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Comparative Examination of Two Police Departments in Portland, Oregon's Greater
Metropolitan Area, Analyzing Assault Related Offense Reports Against: Departmental
Community-Policing Practices and Clearance-Rates

by

Elizabeth R. Ackerman

An undergraduate honors thesis submitted in partial fulfillment of the

requirements for the degree of

Bachelor of Science

in

University Honors

and

Political Science

Thesis Adviser

Richard Clucas, PhD

Portland State University

2020

Dedication

This work is dedicated to my resilient inner child. Thank you for hanging on.
May our experiences continue to fuel our work.

Abstract

Across the United States, community policing is widely accepted as the solution to cultivating restoration between communities and police agencies. Community policing is intended to act as a tool for advancing community safety and promoting community partnerships. Yet, there is limited research assessing the effectiveness of community Policing as the policy applications remain ambiguous across municipalities. Given the recent amplification in public awareness of police brutality and the struggles of police agencies across the United States, there is an increased need to measure the outcomes of community policing strategies. This research takes two of Oregon’s largest metropolitan cities- Portland and Hillsboro- and finds that increased community policing measures serve as a proactive tool for crime rate reduction and prevention.

Introduction

The Civil Rights movement of the 1960s exposed the deficiencies of traditional policing practices, shining a spotlight on the public’s need to reassess the status quo.¹ These pitfalls in practice gave way to the notion that community involvement should help shape how policing practices are implemented, particularly as policing intends to serve communities, not perpetuate harm. As community policing has entered the mainstream lexicon, the overall effectiveness of these ambiguous policies remains largely unstudied. By observing the practices of two metropolitan municipalities in Oregon, this study concludes that there is an association between community policing practices and mitigating crime.

¹“Community Policing: Origins And Evolution Of Community Policing.” In Law Library – American Law and Legal Information, 2020. <https://law.jrank.org/pages/1649/Police-Community-Policing-Origins-evolution-community-policing.html>.

Literature Review

Community policing is difficult to define because the term is a philosophy, and philosophies do not adhere to a strict set of rules or offer a surefire roadmap for preventing and reducing crime. The founder and foremost expert, Robert Trojanowicz, defines community policing as a “philosophy of policing, based on the concept that police officers and private citizens work together in creative ways” to help mitigate crime by giving the community a stake in dictating how policing is executed.² Trojanowicz spent his entire career working, developing, researching, and consulting on community policing practices. While the philosophy reads as commonsensical, the application and widespread adoption have only taken place over the last thirty years.

While community policing has been widely embraced by agencies nationwide, some critics remain skeptical, particularly as data supporting this philosophy remains largely unassessed.³ Some of this is due to the differences among the historicity of police agencies, like the ones mentioned in the case examples used for this study. No two departments are alike, and each agency’s interpretation of community policing can differ vastly.⁴ Building on Elizabeth Wrenn Johnson’s dissertation, this work intends to help add to the fountain of knowledge on the effectiveness of community policing in practice and further explores how community policing policies influence crime reduction.⁵ Elizabeth Wrenn Johnson took on a multi-dimensional

² Trojanowicz, Robert; Kappler, Victor E.; Gaines, Larry E.; Bucqueroux, Bonnie. *Community Policing: A Contemporary Perspective, Second Edition*. 2nd ed. Cincinnati, OH: Anderson Company, 1990. Pg. 3-4

³ Moore, 1992; Skogan & Frydl, 2004; Weisburd & Eck, 2004; Reisig & Kane, 2014; as cited in

⁴ Michael D. Reisig and Robert J. Kane. *The Oxford Handbook of Police and Policing*. Oxford Handbooks. Oxford University Press, 2014.

⁵ Elizabeth Wrenn Johnson. “Community-Oriented Policing and Crime Rates and Crime Clearance Rates in North Carolina.” Walden University Scholarworks, Walden Dissertations and Doctoral Studies Collection, 2017.

comprehensive community policing study that evaluated the effectiveness of community policing practices on violent and property crime and evaluated their clearance rates over 9 municipalities in Carteret County, North Carolina. In the field of criminal justice, both locally and federally, clearance rates represent the number of cases solved (or cleared) in correlation with the reported number of cases overall. Johnson's study reflected a relationship between community policing and the impacts these philosophies have on the clearance rates of violent and property crime.

Study Design

The current state of tensions between citizens and police agencies across the United States is not a new phenomenon, particularly as one considers the roots of policing in American history.⁶ Through the 1960s to present, the United States has become acutely aware of the struggles between communities and law enforcement officials. Further realizing a large disconnect between agencies and citizens, and in response to this growing friction, departments across the nation began dabbling with a new method of policing known as community policing.⁷ Thanks to the critical work done by academics like Robert Trajanowicz in the 1990s, implementation of community policing methods is on an upward trend among agencies across the nation.⁸

With goals like bridging community trust, increasing community partnerships, and proactively reducing crime, community policing offers promising potential for restoration among

⁶ Olivia B. Waxman. "How the U.S. Got Its Police Force." TIME Magazine, May 18, 2017. <https://time.com/4779112/police-history-origins/>.

⁷ James J. Chris. *Beyond Community Policing : From Early American Beginnings to the 21st Century*. London: Routledge, 2016.

⁸ Kenneth J. Peak. *Encyclopedia of Community Policing and Problem Solving*. Thousand Oaks, California: SAGE reference, 2013.

our communities.⁹ Yet, a major pillar of good policing practice is research assessment. While police departments and other local agencies are attempting to process large swaths of data, the National Institute of Justice recognizes a need to examine the validity of these claims.¹⁰ Building off Elizabeth Wrenn Johnson’s 2017 study, “Community-Oriented Policing and Crime Rates and Crime Clearance Rates in North Carolina,” I examine the relationship between assault crime clearance rates and community policing in two of Portland’s Greater Metropolitan Police Departments. The outcomes of this research show there is reason to believe there is a correlation between community policing and the ability for departments to mitigate assault crimes and increase departmental clearance rates.

Due to limitations in funding, this study is only able to explore data for two departments. Hillsboro Police Department and Portland Police Bureau were chosen for a few reasons. 1] These parameters mirror those of Johnson’s 2017 study. 2] The ratio of department size relative to the city population was nearly the same. 3] The agencies straddle a hillside that mitigates jurisdiction overlap while presenting a relatively identical sample population among income, diversity, and houselessness. 4] Oregon’s Public Records Law (ORS 192.410 – 192.505) made records for both departments readily available online, and representatives for both departments were cooperative in their communications. 5] Finding the necessary information for this study, from the City of Hillsboro and City of Portland archives was easy to access and navigate

⁹ National Institute of Justice, U.S. Department of Justice, and the Program in Criminal Justice Policy and Management., and John F. Kennedy School of Government, Harvard University. “Community Policing: A Practical Guide for Police Officials.” U.S. Department of Justice Office of Justice Programs, September 1989.
<https://www.ncjrs.gov/pdffiles1/nij/118001.pdf>.

¹⁰ David B. Muhlhausen, Ph.D. “Director’s Corner: Proactive Policing — What We Know and What We Don’t Know, Yet.” *National Institute of Justice*, January 17, 2018.
<https://www.nij.gov/about/director/Pages/muhlhausen-proactive-policing.aspx>.

compared to other Oregon agencies. 6] Both, Hillsboro and Portland have a historically different relationship with assimilating community policing into their practices. Hillsboro has taken a holistic approach to community policing, whereas Portland struggles to adapt creative community-oriented approaches to expand on their practices. Hillsboro offers officers increased social-justice and diversity training, additional time off to reduce burnout and wellness benefits like yoga and mindfulness workshops. By emulating Johnson’s work and applying their model to Portland and Hillsboro, this research can eliminate bias. Access to reliable policing data is limited, and the practice of data collection is relatively new for many agencies thus Oregon’s public record laws increase data availability making studies like this possible. Lastly, the radically different approaches in Portland and Hillsboro's adoption of community policing policies helps shine a light on the variance between outcome success in their overall clearance rates for assault-related crimes.

Robert Trojanowicz emphasizes the importance of assessing the outcomes and effectiveness of departments by reflecting on the “great deal of diversity” in community policing practices among agencies and “how the philosophy is making leap into action.”¹¹ Trojanowicz highlighted that Portland Police Bureau, upon adopting community policing practices made, “partnership empowerment, problem-solving, accountability, and service orientation” foundations for their community policing policy design. Seattle followed in Portland’s footsteps but added that community policing should be defined by the department and community.¹² This drastically juxtaposes the Portland Police Bureau’s prescriptive approach to community policing.

¹¹ Trojanowicz, Robert; Kappler, Victor E.; Gaines, Larry E.; Bucqueroux, Bonnie. *Community Policing: A Contemporary Perspective, Second Edition*. Pg. 184

¹² Trojanowicz, Robert; Kappler, Victor E.; Gaines, Larry E.; Bucqueroux, Bonnie. Pg.184-185

For this reason, reflecting on the historical makeup of these departments is an important tool for understanding what community policing policies work and those that do not.

Portland Police Bureau

Portland's Police Bureau formed in 1870. Portland formed its police union in 1942, and shortly after, Portland's rapidly accelerating population began to strain the police force creating institutional problems that have carried on into the present.¹³ In 1993 Charles Moose was appointed as Portland's first black police chief following decades of eroded trust between the community of Portland and their notoriously corrupt police bureau.¹⁴ Many of Portland Police Bureau problems, inherited by Charles Moose, were related to the longstanding systemic issues among the department. Issues ranged from payout systems, illegal surveillance, and political constraints held the department back for decades.¹⁵ Beyond becoming Portland's first black police chief, Moose was a crucial advocate and community policing, theorist. In the 1990s, Moose helped the Portland Police Bureau become one of the standards for community policing practices among departments nationwide.¹⁶ Yet this status among the US would be short-lived following Moose's departure, as Portland Police Bureau fell back into old habits, once again struggling to implement effective community policing policies and structures.¹⁷ For the sake of

¹³ Portland Police Bureau. "History of the Portland Police Bureau." The City of Portland, 2019. <https://www.portlandoregon.gov/police/40004>.

¹⁴ Rachel Zimmerman. "Guess Who's Coming to Power?" Willamette Week. 22-7/28 1993.

¹⁵ Douglas Jon Kenck-Crispin. "Charles A. Moose: Race, Community Policing, and Portland's First African American Police Chief." PDXScholar, January 5, 2017, 215. <https://doi.org/10.15760/etd.5310>.

¹⁶ Douglas Jon Kenck-Crispin. "Charles A. Moose: Race, Community Policing, and Portland's First African American Police Chief," 176

¹⁷ Maxine Bernstein. "Community Distrusts Portland Police; Police Say Community Doesn't Understand Their Jobs." The Oregonian, March 20, 2019, sec. Crime. <https://www.oregonlive.com/crime/2019/03/community-distrusts-portland-police-police-say-community-doesnt-understand-their-jobs.html>.

this study, we looked into assault-related crimes stemming from 2011-2013, and 2017. These periods were chosen for their accessibility of comparable data needed to make the necessary assessments for this study. Data prior to 2011 is not easily accessible, and newer data remains unpublished. According to the US Census Bureau in 2017, Portland had an estimated 647,805 people, the median household income was \$61,532, and a poverty level significantly above the national average.¹⁸ Lastly, Portland, although a major urban city, disproportionately underrepresents minorities falling below the national average among every ethnic group. According to the Uniform Crime Reporting (UCR), in 2016, Portland had 14.1 officers per every 10,000 citizens.¹⁹

Hillsboro Police Department

The Hillsboro Police department has a history that is disparate from that of their Eastside counterparts Portland Police Bureau. Hillsboro Police Department was largely established in 1947.²⁰ Due to Hillsboro's relative infancy as a city and police department, the systemic conditions of their police agency are entirely different. While there is no current data on this, one studying community policing may want to explore Hillsboro's growth as an agency in tandem with the public's widespread interest in community policing practices. Not having to fight internal preexisting systemic structures, could potentially shine a light on the ease with which departments integrate community policing strategies versus established departments who

¹⁸ United States Census Bureau. "QuickFacts Portland City, Oregon; United States." Portland, OR (2017). US Census Bureau, n.d.

<https://www.census.gov/quickfacts/fact/table/portlandcityoregon,US/PST045218>.

¹⁹ "Police Employment, Officers Per Capita Rates for U.S. Cities." DATA | SAFETY / JUSTICE. Governing The States and Localities, July 2, 2018.

<https://www.governing.com/gov-data/safety-justice/police-officers-per-capita-rates-employment-for-city-departments.html>.

²⁰ Rae Ann Campbell. "Police Department Operates on Ideals." The Hillsboro Argus. October 19, 1976.

struggle to implement community-oriented practices following long term adoptions of traditional policing practices that rejected public participation. One of Hillsboro PD's most notable community policing initiatives was their data collection of traffic stops in 2000.²¹ This information shone a light on the racial profiling happening among their traffic patrol officers, and beyond merely collecting and disseminating this data, the department responded with racial bias and equity training to address the issue as they arose.²² The department remains a training facility for numerous organizations and police functions maintaining their status as one of the largest community-focused agencies serving one of the most diverse cities in Oregon.²³ In 2017 Hillsboro's estimated population was 106,894, their median household income \$75,599, the poverty level was 10.8%, and the city's ethnic minority groups represent more of the community than national averages.²⁴ As of 2017, Hillsboro has 12.6 officers to every 10,000 residents.²⁵

Issues

No two departments are alike, because each agency interprets community policing differently.²⁶ Building on Johnson's dissertation, this work intends to help add to the source of knowledge on the effectiveness of community policing in practice, further exploring how practices impact the intended outcomes of clearance rates and crime reduction.²⁷ While this

²¹ David Steves. "Oregon House Approves Bill to Study Police Stops for Racial Profiling." *The Register Guard*, April 13, 2001.

²² David Steves. "Oregon House Approves Bill to Study Police Stops for Racial Profiling."

²³ Lee Dobrowolski, Chief of Police. "Police." *The City of Hillsboro*, 2019.
<https://www.hillsboro-oregon.gov/departments/police>.

²⁴ United States Census Bureau. "QuickFacts Hillsboro City, Oregon; United States." *Hillsboro, OR (2017)*. Hillsboro, OR.: US Census Bureau, 2019.
<https://www.census.gov/quickfacts/fact/table/hillsborocityoregon,US/PST045218>.

²⁵ "Police Employment, Officers Per Capita Rates for U.S. Cities." *DATA | SAFETY / JUSTICE*.

²⁶ Michael D. Reisig and Robert J. Kane. *The Oxford Handbook of Police and Policing*. Oxford Handbooks. Oxford University Press, 2014.

²⁷ Elizabeth Wrenn Johnson. "Community-Oriented Policing and Crime Rates and Crime

research paper is smaller in comparison to the aforementioned dissertation of Elizabeth Wrenn Johnson. Time, funding, and department cooperation all played a role in defining the depth and limitations of this independent academic study. Secondly, delineating a clear picture of commitment to community policing by measuring the number of officers dedicated to community policing tasks over the total number of officers proved difficult as department representatives could not offer clear answers. This study was able to collect this data for the 2018 year, and applies that percentage over all four data years, assuming this number holds over time for each department's percentage of officers dedicated to community policing. Lastly, our data set includes assault report and clearance rates for 2011, 2012, 2013, and 2017. These were the years where data was accessible, note there is a spike in overall assault crimes between 2013 and 2017. This could be explained by several variables, like the Portland metro areas population boom, escalation of protests following the 2016 election cycle, and increases in homelessness. Despite these limitations, this study intends to contribute to the public policy cannon on effective community policing methods. The methods used are unbiased and can provide city officials with evidence that may help lay out a road map for where funding should go, and how policing policies should be implemented. Over the years, the Portland Police Bureau has made repeated requests for increased monetary funding, often stating poor clearance rates as a primary driver for their monetary needs. Further evaluation of the Portland Police Bureau's policing styles may explain their clearance rates outside of monetary deficiencies. Thus, this research acts as a platform for future evaluations in how policing styles correlate with crime clearance rates.

Methodology

This research seeks to offer a quantitative analysis of the effectiveness of community-oriented policing in mitigating assault crimes and increasing clearance rates across two of Portland, Oregon's largest policing bureaus. Both communities have a stake in the effectiveness of their department's clearance rates in assault-related crimes as do their communities. Particularly, as the greater Portland metropolitan area has observed an ample rise in assault-related crimes over the last 5 years.

*“Assaults other than sexual assaults jumped considerably in the downtown [Portland] neighborhoods. Officers recorded 861 assaults from May to November in 2017, nearly 25 percent more than the same period in 2015.”*²⁸

The point of doing a non-experimental research approach is to help assess some of the large swaths of policing data left unassessed across the United States. The variables and their definitions as they relate to the Hillsboro Police Department and Portland Police Bureau are as follows:

- *Community-oriented policing* as Portland Police Bureau notes is centered around the relationship between the community and police agencies, and that this relationship is meant to usher a “reduction in the fear of and occurrence of crime through a resolution of immediate community safety problems and identification of root causes of crime and disorder.”²⁹ These values align with most traditional

²⁸ Anna Marum. “Downtown Portland’s Paradox: Crime, Public Perceptions Threaten Growth, Retailers Say.” *The Oregonian*, January 7, 2018, sec. Business.
https://www.oregonlive.com/business/2018/01/downtown_portlands_paradox.html.

²⁹ The City of Portland OR. “0024.00 Community Policing Purpose,” Policy, 2019.
<https://www.portlandoregon.gov/police/article/525130>.

community policing practices like those set forward by Robert Trojanowicz.³⁰ Hillsboro Police Department attempts to build on these primary foundations, and have expanded their definition to promote more accountability within their ranks by focusing on how officers manage themselves in the community, a topic that has been touched on by community researchers like Trojanowicz in their work with juvenile offenders.³¹ Hillsboro has been innovative in its approach to adopting community policing styles that are cutting-edge, setting standards for forces across the country with things like mindfulness training to keep officers more resilient in dealing with strife.³² For this study, *commitment to community-oriented* policing was the continuous independent variable. I used Elizabeth Wrenn Johnson’s method of measurement, and I determine this by assessing the number of officers assigned to community policing activities over the total number of sworn officers in the department.³³

- *Assault Crimes* and their classifications do not differ among departments. Data collected from the sample year (2017) came from publicly accessed documents provided by the Portland Police Bureau to the City of Portland,³⁴ and Area Vibe’s

³⁰ ROBERT TROJANOWICZ, MERRY MORASH, JOANNE BELKNAP. “Implementing a Community Policing Model for Work with Juveniles: An Exploratory Study.” SAGE Journals 14, no. 2 (June 1, 1987). <https://doi-org.proxy.lib.pdx.edu/10.1177/0093854887014002006>., 224.

³¹ ROBERT TROJANOWICZ, MERRY MORASH, JOANNE BELKNAP. “Implementing a Community Policing Model for Work with Juveniles: An Exploratory Study.” 239-243

³² Rebecca Woolington. “Mindfulness in Policing: Hillsboro Cops Forge Revolutionary Path with Meditation Training.” The Oregonian. April 4, 2014. https://www.oregonlive.com/hillsboro/2014/04/mindfulness_in_policing_hillsb_1.html.

³³ Elizabeth Wrenn Johnson. Pg. 70-71

³⁴ Chief Danielle Outlaw. “Police Bureau FY 2018-19 Fall Budget Submission.” City of Portland, Oregon, September 12, 2018. <https://www.portlandoregon.gov/cbo/article/697833>.

assessments of Uniform Crime Reporting data from Hillsboro Police Bureau. Assault crimes, in this case, are the continuous dependent variables.³⁵

- *Assault Crime Clearance Rates* is the second continuous dependent variable based on the number of assault crimes cleared. The data was collected from the same sources as the reported *assault crimes* collection.³⁶

Given the sample populations, a two-sample t-test for difference of means was carried out to measure the association, if there is any, between *community-oriented policing* and *assault crime & clearance rates*. This statistical model is best for testing null hypotheses like the one explored here.

Ethics and IRB

All data and calculations submitted were done accurately and to the best of my abilities. No consent was needed, as this study was limited to one-on-one interactions with personnel, and no identifying information was included. All information is assumed accurate as these numbers are self-reported by the agencies themselves to the national Uniform Crime Reporting system. This research does not pose harm to any persons or agencies involved. Upon completion copies of this research will be supplied to both agencies and their respective city governments for transparency purposes. No IRB is needed for a study of this nature as there is no risk to involved persons or populations. There is no identifying information of interviewees, and all data was gathered from open-source networks. No special permissions were required.

³⁵ Areavibes.com. "Hillsboro, OR Crime." Crime and Demographics Report. Hillsboro, OR., 2017. <https://www.areavibes.com/hillsboro-or/crime/>.

³⁶ Portland Police Bureau Strategic Services Division. "Assault Statistics and Clearance 2017." Portland Police Bureau, February 13, 2018. <https://www.portlandoregon.gov/police/article/673041>.

Reliability and Validity Issues

Some reliability and validity issues arose during the data collection process that could impact the outcomes of this study. With crime-reporting relying heavily on police departments, there are vested interests in not bolstering crime rates, as their ability to clear reported crimes could translate poorly for the department. An example is Hillsboro not having seen a single hate crime, between the years of 2009-2014 despite reports from citizens who experienced these crimes.³⁷ Portland reported their assault crime clearance rates to the City of Portland in early 2018, but the Uniform Crime reporting webpage explains that not all statistics are accurate based on some cases not being cleared till the following year³⁸ leading me to believe Portland Police Bureau's budget document submitted to the City of Portland is suspect.³⁹ Even with these reliability issues, this research can still carry forward, as these are not uncommon issues found in analyzing policing data and were expected.

Theses

In theory, if a department is implementing community policing practices and successfully engaging the community in their efforts to solve assault-related offense this will present itself by reflecting lower crime rates and higher clearance rates. The American Bar Association has reiterated a need to measure policing outcomes as they face an uphill battle in ensuring victims of crimes and criminals alike are treated fairly in a dubious system of policing.

³⁷ Associated Press. "Police Fail to Consistently Report Hate Crime Numbers to FBI, AP Investigation Finds." *The Oregonian*. July 3, 2016, sec. Data.
https://www.oregonlive.com/data/2016/06/no_full_accounting_of_hate_cri.html.

³⁸ Uniform Crime Report. "2017 Crime in the United States." FBI, 2018.
<https://ucr.fbi.gov/crime-in-the-u.s/2017/crime-in-the-u.s.-2017/topic-pages/clearances>.

³⁹ Portland Police Bureau Strategic Services Division. "Assault Statistics and Clearance 2017."

“The American Bar Association suggests that the police should be measured generally in accordance with their ability to achieve objectives and priorities selected for police service in individual communities.”⁴⁰

Like Elizabeth Wrenn Johnson, I expect to find that a reduction in crime-rates will be associated with an increase in commitment to community policing.⁴¹ This follows the logic that community policing works as a proactive preventative approach to crime-solving and reduction versus treating policing as a reactive entity.⁴² This thesis aspires to test the following theories and hypotheses to build on existing research and knowledge.

Research Question: Is there a statistical relation between the commitment to community-oriented policing and assault crime & clearance rates?

Hypotheses 1 (Ho1): There is no statistical relationship between commitment to community-oriented policing and assault related crime and clearance rates.

Hypotheses 2 (Ho2): There is a statistically significant relation between commitment to community-oriented policing and assault related crime and clearance rates.

After a preliminary analysis of the data set forth, I anticipate that Hillsboro will have a higher rate of clearance in accordance with their department committing a larger number of sworn officers to community policing practices. As well, Hillsboro expanded on the basic application of community policing and embraced a comprehensive approach to policing that adapts to the community's needs as problems arise. Portland Police Bureau has not implemented

⁴⁰ Trojanowicz, Robert; Dixon, Samuel L. Criminal Justice and the Community. Englewood Cliffs, N.J., 1974. Pg. 149

⁴¹ Elizabeth Wrenn Johnson. Pg. 97

⁴² Elizabeth Wrenn Johnson. Pg. 30

similar programs nor committed a similar percentage of officers to community policing, and I suspect this will lead to lower clearance rates for their department.

Hillsboro Police Department	2011	2012	2013	2017
Cases Cleared/Crimes Reported	60/86	58/92	44/57	64/127
Rate of Clearance	69.77%	63.04%	77.19%	50.39%
Portland Police Bureau	2011	2012	2013	2017
Cases Cleared/Crimes Reported	766/1,842	840/1,892	761/1776	3,706/7,266
Rate of Clearance	41.59%	44.40%	42.85%	51.00%

Data Analyses

For the calendar year of 2018, Hillsboro Police Department reported 66 of 153, or 49.62%, of their sworn officers, were assigned to community policing efforts.⁴³ In the same year, Portland self-reported having 344 of 918 sworn offers, or 37.47%, of their force acting as community policing agents.⁴⁴ Due to the aforementioned data limitations, the sample of assault crimes and clearance rates were observed for the 2011, 2012, 2013, and 2017 calendar years. Clearance rates were collected in the same fashion. Assault clearance rates and assault crimes were averaged for each municipality. Sample standard deviations were calculated for both, so the two-sample t-test for difference of means could be determined.

With the following information collected, the first step was to calculate the sample standard deviation for each department utilizing the Sample Standard Deviation Formula.

$$s = \sqrt{\frac{\sum_{i=1}^N (x_i - \bar{x})^2}{N - 1}}$$

⁴³ Hillsboro Police Department. “2018 Annual Report.” Annual Police Review Report. City of Hillsboro, 2019. <https://www.hillsboro-oregon.gov/home/showdocument?id=23471>.

⁴⁴ Chief Danielle Outlaw. “Police Bureau FY 2018-19 Fall Budget Submission.”

x_i = Each value from the population

\bar{x} = Mean of the sample

N = Size of population

s = Standard Deviation of the sample

Portland Police Bureau

Step 1: Find the Population of Mean (or average rate of clearance) for 2011, 2012, 2013, and 2017

$$\mu = \frac{41.59 + 44.40 + 42.85 + 51.00}{4} = 44.96\%$$

Step 2: Perform Sample Standard Deviation Formula

$$s = \sqrt{\frac{[(41.59-44.96)^2 + (44.4-44.96)^2 + (42.85-44.96)^2 + (51-44.96)^2]}{3}}$$
$$s = 4.187$$

Hillsboro Police Department:

Step 1: Find the Population of Mean (or average rate of clearance) for 2011, 2012, 2013, and 2017

$$\mu = \frac{69.77 + 63.04 + 77.19 + 50.39}{4} = 65.10 \%$$

Step 2: Perform Sample Standard Deviation Formula

$$s = \sqrt{\frac{[(69.77-65.10)^2 + (63.04-65.10)^2 + (77.19-65.10)^2 + (50.39-65.10)^2]}{3}}$$
$$s = 11.381$$

	Hillsboro Police Department	Portland Police Bureau
Average rate of Clearance (\bar{x})	65.10%	44.96%
Standard Deviation (s)	11.381	4.187

T-Test

The independent t-test, also called the two-sample t-test, independent-samples t-test, or student's t-test is an inferential statistical test that determines whether there is a statistically significant difference between the means in two unrelated groups. In this instance, Portland Police Bureau and Hillsboro Police Department.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

\bar{x}_1 = Mean of first sample, Portland Police Bureau

\bar{x}_2 = Mean of second sample, Hillsboro Police Department

n_1 = Sample size (i.e., number of observations) of first sample

n_2 = Sample size (i.e., number of observations) of second sample

s_1 = Standard deviation of Portland Police Bureau

s_2 = Standard deviation of Hillsboro Police Department

The rate of clearance for PDX assault crimes ($M = 44.96\%$, $SD = 4.187$) over four years (2011-2013, 2017) compared to the rate of clearance for Hillsboro assault crimes ($M = 65.10$, $SD = 11.381$) over the same four years (2011-2013, 2017) was significantly less, $t(3.80) = -3.32$, $p = .032$.

The two-sample t-test for difference of means produced an output where the P-value (0.03) is less than the significance level of (0.05), which indicates a rejection of the null

hypothesis. A rejection of the null hypotheses suggests that there is a statistically significant relationship between a department's commitment to community policing and assault crime clearance rates.

Conclusions

As Elizabeth Wrenn Johnson found, there is a relationship between a department's commitment to community policing and the ability to mitigate crime and increase clearance rates.⁴⁵ Through replication of this model, this study also concluded that there is a statistical relationship between community-oriented policing on assault crime and their clearance rates. Hillsboro Police Department is more effective at clearing assault-crimes vis-à-vis their commitment to community policing. By replicating one area of Johnson's work, this body of research supports the collective conclusion that there is a correlation between crime prevention and increased clearance rates the more invested municipalities are in their commitment to holistic community policing practices. Associating clearance rates with the notion that policing power should be decentralized and allowing the community to have an equal stake and active role will hopefully encourage departments to collaborate creatively with communities to further expand crime prevention. This study exposes a need for further quantitative analysis of community-oriented policing in the Portland Metro area. Both city and public agencies across Oregon could benefit from assessing their data to see if they, too, should increase the percentage of officers assigned to community-oriented policing positions, if crime reduction and clearance are primary objectives for their departments. Adding to the growing body of research done on the effect community policing has on crime and clearance rates, our research would indicate support

⁴⁵ Elizabeth Wrenn Johnson. Pg. 70-71

for those hypotheses. If departments wish to prevent crimes proactively and see higher clearance rates, then increasing their commitment to community policing proves promising.

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