THE RELATIONSHIP BETWEEN CRIME AND VACANT BUILDINGS IN
THE CITY OF CHICAGO

An Undergraduate Research Scholars Thesis

by

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ABSTRACT

The Relationship Between Crime and Vacant Buildings in the City of Chicago

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Literature Review

“Every day, in urban communities across the country, vacant buildings haunt neighborhoods, blighting the city landscape, lowering surrounding property values, increasing crime and the risk of fire, and posing hazards for children” (Kraut, 1999). A study at the University of Pennsylvania in 2013 showed that by greening and improving vacant lots and buildings led to a decrease in gun crimes and led to a higher perceived safety by residents (Garvin, Cannuscio, Branas, 2013). In 2012 the City of Chicago’s murder rate had spiked by over 38% midway through the year and has accounted for at least 59 organized gangs in the city (Time, 2012). This paper will show the communal impact vacant structures can have. The significant lack of study in this specific area provides immense opportunity for research but also does not provide many supporting sources.
**Thesis**

My hypothesis is that vacant buildings help facilitate and promote crime in Chicago. I also expect that certain crimes and demographics will be more prevalent near abandoned buildings.

**Theoretical Framework**

In 1982, James Q. Wilson and George Kelling proposed the broken windows theory. The theory states that disorder in areas or neighborhoods create fear in citizens and is a gateway for more serious crimes. The theory was most notably used as the groundwork in the 1990s for New York City Police Commissioner William Bratton. The commissioner believed that by focusing on minor crimes and dilapidated areas of the city it would decrease more serious crimes. When Bratton retired, felonies were down by forty percent and the murder rate was half the previous count.

**Project Description**

The City of Chicago is one of the most crime-ridden cities in the United States. It is also home to a wide range of social disparity and neighborhoods with an abundance of abandoned or dilapidated structures. My hypothesis is that the abandoned or dilapidated structures have a correlation to the crime type and rate in their vicinity. My research will prove that abandoned structures require attention and the importance that should be placed on the rehabilitation and retrofitting of these structures. To effectively research this project, I will be mapping vacancies and crimes in Chicago. I also plan to conduct further research into the demographic and
economic condition of certain areas of Chicago. This further research will enable me to fully assess the city and the relationship between crime and vacant buildings.

ArcMap will be utilized for mapping which allows me to buffer around abandoned buildings and compare data effectively. Books, research papers, newspaper articles and computer programs, such as ArcMap and ESRI Business Analyst, will enable me to complete my research. The open databases I plan to use are The University of Chicago, the Urban Institute, Chicago’s GIS Open Data website and American Fact Finder. I will also be utilizing the expertise of my faculty advisor - Dr. Cecilia Giusti.

The results concluded that during our time frame the top five crimes in the City of Chicago were assault, battery, criminal damages, theft and narcotics. These crimes occurred 9,572 times. However 4,374 of those crimes happened within our 250 yard buffer. Therefore, 45.7% of the top five crimes in Chicago occur within 250 yards of an abandoned structure.
ACKNOWLEDGEMENTS

I would like to thank my faculty advisor, Dr. Giusti, and the staff at the Undergraduate Research Scholars program for their guidance and support throughout the course of this research.

Thanks also go to my classmates and the department faculty and staff for making my time at Texas A&M University a great experience. Thanks especially go to my classmate, Rene Schulze, who first started to look at this research topic with me as a class project.

Finally, thank you to my family and friends for their constant encouragement and support in everything that I do.
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<td>GIS</td>
<td>Geographic Information Systems</td>
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CHAPTER I
INTRODUCTION

Cities all across the United States and the world are littered with abandoned buildings and structures. They have the potential to be abhorrent eyesores that decline not only surrounding property values but can also promote an increase in crime in the area. While some abandoned structures are not dilapidated or a hazard they still do not contribute to neighborhoods vibrancy or sense of place. Some people argue that the presence of an abandoned building does not promote crime but simply leads to a decreased sense of security for residents. “Every day, in urban communities across the country, vacant buildings haunt neighborhoods, blighting the city landscape, lowering surrounding property values, increasing crime and the risk of fire, and posing hazards for children” (Kraut, 1999). A study at Temple University in 2001 showed that properties experienced a new loss of value of $7,627 when they were within one-hundred and fifty feet of an abandoned building in the city of Philadelphia. Also according to Munich RE over 12,000 fires break out in abandoned structures each year causing over seventy-three million dollars in damages annually while a study at the University of Pennsylvania in 2013 showed that greening and improving vacant lots and buildings led to a decrease in gun crimes and led to a higher perceived safety by residents (Garvin, Cannuscio, Branas, 2013).

There has been very little research in this specific area. However, in 1982 James Q. Wilson and George Kelling proposed the broken windows theory. The theory states that disorder in areas or neighborhoods creates fear in citizens and is a gateway for more serious crimes. The theory was most notably used as the groundwork for New York City Police Commissioner,
William Bratton, in the 1990s. The commissioner believed that by focusing on reducing minor crimes and enhancing dilapidated areas of the city it would decrease more serious crimes. When Bratton retired felonies were down by forty percent and the murder rate was half of the previous count. It is widely known and believed that abandoned structures promote crime but there is very little factual proof or studies to back up that claim.

The purpose of my research is to show the relationship between abandoned buildings and the crime in an area. My hypothesis is that the abandoned or dilapidated structures have a correlation to not only the crime rate but also the types of crimes that occur in their vicinity.

I chose Chicago, Illinois because it is one of the most crime ridden cities in the United States. Chicago sits on Lake Michigan and is known for its bold architecture and art. It is the third largest U.S. city with a 2014 population of 2,722,380 people while the metro area was home to nearly ten million people. Chicago is two-hundred and thirty-seven square miles and is an international hub for finance, commerce, industry, technology, telecommunications, and transportation.

**Chicago Neighborhoods**

Chicago is divided into seventy seven distinct neighborhoods, shown in the map below. There are over fifty communities within these neighborhoods with each neighborhood being distinct, vibrant and proud. The Central Business District, or heart of Chicago business, is shown in red on Figure 1. On a much larger scale Chicago is broken down into four districts: North, South, West and Downtown, as shown in Figure 2.
Figure 1. The City of Chicago

Figure 2. The Neighborhoods of Chicago
Chicago Neighborhoods:

- Albany Park
- Andersonville
- Avondale
- Belmont Cragin
- Boystown
- Dunning
- Edgewater
- Galewood
- Goose Island
- Hermosa
- Irving Park
- Jefferson Park
- Lakeview
- Lincoln Park
- Lincoln Square
- Logan Square
- Montclare
- North Center
- North Park
- Norwood Park
- Old Town
- O’Hare
• Portage Park
• Rogers Park
• Roscoe Village
• Uptown
• West Ridge
• Wicker
• Park/Bucktown
• Wrigleyville

West Chicago Neighborhoods:
• Austin
• Garfield Park
• Humboldt Park
• Little Italy/University Village
• Little Village
• North Lawndale
• Pilsen
• United Center
• West Loop
• West Town

Downtown or Central Neighborhoods:
• Chinatown
- Gold Coast
- Loop
- Magnificent Mile
- South Loop
- Streeterville

People identify with these neighborhoods. While one person can be from Uptown another can be from Lincoln Park and while they both reside in the City of Chicago their daily life and view of the city can be very different. The Boystown neighborhood is home to one of the largest gay, transgender and bisexual communities in the United States while Chicago’s Humbolt Park neighborhood is home to a large Latino community. The neighborhood of Chinatown is home to over sixty-thousand Chinese residents and the neighborhood of Bridgeport is a community of largely working class people. The neighborhoods of Chicago are the communities that people live in, identify with and call home.

*Hardship Index*

The Hardship Index takes into account six socioeconomic indicators of public health (Moser, 2012):

- Crowded Housing (%) - More than one person per room
- Households Below Federal Poverty Level (%)
- Unemployed Age 16+ (%)
- Age 25+ Without High School Diploma (%)
- Population Under 18 and Above 64 (%)
The Chicago neighborhoods with the highest hardship index percentages are:

- Englewood
- New City
- Washington Park
- Fuller Park
- Gage Park
- Brighton Park
- Riverdale
- Armour Square
This demonstrates that the south and west sides of Chicago have the higher concentration of poverty.

*Poverty and Unemployment*

The map below, Figure 4, is representative of the percent of the population that is sixteen years old or above that is unemployed per neighborhood. This is a factor that contributes to the hardship index.

Figure 4. Chicago Poverty and Unemployment
The Chicago neighborhoods with the highest poverty and unemployment percentages are:

- Englewood
- Auburn Gresham
- Riverdale
- Washington Park
- Fuller Park

**Chicago’s Top Five Crimes**

Many crimes plague the City of Chicago. During the time span of this study there were over 240,469 crimes reported. The top five crimes in the City of Chicago for this studies time span were:

- Theft: 33.6%
- Battery: 25.8%
- Criminal Damage: 16.2%
- Narcotics: 16%
- Assault: 8.4%

The Chicago Tribune broke down the neighborhoods with the highest violent crimes, property crimes and quality of life crime rates.

**Violent Crime Rates**

1. Fuller Park
2. West Garfield Park
3. North Lawndale
4. Greater Grand Crossing
5. East Garfield Park

Property Crime Rates
1. Loop
2. Fuller Park
3. Near North Side
4. Near West Side
5. Washington Park

Quality-of-Life Crime Rates
1. West Garfield Park
2. Fuller Park
3. East Garfield Park
4. North Lawndale
5. Austin

The City of Chicago is a diverse, multicultural city. This research will holistically look at Chicago, its crime and the contribution vacant and abandoned structures make to the quality and lifestyle of a community.
CHAPTER II

METHODS

The City of Chicago has a very in-depth online database of city data which can be downloaded and used at your own discretion. I started by pulling all crime data within a calendar year, November 2014 to November 2015. Then I pulled all reports of abandoned or dilapidated structures.

I then mapped all crimes in Chicago within a calendar year, see Figure 5, followed by mapping all abandoned structures, see Figure 6, reported in that same time frame.
Figure 5. Chicago Crimes from November 2014-2015
Figure 6. Chicago Vacant Buildings from November 2014-2015

After that I mapped crimes that had taken place in an abandoned structure from November 2014 to November 2015, see Figure 7. Next I overlaid the map of the crimes that occurred in abandoned structures over the map displaying all Chicago crimes and vacant buildings in my time frame, see Figure 8, to see if a pattern emerged.
Figure 7. Crimes that Occurred in Vacant Buildings in Chicago from November 2014-2015
During our study there were 240,469 crimes reported with 491, or 0.21%, of those crimes occurring in abandoned buildings. I used those 491 locations as my study areas. The top five crimes that occurred inside vacant buildings during this time frame were:

- Narcotics
- Theft
- Burglary
- Criminal Trespass
• Criminal Damage

Next I mapped the top 5 crimes in Chicago, see Figure 9, for my time span:

• Theft: 33.6%

• Battery: 25.8%

• Criminal Damage: 16.2%

• Narcotics: 16%

• Assault: 8.4%

Figure 9. Chicago Top 5 Crimes from November 2014-2015
Following that I mapped the top 5 crimes in Chicago and the crimes that occurred in abandoned buildings together to see if there was any correlation, see Figure 10.

Figure 10. Chicago Top 5 Crimes and the Crimes that Occurred in Vacant Buildings from November 2014-2015

Then I placed a two hundred and fifty yard buffer around each abandoned structure that was associated with a crime and mapped all of the crimes that fell within that boundary, see Figure 11.
Following the mapping, I did statistical analysis on the frequencies and types of crimes not only in all of Chicago but also within the two hundred and fifty yard buffer that was created around the abandoned structures. In the two hundred and fifty yard buffer the top five crimes were:

- Assault: 8.2%
- Battery: 23.4%
- Criminal Damage: 12.2%
• Narcotics: 40.3%
• Theft: 15.9%

I then took closer images of the mapping pertaining to the buffer, see Figure 12 and Figure 13. The Business District is still shown in red for reference.

Figure 12. The West Side of Chicago Buffer Map
The West side of Chicago is shown in Figure 14 and displays the neighborhoods of Austin, North Lawndale, and Garfield Park. In these neighborhoods over three-hundred violent crimes and five-hundred property crimes are reported monthly. The neighborhood of Austin is known as one of the deadliest in the city. The Southwest side of Chicago, see Figure 15, shows the neighborhood of Englewood. This neighborhood is ninety-seven percent African American and considered one of the poorest neighborhoods in Chicago with an average household income falling below twelve thousand dollars annually.
Figure 14. Close-up of the West Side of Chicago Buffer Map

Figure 15. Close-up of the Southwest Side of Chicago Buffer Map
CHAPTER III

RESULTS

The city of Chicago is one of the most crime ridden cities in America. In the calendar year I am studying, November 2014 to November 2015, there were nearly a quarter of a million crimes committed in the city. Nearly five hundred of those crimes took place in an abandoned structure. The top five overall crimes in the city of Chicago are:

- Assault: 8.4%
- Battery: 25.8%
- Criminal Damage: 16.2%
- Narcotics: 16%
- Theft: 33.6%

The top five crimes in Chicago occurred 9,572 times in the calendar year of this study. The top overall crime committed in Chicago is theft. While the top five crimes Chicago that occurred in or within two-hundred and fifty yards of an abandoned building where a crime had already occurred are:

- Assault: 8.2%
- Battery: 23.4%
- Criminal Damage: 12.2%
- Narcotics: 40.3%
- Theft: 15.9%
The top five crimes occurred in the buffer 4,374 times that year. The top crime committed near or in an abandoned building is narcotics. The comparison of the top five crimes in Chicago and the top five crimes in or near an abandoned building, Figure 16, is shown below.

![Bar chart comparing top 5 crimes in Chicago versus top 5 crimes in the buffer](chart.png)

Figure 16. Top 5 Crimes in Chicago versus Top 5 Crimes within the 250 yard Buffer

The rate of occurrence for crimes such as assault, battery and criminal damage were hardly impacted by their proximity to an abandoned building. However the rate of theft and narcotics were greatly impacted by proximity to abandoned buildings where a crime had already occurred. The theft rate was cut in half from thirty-four percent to sixteen percent. A possible explanation for this decrease of theft within the buffer is that there may be little of value to take
near or in an abandoned structure and if something was taken from an abandoned structure it is highly likely it would go unreported.

However within the two-hundred and fifty yard buffer narcotics rose to forty percent of the crimes while it was only sixteen percent of the top five crimes citywide. This sharp rise in the use of narcotics within two-hundred and fifty hards of an abandoned structure where a crime had already occurred is notable and shows a casual relationship between the two. The maps also displayed very distinct trends of the location of where most crimes occurred in relation to areas of the city that had the highest hardship index scores. This was to be expected and follows historic trends of crimes occurring in impoverished areas.

During the time frame, the top five crimes in the City of Chicago occurred 9,572 times. However, 4,374 of those crimes took place within the 250 yard buffer. Therefore 45.7% of the top five crimes in Chicago occur within 250 yards of an abandoned structure.
CHAPTER IV

CONCLUSION

The assumption that vacant properties have had a crime occur in them which then creates environments for further crime to occur in the area was evident, especially pertaining to narcotics. The maps show that the majority of narcotics crimes occur near an abandoned building that a crime occurred in. When plotting crimes, vacancies, and the hardship index, there is a direct correlation between these areas.

Policy Implications

Abandoned buildings are not only an issue for the City of Chicago but rather every city in the United States. Cities can address these buildings by providing incentives for developers to renovate the property, sell city-owned property at a largely reduced cost, create land banks, establish demolition funds for high risk properties, and, for qualifying projects, consider historic preservation and historic tax credits.

Another solution would be for municipalities to create a department or administration which would oversee all abandoned properties. A successful example of this is the City of Louisville, Kentucky. Louisville has a city department specifically designated for abandoned property management and rehabilitation that has greatly impacted not only the city landscape but the sense of place.
Limitations

There are limitations to this study. All of the mapping was done using ESRI ArcMap. There is the possibility that with such large data sets, some points were mapped incorrectly or not displayed. Also, not all points on the map accurately depict crime rates since in some instances multiple crimes occurred at a single location, even at the same time. Therefore, when multiple crimes occurred in one instance the most offensive crimes were mapped.

Another limitation to this study is that it only focused on vacant properties that had a crime occur in them within the calendar year of observation. The study did not look at other properties in the city.

This was only exploratory research to identify the correlation. Therefore more in-depth analysis would need to be done in order to clarify and solidify the results.

Future Studies

Future studies might research certain neighborhoods more specifically, neighborhoods with a history of crime, vacant buildings, and a high hardship index score. Those studies should inquire why the relationship exists. Future studies could also compare the crime - vacancy correlation of the areas in and around the Central Business District.

All future studies should include a comparison of social demographics and implications on the neighborhoods.
REFERENCES


