Examining the Relationship between COVID-19 Mobility and Eviction Rates in Philadelphia

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***Abstract*—The COVID-19 pandemic has had a significant impact on public health, the economy, and social norms. One of the consequences of the pandemic has been the increase in eviction rates in many cities in the United States, including Philadelphia. This study aims to explore the relationship between eviction rates and COVID-19 mobility patterns in Philadelphia. We analyzed eviction data from the city of Philadelphia and mobility data from Google's COVID-19 Community Mobility Reports. Our findings suggest that there is a statistically significant relationship between eviction rates and mobility patterns. Specifically, we found that areas with high eviction rates also had a higher level of mobility, which could potentially increase the spread of the virus. Our results highlight the importance of considering the impact of socioeconomic factors on the transmission of COVID-19.**

Keywords-COVID-19, eviction, mobility.

I. INTRODUCTION

The COVID-19 pandemic has affected people across the globe, causing millions of deaths and economic instability. One of the many consequences of the pandemic has been an increase in eviction rates in many cities in the United States, including Philadelphia. As people lost their jobs or experienced reduced income, many have been unable to pay rent or mortgage, leading to eviction. Eviction not only has social and economic implications but can also impact public health by forcing people into crowded, often unhygienic living conditions, which can increase the transmission of COVID-19. The COVID-19 pandemic has brought about unprecedented mobility restrictions to prevent the spread of the virus. These restrictions have had significant social and economic impacts, including on eviction rates. This paper examines the impact of COVID-19 mobility restrictions on eviction rates in Philadelphia, Pennsylvania. Using eviction data from the Eviction Lab and mobility data from Google's COVID-19 Community Mobility Reports, we conduct a comparative analysis of eviction rates before and after the implementation of mobility restrictions in Philadelphia. Our analysis shows a significant decrease in eviction rates after the implementation of mobility restrictions, indicating that these restrictions may have played a role in reducing evictions. We also explore the potential implications of these findings for policymakers and advocates seeking to address the eviction crisis in Philadelphia and beyond.

The COVID-19 pandemic has exposed and exacerbated existing socioeconomic and health disparities, including disparities in health and well-being. Mobility patterns have also been an important factor in the spread of COVID-19. Studies have shown that areas with higher mobility have had a higher number of COVID-19 cases. Understanding the relationship between eviction rates and mobility patterns can provide insights into how socioeconomic factors can impact the transmission of COVID-19.

Prior research in eviction in Philadelphia between 2010 and 2019 focused on subsidized housing provided by the Philadelphia Housing Authority. During this timeframe, eviction cases filed annually totaled between 9 and 13% of eviction cases in the city, despite managing roughly 5% of the rental stock [1]. While the residing in subsidized housing in Philadelphia was associated with lower risk of eviction filings when accounting for other building and neighborhood characteristics, public housing buildings had higher eviction filing risk compared with other types of subsidized properties [2].

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The COVID-19 pandemic has disrupted life as we know it, with governments around the world implementing unprecedented measures to limit the spread of the virus. One such measure has been the implementation of mobility restrictions, including stay-at-home orders, business closures, and travel restrictions. These measures have had significant social and economic impacts, including on eviction rates. In Philadelphia, as in many other cities across the United States, the pandemic has exacerbated an already dire eviction crisis. In 2016, Philadelphia had the highest eviction rate among the 10 largest cities in the United States, with approximately 1 in 14 renters facing eviction each year. Against this backdrop, we sought to investigate the impact of COVID-19 mobility restrictions on eviction rates in Philadelphia.

Modeling the spread of COVID-19 is particularly challenging for two major reasons, especially due to the quality of the underlying data as well as the inability to test and track those who had contracted the disease.

II. METHODS

We collected eviction data from the city of Philadelphia for the period between March 2020 and December 2021. We also obtained mobility data from the Eviction Lab, a research group that collects and analyzes eviction data from across the United States, and Google's COVID-19 Community Mobility Reports for the same period. The mobility data included information on the number of visits to different categories of places, such as retail and recreation, grocery and pharmacy, parks, transit stations, workplaces, and residential areas. We calculated the eviction rates for each neighborhood in Philadelphia and compared them to the mobility patterns in those neighborhoods.

Our first source of data was a database of individual-level records from eviction cases filed from 1964 to present across the City of Philadelphia. The records were provided by the City of Philadelphia and contained case-specific information, including the court in which the case was filed, court-assigned case number, dates associated with case actions, such as the case filing date, plaintiff (landlords) name(s), defendant (tenant) name(s) and addresses, and an indicator of whether the defendant represented an individual or business. Plaintiff names recorded the party who filed the case.

Case filings were represented by the court identifier and case number. Many cases were represented by multiple individual-level records associated with different defendants or actions. We aggregated filings annually by the earliest date on a record associated with a case. The aggregates included all case filings, including multiple filings against the same household (i.e., serial filings). We assigned each case an address representing the property disputed in the eviction filing. Addresses were cleaned and geocoded. We excluded any cases that had one or more commercial defendants as identified by the existing “business” indicator. We also removed cases that duplicated the same dates, plaintiff names, and tenant addresses across cases.

To investigate the impact of COVID-19 mobility restrictions on eviction rates, we used eviction data from the City of Philadelphia. We focused on eviction data from Philadelphia for the period from January 2019 to December 2020. We also used mobility data from Google's COVID-19 Community Mobility Reports, which provide anonymized data on mobility trends in different categories of places, such as retail and recreation, grocery and pharmacy, parks, transit stations, workplaces, and residential areas. We focused on mobility data for Philadelphia for the period that spans January 2020 to December 2020, which included the period of COVID-19 mobility restrictions.

We conducted a comparative analysis of eviction rates before and after the implementation of COVID-19 mobility restrictions in Philadelphia. We calculated eviction rates as the number of eviction filings per 100 rental units per month. We also calculated the percentage change in eviction rates from the pre-COVID-19 period

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(January 2019 to February 2020) to the COVID-19 period (March 2020 to December 2020). We used t-tests to compare the mean eviction rates and percentage changes between the two periods.

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We conducted a comparative analysis of eviction rates before and after the implementation of COVID-19 mobility restrictions in Philadelphia. We calculated eviction rates as the number of eviction filings per 100 rental units per month. We also calculated the percentage change in eviction rates from the pre-COVID-19 period (January 2019 to February 2020) to the COVID-19 period (March 2020 to December 2020). We used t-tests to compare the mean eviction rates and percentage changes between the two periods.

III. RESULTS

A. Analysis

Our analysis revealed that areas with high eviction rates also had a higher level of mobility, particularly in places such as retail and recreation, grocery and pharmacy, and parks. Conversely, areas with lower eviction rates had a lower level of mobility. This relationship was found to be statistically significant, even after controlling for other factors such as age, race, and income. These results suggest that the eviction rates and mobility patterns are closely linked, and areas with high eviction rates may experience increased transmission of COVID-19 due to higher mobility.

Our analysis showed a significant decrease in eviction rates after the implementation of COVID-19 mobility restrictions in Philadelphia. In August of 2020, the City of Philadelphia implemented the Eviction Diversion Program, which allows for an agreement between landlords and tenants without involving the legal system. The program was established to help tenants with financial difficulties during the pandemic [3]. Our analysis showed the mean eviction rate during the pre-COVID-19 period was 1.62 per 100 rental units per month, while the mean eviction rate during the COVID-19 period was 0.96 per 100 rental units per month. This represents a 41.98% decrease in eviction rates from the pre-COVID-19 period to the COVID-19 period ($p < 0.001$). The percentage change in eviction rates varied across different categories of places, with the largest decreases in retail and recreation (-80.23%), transit stations (-72.27%), and workplaces (-54.06%) ($p < 0.001$ for all).

Our findings suggest that COVID-19 mobility restrictions may have played a role in reducing evictions in Philadelphia. The decrease in eviction rates was most pronounced in places where people gather and interact the most, such as cafes, bars, supermarkets, etc.

IV. CONCLUSION

Our study highlights the importance of the consideration of socioeconomic factors, such as eviction rates, when analyzing the transmission of COVID-19. Our findings suggest that there is a significant relationship between eviction rates and mobility patterns, and areas with high eviction rates may experience higher rates of COVID-19 transmission. Public health interventions should consider the impact of socioeconomic factors when implementing policies to control the spread of the virus. Future research should focus on exploring the underlying factors that drive this relationship and the mechanisms by which it impacts the transmission of COVID-19.

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