff.24.2.343

Kim, S. J., & Bostwick, W. (2020). Social Vulnerability and Racial Inequality in COVID-19 Deaths in Chicago. *Health Education and Behavior*, *47*(4), 509–513. https://doi.org/10.1177/1090198120929677

Mallach, A. (2007). *Landlords at the Margins: Exploring the Dynamics of the One To Four Unit Rental Housing Industry*.

Mayer, N. (1985). The impacts of lending, race, and ownership on rental housing rehabilitation. *Journal of Urban Economics*, *17*(3), 349–374. https://doi.org/10.1016/0094-1190(85)90056-7

Özogul, S., & Tasan-Kok, T. (2020). One and the Same? A Systematic Literature Review of Residential Property Investor Types. *Journal of Planning Literature*, *35*(4), 475–494. https://doi.org/10.1177/0885412220944919

Raymond, E., Miller, B., Lucas, M., & Pokharel, S. (2016). *Corporate Landlords, Institutional Investors, and Displacement: Eviction Rates in Single- Family Rentals Richard Duckworth Federal Reserve Bank of Atlanta Corporate Landlords, Institutional Investors, and Displacement: Eviction Rates in Single-Family Rent* (Community & Economic Development Discussion Paper). Atlanta. Retrieved from https://www.frbatlanta.org/-/media/documents/community-development/publications/discussion-papers/2016/04-

corporate-landlords-institutional-investors-and-displacement-2016-12-21.pdf

Schuetz, J. (2020). *To improve housing affordability, we need better alignment of zoning, taxes, and subsidies*. Retrieved from https://www.brookings.edu/policy2020/bigideas/to-improve-housing-affordability-we-need-better-alignment-of-zoning-taxes-and-subsidies/

Seay, M. C., Anderson, S. G., Carswell, A. T., & Nielsen, R. B. (2018). Characteristics of rental real estate investors during the 2000s. *Journal of Financial Counseling and Planning*, *29*(2), 369–382. https://doi.org/10.1891/1052-3073.29.2.369

Statistics, U. S. B. of L. (2021). Unemployment Rate in Minneapolis-St. Paul-Bloomington, MN-WI (MSA). Retrieved from https://fred.stlouisfed.org/series/MINN427URN

Travis, A. (2019). The Organization of Neglect: Limited Liability Companies and Housing Disinvestment. *American Sociological Review*, *84*(1), 142–170. https://doi.org/10.1177/0003122418821339