

The Relationship Between Current Crime Rates and Perceived Neighborhood Safety

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Introduction

A high crime rate is often hypothesized as a key contributor to decreased feelings of neighborhood safety (Putrick et al. 2019). Decreased feelings of neighborhood safety have been found to lead to increased health risks and depression (Putrick et al. 2019). Both findings lead to the question of the current study: what is the relationship between current crime rates and perceptions of safety? Previous studies have defined a positive perception of neighborhood safety as a lack of fear, a belief in police performance, and a belief in police legitimacy (Carter et al. 2021). To further clarify this definition for the purpose of this paper, fear is defined as a psychological emotion invoked by environmental factors and the belief that the likelihood of being a victim of crime is high (Zhang et al. 2021). Police performance and legitimacy is defined as trust and reliability in police work. The other variable that is analyzed within this study is current crime rates. Based on previous studies, crime rates were found through local police reports, the Uniform Crime Report (UCR) from the FBI, and the National Incident-Based Reporting System (NIBRS) (FBI 2021; Zhang et al. 2021). Using these variables, this research project aims to understand the impact current crime rates have on the perception of neighborhood safety.

The main social theory that is used to understand the results of this study is symbolic interaction theory. Symbolic interaction theory was founded by George Herbert Mead and Max Weber (Nickerson, 2023). This theory focuses on the process of interpreting the actions of others as symbols and cues (Aksan et al. 2009). This social theory helps to explain the impact of crime rates and perceived safety. The acknowledgment of high crime, and actions within the neighborhood, show cues and symbols of low safety thus decreasing individuals' perceived

safety of the neighborhood. Symbolic interaction theory helps explain individuals' perceptions of neighborhood safety by recognizing environmental factors, such as crime, run-down buildings, etc, as cues to feel unsafe (Aksan et al. 2009; Carter et al, 2021; Kuen et al. 2022; Zhang et al. 2021).

To answer the current research question, comments from the Nextdoor app (Tolia et al. 2023) were collected from different neighborhoods with varying levels of crime. Comments were then categorized with numerical values. Next, crime statistics were gathered from the local police department on the selected neighborhoods being analyzed using the Record Management System (RMS). Then the current crime rates of each neighborhood were compared to neighborhood comment scores to see how crime rates correlate with individuals' perception of neighborhood safety. Based on previous studies, it is hypothesized that individuals who live in low-crime-rate neighborhoods will have higher perceptions of safety, while individuals who live in high-crime-rate neighborhoods will have lower perceptions of safety (Kuen et al. 2022; Zhang et al. 2021). Understanding the correlation between these two variables are important as it will be able to tell us how society is interpreting crime rates within their neighborhood, if other factors are involved, and how we can make individuals feel more safe within their neighborhoods.

Literature Review

Previous research on this topic has produced mixed results, creating a need for more research to be conducted in order to understand further the relationship between crime and perceptions of neighborhood safety. Methods used to study this topic have also varied in the forms of surveys (Putrick et al. 2019; Carter & Wolfe 2021), observational research (Carter & Wolfe 2021; Kuen et al. 2022), use of crime statistics (Putrick et al. 2019), use of google map

images (Zhang et al. 2021), and more. The previous research on this topic provides valuable information that has helped to inform the current study.

Zhang et al (2021) used Google Maps images to estimate the perception of neighborhood safety by the look of the environment, such as the cleanliness of the neighborhood, the number of rundown buildings, the up keep of sidewalks and lawns, etc. This study then used the Houston Police Department (HPD) registry and the National Incident-Based Report System (NIBRS) to collect statistics on crime rates in each neighborhood they were analyzing (Zhang et al. 2021). This study found a significant correlation between perceived neighborhood safety and crime rates (Zhang et al. 2021).

Putrick et al (2019) found evidence that criminality is a key component in feelings of neighborhood safety. This study used surveys to measure the perception of neighborhood safety and police registries to collect data on crime rates within those neighborhoods (Putrick et al. 2019). This study found that the strongest correlation between crime rates and perceptions of safety is with violent crimes (Putrick et al. 2019) This study also found that one-third of the entire sample felt unsafe during the day, while two-thirds felt unsafe at night in their neighborhood (Putrick et al. 2019).

Additionally, another study used mail surveys to analyze individuals' perceptions of neighborhood safety. Carter and Wolfe (2021) found that disorder, such as rundown buildings, inadequate lighting, and unmaintained sidewalks, within a neighborhood is associated with perceived levels of safety. They also found that disorder was not only directly related to perceived safety but also indirectly. This study found that disorder was indirectly related to individuals' perceived safety by affecting their impressions of police performance and legitimacy (Carter & Wolfe 2021).

Kuen et al (2022) found similar findings that disorder had an impact on individuals' feelings of safety within their neighborhood. This study used surveys, environmental observations, and official crime statistics to collect their data (Kuen et al. 2022). They also found that both social disorders, such as loitering, and physical disorders, such as rundown buildings, had an impact on the perception of neighborhood safety (Kuen et al. 2022). Something else they found was that social disorder within a neighborhood had a larger impact on feelings of neighborhood safety (Kuen et al. 2022).

Much of the information gained from these two studies helped inform and guide the current study. Some of the limitations and factors from these studies include characteristics of individuals such as gender or race, which type of crimes the study looks at, the difference between feelings of safety during the day and at night, and neighborhood disorder. These previous studies allow further research to adjust for some of the limitations they experienced within their research. Previous studies also allow future researchers to explore some of the other possible factors that may have contributed to the previous research's results.

Social Theory

The sociological theory that was used to guide the current study is symbolic interaction theory (Aksan et al. 2009). This theory focuses on the process used to interpret meanings of actions and symbols within society (Aksan et al. 2009). Symbolic interaction theory was used within this study to better understand individuals' feelings of safety. This theory was also used to understand individuals' perception of social disorder, physical disorder, level of crime rates, and feelings of safety depending on day or night. Both social and physical disorders are analyzed by individuals and interpreted to some extent to determine the safety of their neighborhood. Crime rates are often seen as a symbolic of an area's level of safety as well (Putrick et al, 2019). The

time of day is also seen as a symbol used to interpret levels of safety as more individuals feel an increased sense of safety during the daytime than at night within their neighborhoods. By using symbolic interaction theory to interpret all of these factors and symbols, perceptions of neighborhood safety in association with current crime rates became easier to understand.

Methodology

The current study was quantitative research. A quantitative study was the best method to answer this research question as it provided results that can be generalized to a larger population. The quantitative data that was collected in this study was done so through collecting and coding comments from the app Nextdoor and current crime statistic records from local police registries. The app Nextdoor is an app used by individuals all over the world to share information about their neighborhoods. Historical data was not used within this study because the focus of the study is on current crime rates and feelings of perceived safety. The current study used public information both from the app Nextdoor and the local police department.

The data for the study was collected through two different methods. The first was by choosing different neighborhoods and towns based on their crime rates. The crime rate data collected from local police registries was from the past four years. The second source of data for this study was collected from the app Nextdoor. Comments made on the Nextdoor app were analyzed and categorized based on relevance to crime and safety in their neighborhood. The categories these comments were organized into included the following: date, neighborhood, type of crime, warning terms, concerns for safety, disregard to concerns, safety tips, and post or reply to post. These categories were coded by numbers in order to turn them into statistical information that could be used to analyze and compare to the current crime rate statistics that were collected from the police registries. Both current crime rates and the Nextdoor comment statistics were

compared to see if there was a correlation or statistically significant relationship between the current crime rates and the perception of safety within corresponding neighborhoods.

There are some concerns with the accuracy of the data gathered, such as the Nextdoor app (Tolia et al, 2023) doesn't filter specifically for crime and safety comments or topics, so data could be missed. Another limitation may be that not all individuals within a specific neighborhood use the Nextdoor app, so there is a limited perspective of safety and crime being shown to represent that neighborhood. One more limitation would be that the police registries are only based on reported crime, so they do not reflect the overall crime rate within each neighborhood.

Previous studies have conducted research on similar variables using a variety of methods (Zhang et al. 2021; Putrick et al. 2022; Kuen et al. 2021, & Carter & Wolfe 2021). Much of the research on this topic used surveys to measure the perception of neighborhood safety and police registries for crime rates (Putrick et al. 2022; Carter & Wolfe 2021). Based on the results of these other studies, the current study used similar methods. Instead of surveys, the current study collected comments from an app that contains posts about individuals' feelings and concerns about crime and safety in their neighborhood. The comments were scored based on categories mentioned above, giving a score of 1 (yes) or 0 (no), with one exception, the category of warning terms was coded based on the word used. For example, 1 (emergency), 2 (important), 3 (serious), and 4 (suspect). Then the average survey score for each neighborhood was compared to the neighborhood's crime rate.

Crime rates were collected from the Helena Police Department. These statistics were collected through the use of multiple programs and websites. Through the collaboration of

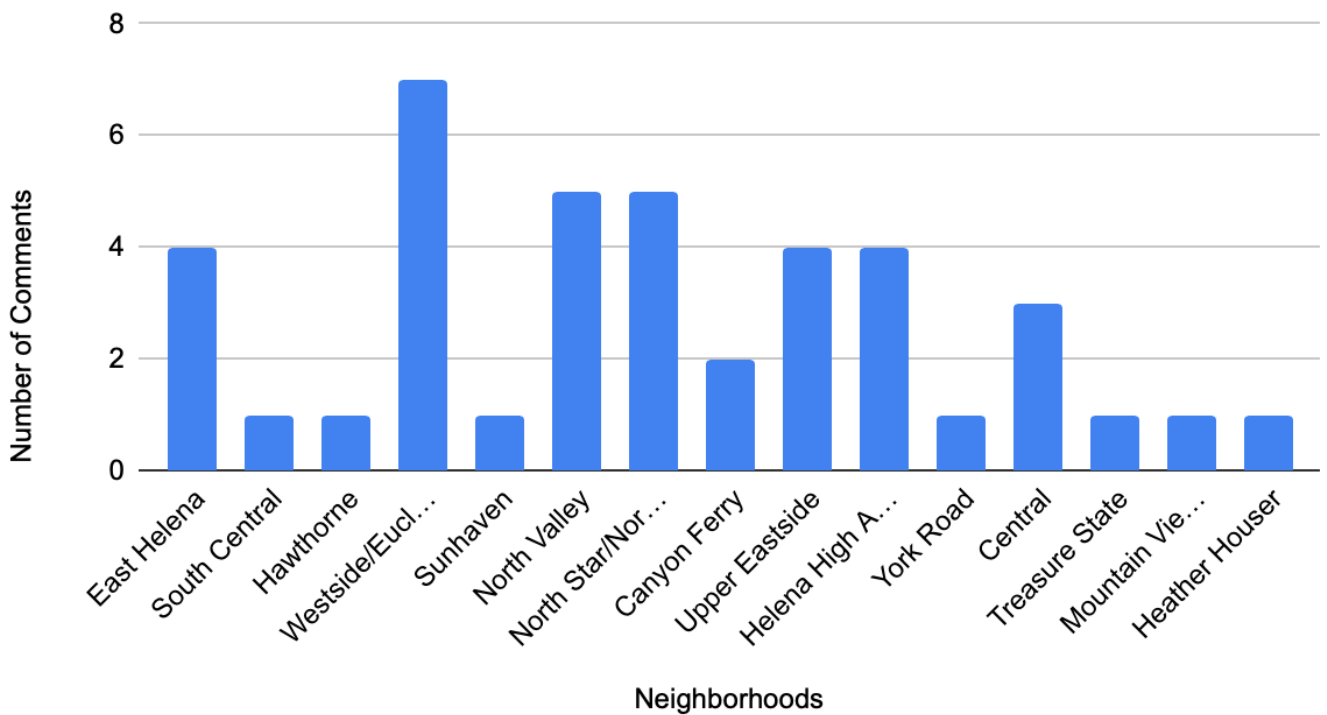
Volunteer Coordinator, we were able to get detailed crime statistics for every neighborhood looked at within this study. First, through the use of the map in the Nextdoor app (Tolia et al. 2023), we were able to identify the area of each neighborhood used in the app that correlated with the comments collected. Then, using Google Maps (Google), we were able to find a physical address at the center point of the designated area for each neighborhood. Next, using Google Earth (Google), we measured the diameter of the designated area of each neighborhood by marking the distance from the center point address to each edge of the outlined neighborhood parameters in each direction. After that, we used the Record Management System, to search for the number of reports in each of the following categories; theft, stolen vehicle, robbery, property crime, fraud, drugs, domestic violence, general crime, burglary, and assault, which were recorded in each neighborhood within the determined parameters of the neighborhood between the years of 2019 through 2022. These values were then plotted on a bar graph to see the correlation between the two variables. These values were analyzed statistically through the use of cross tabulation, Pearson's R, and descriptive statistics.

Results

These values were analyzed statistically through the use of cross tabulation and Pearson's R tests. This study looked at multiple cross tabulations and Pearson R to test the association between different categories of crime (i.e. total amount of crime, property crime, robbery, theft, stolen vehicle, fraud, drugs, domestic violence, general crime, burglary, and assault) and categories of comments (i.e. total number of comments, property crime, concerns of crime, safety tips, hateful acts, warning terms, violent crime, guns, disregards of concerns, mention to be safe, and replies to comments). This study found that there was no significant association between the crime rate levels and comments and concerns for neighborhood safety.

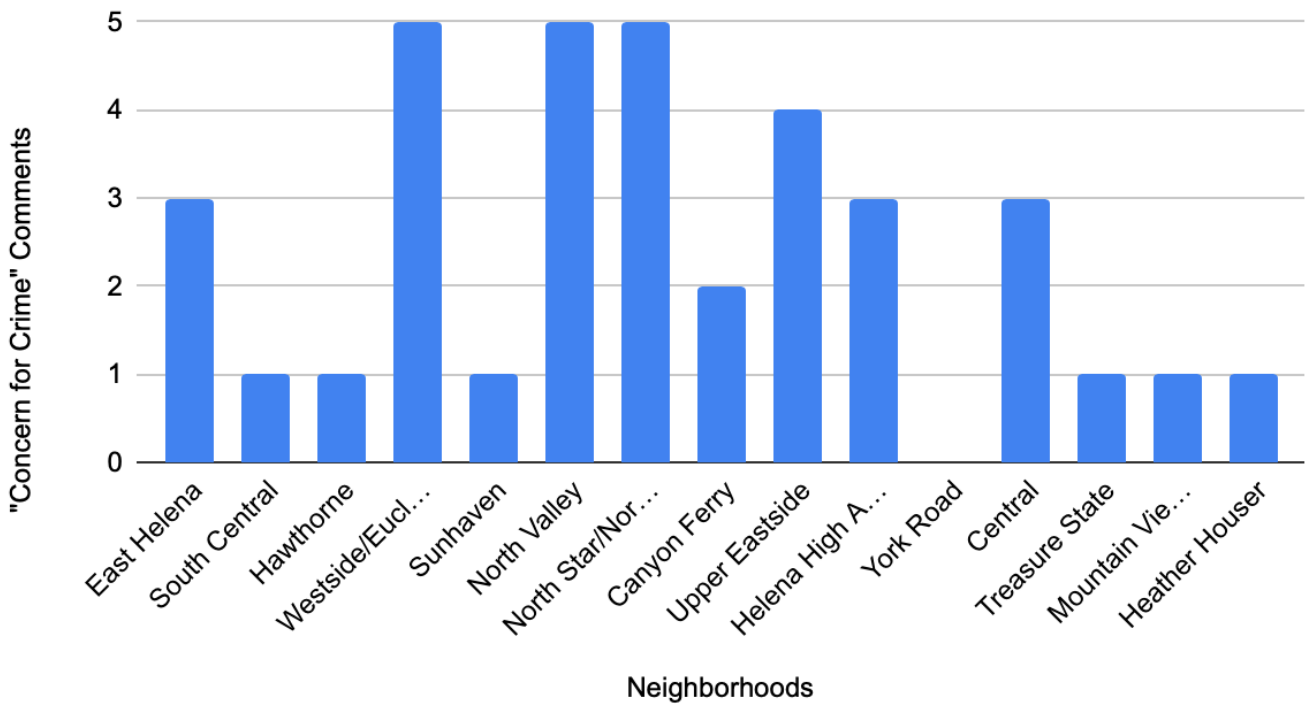
There were 15 neighborhoods analyzed within this study. The neighborhoods were as follows; Westside/Euclid Ave, North Valley, Northstar/North Helena, East Helena, Upper Eastside, Helena High Area, Central, Canyon Ferry, South Central, Hawthorne, Sunhaven, York Road, Treasure State, Mountain View Meadows, and Heather Houser. The number of comments per neighborhood ranged from one to seven. Westside/Euclid Ave had the highest number of comments resulting in seven. North Vally and Northstar/North Helena each had a total of five comments. East Helena, Upper Eastside, and Helena High Area had the third highest amount, each having a total of four comments. Followed by Canyon Ferry with two comments. South Central, Hawthorne, Sunhaven, York, Road, Treasure State, Mountain View Meadows, and Heather Houser rounding it out with one comment each per neighborhood.

Neighborhoods & Comments



The number of “concern for crime” comments for the above neighborhoods ranged from zero to five. Westside/Euclid Ave, North Valley, and Northstar/North Helena showing the greatest concern with a total of five comments each per neighborhood. Followed by Upper Eastside with four comments. Then Helena High Area, East Helena, and Central with three comments per neighborhood. Followed by Canyon Ferry with two comments. Then South Central, Hawthorne, Sunhaven, Treasure State, Mountain View Meadows, and Heather Houser with one comment per neighborhood. Ending with York Road with zero comments made about concerns of crime.

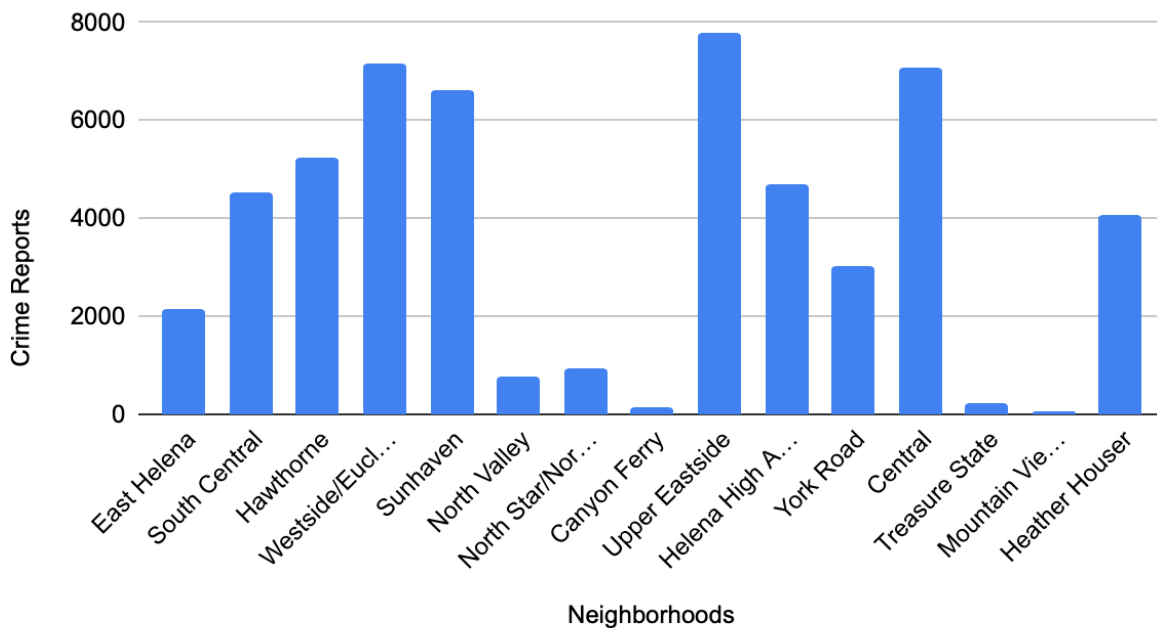
Neighborhoods & Concern For Crime



The total number of crime intake reports for each neighborhood ranged from 7,768 to 54 with the Upper Eastside having the highest number of crime intake reports with a total of 7,768. This was followed by Westside/Euclid Ave with a total of 7,158. Then Central (7,097), Sunhaven

(6,604), Hawthorne (5,234), Helena High Area (4,703), South Central (4,515), Heather Houser (4,082), York Road (3,016), East Helena (2,159), NorthStar/North Helena (932), North Valley (792), Treasure State (216), Canyon Ferry (159), and Mountain View Meadows (54) with the lowest number of crime intake reports.

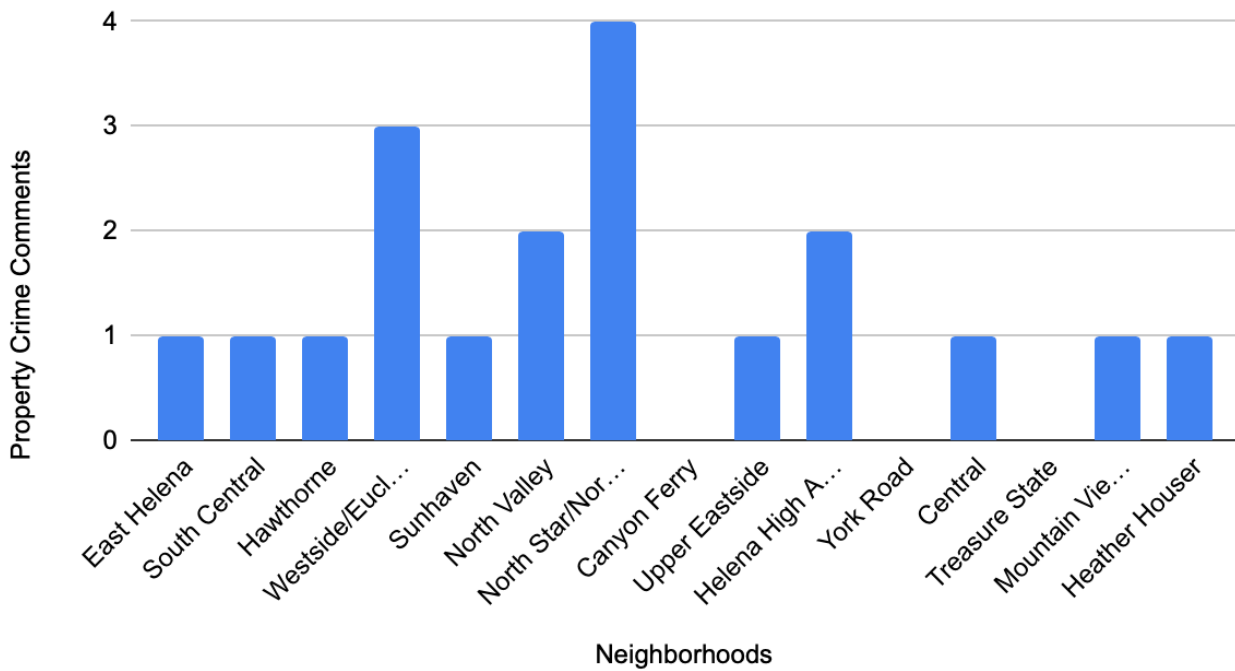
Neighborhoods & Crime Reports



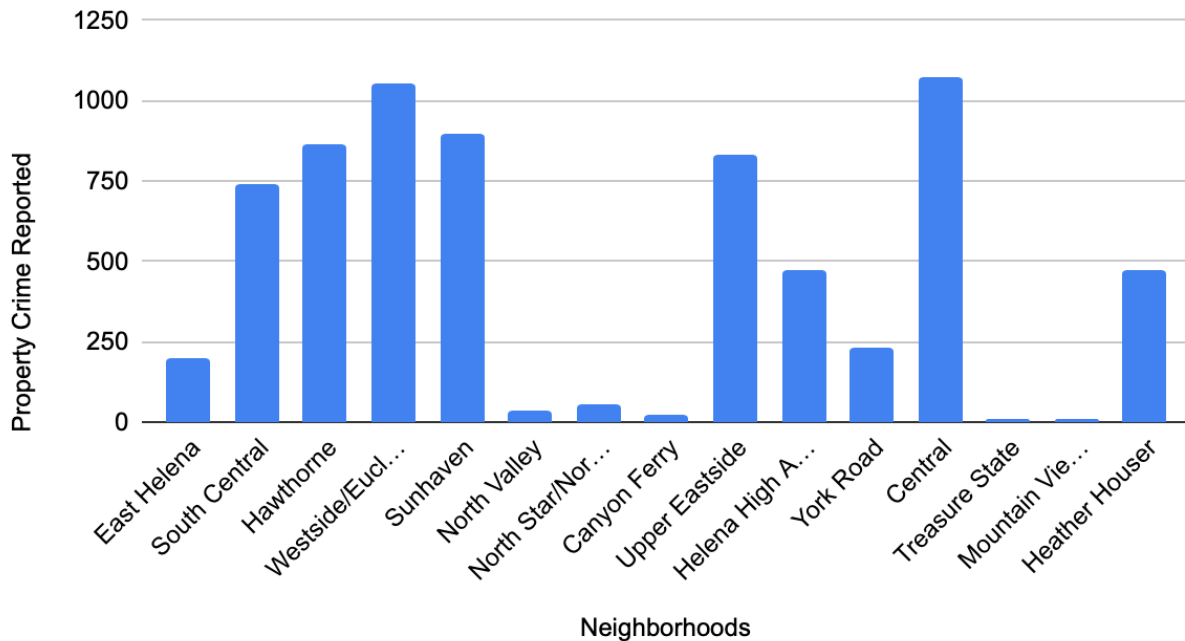
When taking a closer look at specific categories and neighborhoods we see some consistencies in relation to comments and crime reports, as well as some inconsistencies. The most prevalent example of this being seen between property crime comments and property crime reports. Northstar/North Helena has the highest number of comments, with a total of four comments per neighborhood related to property crime. Then followed by Westside/Euclid Ave with three comments and Helena High Area with two comments. East Helena, South Central, Hawthorne, Sunhaven, Upper Eastside, Central, Mountain View Meadows, and Heather Houser all had one comment per neighborhood related to property crime. And the lowest number of comments being a total of zero per neighborhood were from Treasure State, York Road, and

Canyon Ferry. When we compare this to the number of property crime intake reports per neighborhood, we found that Central had the highest number of property crime with a total of 1,075 reports. Followed by Westside/Euclid Ave (1,054), Sunhaven (899), Hawthorne (864), Upper Eastside (829), South Central (742), Heather Houser (474), Helena High Area (472), York Road (234), East Helena (199), Northstar/North Helena (144), North Valley (35), Canyon Ferry (23), Treasure State (13), and Mountain View Meadows (12) with the lowest amount of property crime reported. For the most part, the number of property crime comments for each neighborhood in relation to the number of property crime intake reports per neighborhood are consistent. Where we see an inconsistency is with NorthStar/North Helena being the highest rated neighborhood for comments and concerns about property crime, while crime rates suggest they have a below average rate for property crime to be reported or take place.

Neighborhoods & Property Crime Comments



Neighborhoods & Property Crime Reported



When looking at the descriptive statistics of this study we found a few other inconsistencies within the data comparison of comments per neighborhood and crime reports per neighborhood. Upper Eastside has the highest number of crime reports in eight of the eleven categories of crime analyzed in this study, but doesn't have the highest number of comments in any of the categories used to analyze levels of concern for crime. Westside/Euclid Ave has the highest total of intake crime reports, but only shows a high number of comments regarding concern in five of the eleven categories of comments. Another interesting finding was that Canyon Ferry had the second lowest total of crime intake reports but showed the highest amount of comments regard concern for violent crime. One more interesting finding this study had was that Northstar/North Helena and North Valley scored as one of the highest number of comments in seven of eleven categories, but had below average number of crime intake reports.

Discussion

The results of this study suggest that for the most part neighborhoods' perception of safety and rate of crime reports tend to have a negative correlation. Thus meaning neighborhoods with higher crime rates will perceive their neighborhoods as less safe through the use of symbolic interaction theory, as they interpret crime rates as cues to feel unsafe. Neighborhoods with lower crime rates will perceive their neighborhoods as more safe. But with the results of this study showing no significance between the two variables, it suggests that there are other underlying factors that are contributing to this negative correlation.

Some of the limitations of this study are as follows: one limitation may be that the statistics from the Helena police department are police intake incident reports, so classification of crime category may vary depending on the officer's decision on what to call the crime reported, thus creating a variation in the statistics across categories of crime analyzed. Another limitation in the crime statistics is the occurrence of overlap, since more than one crime may take place at the time of the event, and an officer may choose to classify the report as one crime over the other, again creating variation in the numbers of crimes in each category analyzed. One factor that was not controlled for that could be seen as a limitation, would be the presence of hospitals, mental health facilities, highschools, or low-income housing in different neighborhoods, thus creating an increase in theft, domestic violence, etc. One more important limitation of this study to take note of would be the use of the Nextdoor App. This app does not specifically code for crime and safety posts as it is not what the app is designed to collect, thus making comments and data limited.

Conclusion

This research project ultimately aimed to understand the relationship between current crime rates and perceptions of safety within a neighborhood. Although the results of this study came back as insignificant, we still gained a lot from this study. This study suggests that crime rates are a contributing factor within perceptions of safety, as many neighborhoods had a negative correlation of perceived safety and crime rates within their neighborhood. This study also suggest that there are other key factors we are missing as to why perceptions of safety are being affected within different neighborhoods, thus giving us new avenues to research. The results of this study are important as they provide support for previous studies' results and point us in new directions for future research.

This study does still suggest that the theory of symbolic interaction theory is used by individuals to analyze their surroundings and determine how they should feel in terms of safety. This is shown through the negative correlation of perceived safety and neighborhood crime rates, even with crime rates not playing a significant role in these feelings of safety. Because there was still a negative correlation, this suggests that individuals are still interpreting other factors and symbols as cues to feel unsafe.

Future researchers should take these limitations into consideration when furthering research on this topic. Questions that this study brought up for future research would be what other factors are contributing to the negative correlation between crime rates and perceptions of neighborhood safety? Why were most neighborhoods' perceptions consistent with their corresponding crime rates, while others were not? And what is the best way to analyze perceptions of neighborhood safety?

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