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THESIS

**UNDERSTANDING ENVIRONMENTAL FACTORS THAT
AFFECT VIOLENCE IN SALINAS, CALIFORNIA**

by

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December 2009

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**UNDERSTANDING ENVIRONMENTAL FACTORS THAT AFFECT
VIOLENCE IN SALINAS, CALIFORNIA**

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ABSTRACT

When a community is plagued by violence, the natural tendency is to determine *how* to change or reduce the violence levels. In the process, an equally important question of *why* violence occurs is often overlooked. This thesis analyzes the *why* with respect to violence levels in Salinas, California.

In order to determine specific environmental factors that affect violence in Salinas, the authors postulate nine broad independent variables (IVs) for analysis: Economy; Population; Housing; Education; Police Force; Prison Influence; Gang Rivalry; Social Service Programs; and Community Involvement. Components of these independent variables were compared to the violence rate per capita in Salinas to determine which environmental factors influence violence in Salinas.

Although data was not available for all of the IVs, the authors determined that the following factors influence violence in Salinas: the unemployment rate, average persons per household, vacant housing units, housing units per capita, the high school dropout rate, the high school graduation rate, the school average daily attendance, and the school budget. To lower overall violence levels, officials in Salinas should focus on: reducing the unemployment rate, the number of vacant housing units, and the high school dropout rate; and increasing the high school graduation rate and average daily attendance.

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I. INTRODUCTION

A. PURPOSE

When a community is plagued by violence, the natural tendency is to determine *how* to change or reduce the violence levels. The focus is typically centered on violence suppression, such as police action or prosecution, or violence prevention programs. In the process, an equally important question of *why* violence occurs is often overlooked. The purpose of this thesis is to analyze the *why* with respect to violence levels in Salinas, California. This paper aims to determine which, if any, environmental factors, such as the economy, the population, the police force, or community involvement, directly affect the violence level in Salinas, California.

B. BACKGROUND

Salinas, California is a primarily agricultural city located approximately 8 miles east of the Monterey Bay and 55 miles south of San Jose. It is the largest city in Monterey County, and is the county seat. The fertile Salinas Valley is one of the richest farming regions in California, producing a multitude of fruits, vegetables, and wine grapes in a nearly \$4 billion agriculture industry. Over 80 percent of the lettuce produced in the United States is grown there, earning the Salinas Valley the nickname “Salad Bowl of the World.”¹ The agricultural industry requires a robust employment base, and thousands of migrant workers from Mexico travel to the Salinas Valley annually during the growing season to earn money for their families.

The population of Salinas exploded from 1980 to 2000, going from 80,438 to 151,060.² Part of this boom occurred due to soaring home prices in the Monterey and San Jose areas, where many middle income employees could not find affordable housing.

¹ City of Salinas, “History of Salinas,” <http://www.ci.salinas.ca.us/visitors/history.cfm>.

² State of the Cities Data Systems, “SOCDS Census Data: Salinas, CA,” <http://socds.huduser.org/>.

Salinas offered lower home prices and convenient highway access for commuters.³ But the lower home prices did not last. As demand increased for housing in Salinas, home prices skyrocketed. This phenomenon occurred throughout California, creating some of the most expensive real estate in the United States in the late 1990s. The lower income residents of Salinas were hit extremely hard by the trend, adding to other woes including a high unemployment rate and low-paying jobs. The combination of these factors caused a high population density in some areas of Salinas, particularly the eastern portions of the city, and forced extended families to share inadequately small spaces.⁴ Population stabilization occurred in the 2000s, and the 2009 population estimate is 152,597.⁵

The racial demographics also varied over the years, with a large increase in the Hispanic population and a corresponding decrease of other races from 1980 until present. In 1980, the racial breakdown in Salinas included 52% Caucasian, 38% Hispanic, 8.2% other, and 1.7% African-American.⁶ In 2007, the U.S. Census Bureau estimated the racial demographics as 70% Hispanic, 18.6% Caucasian, 9.6% other, and 1.8% African-American.⁷

The population increase in Salinas also included a rise in street gang membership. Since at least 1960, Salinas has been plagued by gang violence. In his “90-Day Report to the Community,” Chief of Police Louis Fetherolf reviewed the history of gang problems in Salinas. Highlights included: gang fights reaching ‘epidemic proportions’ in 1960; gunfire, roaming gangs, and murders in the 1970s; deteriorating relations with the Latino community in the 1980s; gang attacks, homicides, and home fire bombings in 1991; a then record-setting 24 homicides in 1994; and a new record of 25 homicides in 2008,

³ Laurie Giesen, “Salinas Growing Northeast,” *The Salinas Californian*, June 27, 2000, <http://www.chispahousing.org/pdf/salinasgrowingnortheast.pdf>.

⁴ Larry Cohen and Jeane Erlenborn, “Cultivating Peace in Salinas: A Framework for Violence Prevention,” June 1999, http://www.preventioninstitute.org/pdf/Cultivating_Peace.pdf, 3.

⁵ California Department of Finance, “January 2009 City Population Ranked by Size, Numeric and Percent Change,” <http://www.dof.ca.gov/>.

⁶ State of the Cities Data Systems, “SOCDS Census Data: Salinas, CA.”

⁷ U.S. Census Bureau, “Fact Sheet: Salinas city, California,” <http://factfinder.census.gov/>.

including 23 attributed to gang violence.⁸ As of December 11, 2009, Salinas eclipsed its record again with 28 homicides, all of them gang-related.

The increase in gang membership over the years has three main components. First, as young gang members age, get married, and have children, they do not necessarily quit their gangs for more licit occupations. The children are exposed to the gang as a normal facet of the family life and often follow their parents' footsteps into the gang. Working for the gang is simply another industry or occupation, similar to law enforcement, military service, or agriculture. In Salinas it is common to see third- and even fourth-generation gang members.

A second significant factor in the gang membership increase in Salinas, and Monterey County as a whole, is the close proximity of Salinas Valley State Prison (SVSP), 22 miles south of Salinas. In the 1970s, most of the gangs in Salinas fell under the Norteño gang umbrella. Norteños are primarily second- or third-generation Mexican-American gangsters in northern California.⁹ The Nuestra Familia (NF) prison gang, which uses the Norteños as its foot soldiers, had a large presence in SVSP. Newly incarcerated individuals at SVSP, even if not affiliated as gang members, typically aligned themselves with NF to survive. Once released, they carried out orders and instructions from NF and further indoctrinated themselves into the gang culture.¹⁰

The Norteños' main rivals, the Sureños, are primarily Latino gangsters in the urban cities in southern California. In Salinas, Sureños are typically recent immigrants or children of migrant farm workers.¹¹ The earliest Sureño gang in Salinas appeared in the late 1970s, formed by migrant males repeatedly victimized by the Norteños.¹² Previous geographical dividing lines diminished with the incarcerations of Norteños and Sureños

⁸ Louis Fetherolf, "90-Day Report to the Community," July 21, 2009, <http://www.ci.salinas.ca.us/services/police/pdf/90-DayReport-071909.pdf>, 6.

⁹ Zachary Stahl, "The Loading Zone," *Monterey County Weekly*, October 29–November 4, 2009, 17.

¹⁰ Brian Parry, "California Prisons and Street Gangs" (briefing presented at the annual California Gang Investigators Association National Gang Violence conference, Anaheim, California, July 22, 2009).

¹¹ Stahl, "The Loading Zone," 17.

¹² California Department of Justice Bureau of Investigations and Intelligence, "Gangs Threat Assessment: Salinas, California," September 2009, 8.

at prisons throughout California. SVSP, formerly a NF and Norteño stronghold, has been integrated with Sureños because of overcrowding in all California prisons. Additionally, to help quell prison violence, California has to balance the numbers of various gang factions within the prisons to prevent gang-related incidents.¹³ This forced integration in the prisons extends to the surrounding communities, as gang members and families sometimes relocate to be near an incarcerated gang member.¹⁴ Salinas is a natural choice for relocation since it offers jobs and community and social services. The Salinas Police Department (PD) estimates the current ratio of Norteños to Sureños at around 60 percent to 40 percent, respectively.¹⁵

The third factor in the rise in gang membership is the gang culture itself. Gangs have evolved as a type of identity, work, and association for American youths, and provide a structuring role in many facets of life.¹⁶ Young Americans are drawn to gangs for many reasons: the sense of belonging, identity, and fellowship that gangs embody; the aspect of protection from bullies and other gang members; the perception of an exciting lifestyle and culture; the opportunity to make money or gain access to drugs; and the expectation that being a gang member will equal power and prestige. Gangs fill a void in the lives of alienated youths, helping them overcome factors such as racism, oppression, poverty, and neglect. Gangs help the powerless feel in control, even if only in a small territorial space; they offer security and enforce racial or ethnic borders in their territory; they control access to earning opportunities, jobs, and housing in their jurisdiction; and they provide their members with a sense of “warrior glamour.”¹⁷ Gangs play an important role in a member’s life, offering services and opportunities unavailable

¹³ Brian Parry, “California Prisons and Street Gangs” (briefing presented at the annual California Gang Investigators Association National Gang Violence conference, Anaheim, California, July 22, 2009).

¹⁴ Cohen and Erlenborn, “Cultivating Peace in Salinas,” 12.

¹⁵ CA DOJ, “Gangs Threat Assessment: Salinas, California,” 12.

¹⁶ Manuel Castells, *The Power of Identity*, 2nd ed. (Malden, Massachusetts: Blackwell Publishing, 2004), 67.

¹⁷ Mike Davis, “Reading John Hagedorn,” in *A World of Gangs: Armed Young Men and Gangsta Culture*, by John Hagedorn (Minneapolis: University of Minnesota Press, 2008), xi.

or unattainable from the local community or government. In Salinas, the gang problem is so institutionalized that the gangs there recruit kids as young as elementary school age.¹⁸

Current numbers vary, but authorities estimate between 3,000 and 3,500 active gang members in Salinas.¹⁹ Additionally, there are an estimated 2,000 inactive gang members, and between 3,000 and 5,000 family members involved.²⁰ Using the more conservative figure of 3,000 gang members out of Salinas' population of 152,597, gang members represent nearly two percent of the Salinas population. The "National Gang Threat Assessment, 2009" (NGTA) estimates United States gang membership at just over one million as of September 2008, including 900,000 gang members in local communities and 147,000 in prisons.²¹ Using a rough U.S. population estimate of 304 million in September 2008,²² the NGTA's 1.047 million estimate translates to gang members comprising 0.344 percent of the U.S. population. Based on this, the rate of gang members in Salinas is almost six times the national average. Even using a more robust estimate of a one percent rate of gang members in the United States, Salinas is still double the national average.²³

According to the NGTA: most gangs are violent and commit a number of crimes, including drug distribution; the expansion of gang influence increases crime and violence in communities; criminal gangs commit as much as 80 percent of crime in a community, including alien smuggling, armed robbery, assault, auto theft, drug trafficking, extortion,

¹⁸ Salinas Police Department estimate, April 9, 2009.

¹⁹ In his "90-Day Report," Chief Fetherolf notes, "There are an estimated 3,500 gang members or associates in Monterey County, most of them living in Salinas" (p. 7).

²⁰ Salinas Police Department estimate, April 9, 2009.

²¹ U.S. Department of Justice National Gang Intelligence Center, "National Gang Threat Assessment 2009," January 2009, <http://www.usdoj.gov/ndic/pubs32/32146/32146p.pdf>, 6.

²² As of September 25, 2009, the U.S. Census Bureau's U.S. Population Clock (POPClock) Projection estimated the U.S. population at 307,544,236, retrieved at <http://www.census.gov/population/www/popclockus.html>. The POPClock assumes a net gain of one person in the U.S. every 10 seconds, which equates to an additional 3,153,600 people in the U.S. since September 2008. Subtracting the two estimates results in a rough U.S. population estimate of 304,000,000 in September 2008.

²³ Matthew O'Deane, "Gangs 101" (briefing presented at the annual California Gang Investigators Association National Gang Violence conference, Anaheim, California, July 20, 2009). In this brief, Investigator O'Deane indicated that as a general rule, authorities can estimate that one percent of any given population are gang members.

fraud, murder, and weapons trafficking; and gangs are the “primary retail-level distributors of most illegal drugs.”²⁴ Salinas is no exception to these statistics. Salinas gangs commit crimes including auto theft, burglary, identity theft, aggravated assault, homicide, drug trafficking and sales, and robbery.²⁵ Based on Salinas PD crime reports, gangs have been responsible for the majority of homicides, drive-by shootings, and firearms crimes since 2002.²⁶ In the same timeframe, gangs committed approximately 25 percent of the total number of violent crimes in Salinas each year.²⁷ In other words, *two percent of the population commits 25 percent of the violent crimes.*

As shown in Figure 1, Salinas has been higher than both the U.S. and California levels for violent crimes per capita since 1993. The homicide rate in Salinas has been much more random, making it difficult to predict how many homicides will occur from one year to the next. As shown in Figure 2, the number of annual homicides over the period from 1980 to 2008 ranged from a low of two in 1983 to a high of 25 in 2008.²⁸ Naturally homicides receive more attention than other violent crimes, even though they typically represent less than two percent of the total number of violent crimes each year in Salinas. The statistics in Salinas for 2008 and 2009 are chilling: 23 of the 25 homicides in 2008 and all 28 homicides so far in 2009 are classified as gang-related.²⁹ For 2009, all of the victims have been male, ranging in age from 14 to 36. Thirteen are identified as current or former Norteños, ten are identified current or former Sureños, three are identified as cases of mistaken identity with no actual gang affiliation, and two are pending classification.³⁰

²⁴ USDOJ National Gang Intelligence Center, “National Gang Threat Assessment 2009,” iii.

²⁵ CA DOJ, “Gangs Threat Assessment: Salinas, California,” 9.

²⁶ Salinas Police Department, Salinas Crime Reports, 1993–2009.

²⁷ Ibid.

²⁸ Salinas Police Department, Salinas Crime Reports, 1980–2008.

²⁹ CA DOJ, “Gangs Threat Assessment: Salinas, California,” 9.

³⁰ Ibid., and Salinas Police Department reports.

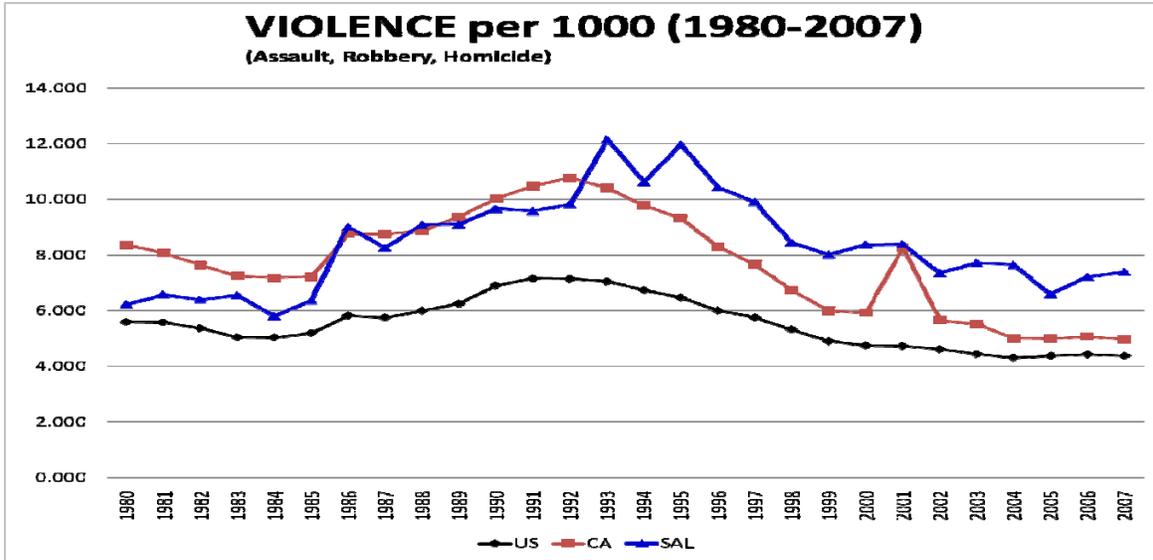


Figure 1. Violence rates per capita for the United States, California, and Salinas³¹

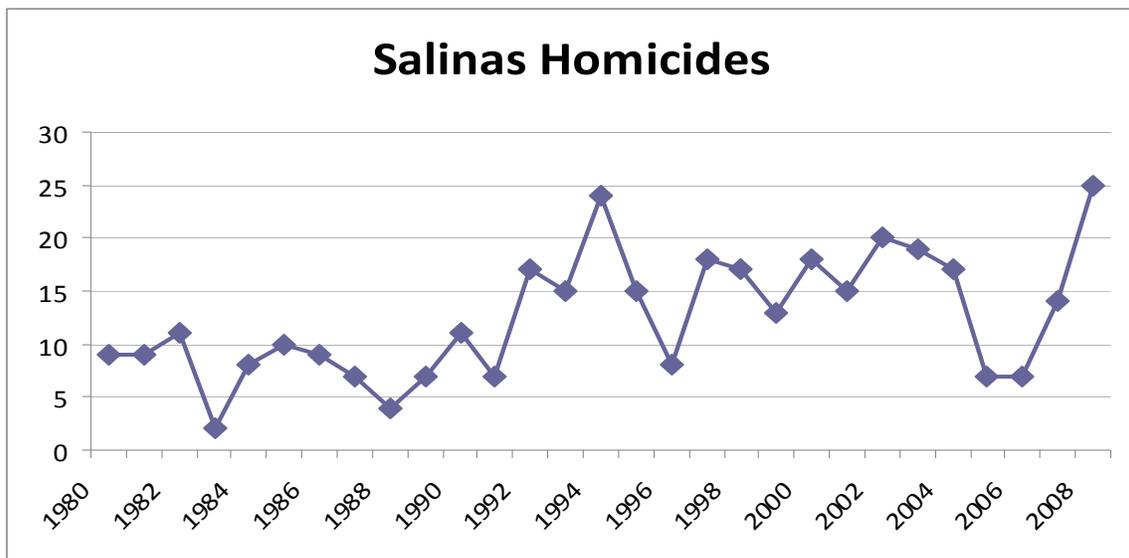


Figure 2. Salinas homicides, 1980-2008³²

³¹ United States Department of Justice Bureau of Justice Statistics, <http://bjsdata.ojp.usdoj.gov/dataonline/Search/Crime/Local/JurisbyJuris.cfm>.

³² Salinas Police Department, Salinas Crime Reports, 1980–2008.

C. LITERATURE REVIEW

The city of Salinas has tried several approaches to decrease the number of violent crimes committed each year. These approaches included increasing the number of kinetic police operations for focused time periods; establishing a Violence Suppression Unit in the Police Department; requesting grant money from the federal government to emplace new initiatives; and partnering with outside agencies to develop strategies for reducing violence. Although violence per capita has been on a downswing since the highs in the mid-1990s, Salinas has yet to reduce violence to the point of being below the national and California averages. Additionally, several initiatives disappeared over time due to resource constraints.

Following the violence spike that lasted from 1984-1993, Salinas received outside help. In 1995, the federal government awarded the Salinas PD a nearly \$1 million grant as part of the Community Oriented Policing Service Youth Firearms Violence Initiative. Salinas used this grant to make their anti-gang task force a full-time effort and formed a Police/Community Advisory Commission to “involve the community in crime reduction strategies.”³³ Other initiatives included the creation of the Salinas PD Violence Suppression Unit (VSU); the establishment of the Violent Injury Prevention Program; the introduction of PeaceBuilders, a prevention program aimed at elementary school children; and the formation of 20 neighborhood cleanup programs.³⁴ The results of these initiatives appeared promising. In 1995 the Salinas PD attributed 18.43 percent of all violent crime to gang activity; by 2000, that figure decreased to 10.98 percent. However, the trend reversed significantly, with the percentage of gang violent crime at 16.22, 21.17, and 24.16 respectively from 2001 to 2003.³⁵

³³ GunCite, “Success Stories,” <http://www.guncite.com/success.htm>.

³⁴ Ibid.

³⁵ Salinas Police Department, Salinas Crime Reports, 1993–2008.

In 1999, the city of Salinas and Partners for Peace³⁶ commissioned the Prevention Institute³⁷ to help “identify and analyze the underlying issues” of violence in Salinas, as well as “design a strategy for violence prevention.”³⁸ This strategy, entitled “Cultivating Peace in Salinas,” focused on reducing youth violence but also addressed the overall well-being of the community. “The intent of the framework is to provide a snapshot of community assets and needs and chart out the kinds of long-term efforts needed to prevent and reduce violence.”³⁹ The framework “represents a vision of creating a community culture of caring in Salinas,” a vision “of community compassion, of respect and responsibility.”⁴⁰ The framework also emphasized a public health, or “comprehensive,” approach to reducing violence, recognizing that criminal justice alone could not solve the problem.⁴¹

To develop the framework, the collaborative process included focus groups, partnerships, and a survey regarding community perceptions of violence in Salinas. Among other things, the survey gauged respondents’ impressions of six types of violence: gang violence, domestic violence, gun violence, child abuse, sexual violence, and bullying.⁴² Of all survey respondents, 89 percent perceived gang violence to be the most prevalent form of violence in Salinas and the primary concern.⁴³ At the time of the survey, it was estimated that Salinas had 16 street gangs with approximately 1,500 to 2,000 members.⁴⁴

³⁶ Partners for Peace is a non-profit organization in Salinas, California, dedicated to youth violence prevention. The group focuses on literacy, education, youth employment, gang prevention, and providing services to families.

³⁷ Prevention Institute is a non-profit organization in Oakland, California, working to improve the health and well-being of communities through comprehensive prevention programs, created in collaboration through local policy development. See www.preventioninstitute.org.

³⁸ Cohen and Erlenborn, “Cultivating Peace in Salinas,” i.

³⁹ *Ibid.*, iv.

⁴⁰ *Ibid.*, 2.

⁴¹ *Ibid.*, 4.

⁴² *Ibid.*, 5–6.

⁴³ *Ibid.*, 6.

⁴⁴ *Ibid.*, 6.

The survey respondents also identified what they perceived as the largest risk factors for violence in Salinas: alcohol and other drugs; family dynamics (unsupportive home life or physical/psychological abuse); witnessing and experiencing violence; the media (portrayal of violence as commonplace); economics (poverty, high unemployment, community deterioration); guns (readily available); incarceration (proximity to incarcerated gang members and violent subculture); oppression (sexism, racism, discrimination); literacy rates; and truancy.⁴⁵ As noted in the framework, “If violence is seen as typical and is reinforced by the media, family, community, or school, it will occur with greater frequency and lethality.”⁴⁶

After determining the primary risk factors for Salinas, the Prevention Institute and the focus groups developed a Spectrum of Prevention and Recommendations for Salinas. The recommendations included: invest in early childhood and parent support initiatives; improve literacy rates; develop initiatives to promote positive community values; develop a strategy to reduce gang violence; develop collaboration between city, county, and school districts for plan implementation; increase after-school and recreation activities; reduce truancy; prioritize economic development and job training for youth; and develop public policies to address alcohol as a risk factor for violence and gun regulations.⁴⁷

Following the release of the “Cultivating Peace in Salinas” framework, things looked positive for Salinas. The Packard Foundation provided a \$1 million grant to implement the framework,⁴⁸ and Partners for Peace secured an \$8 million grant for the federal Safe Schools/Healthy Students (SS/HS) Initiative for three years.⁴⁹ The SS/HS Initiative involved 14 partner organizations around Monterey County, including the school districts, the Monterey County Department of Health, and community

⁴⁵ Cohen and Erlenborn, “Cultivating Peace in Salinas,” 9–13.

⁴⁶ *Ibid.*, 17.

⁴⁷ *Ibid.*, 22.

⁴⁸ Jessica Lyons, “The Packard Foundation Has Made a Mark on Global Philanthropy, Nowhere More Profoundly Than in Monterey County,” *Monterey County Weekly*, October 25, 2001, <http://www.montereycountyweekly.com>.

⁴⁹ Safe Schools, Healthy Students, “Salinas SS/HS Initiative Reaches Into Every Corner of the Community,” http://www.sshs.samhsa.gov/initiative/spotlight_salinas.aspx.

organizations. Programs implemented under the SS/HS Initiative covered a wide swath: gang intervention, after-school programs, parent education, school resource officers to combat truancy and bullying, substance abuse prevention, and early childhood socialization.⁵⁰ Crime rates and the level of fear in the community decreased, and safety in downtown Salinas increased.⁵¹ But once again, the positive gains abated over time. The SS/HS Initiative and other grants expired, replacement funds were unavailable to continue the SS/HS programs, and prevention programs lost attention and resources in favor of intervention and enforcement programs.⁵² Although the violence levels per capita were lower in 2008 than in 1999 (6.574 vs. 8.012, respectively),⁵³ Salinas continues to run well above the California and United States averages (see Figure 1).

The latest initiatives to reduce violence include the Community Alliance for Safety and Peace (CASP) and Operation Ceasefire. CASP is a think-tank of law enforcement groups, educators, business and community leaders.⁵⁴ CASP plans to engage consultants from San Jose to draft a strategic peace plan.⁵⁵ Operation Ceasefire, a national program that began in Boston, offers high-risk gang members jobs and employment training in return for quitting gang life.⁵⁶ These programs are in their infancy stages, therefore no data is available regarding their effectiveness in reducing violence levels.

⁵⁰ Safe Schools, Healthy Students, "Salinas SS/HS Initiative."

⁵¹ Sonia Lee, Nicole Kravitz-Wirtz, and Larry Cohen, "Revisiting Cultivating Peace in Salinas: A Framework for Violence Prevention," July 2008, 1.

⁵² *Ibid.*, 1.

⁵³ See Appendix C, Table 4.

⁵⁴ Zachary Stahl, "Saving Salinas," *Monterey County Weekly*, March 26, 2009, <http://www.montereycountyweekly.com>.

⁵⁵ Stahl, "The Loading Zone," 17.

⁵⁶ Zachary Stahl, "Street Smart," *Monterey County Weekly*, June 25, 2009, <http://www.montereycountyweekly.com>.

D. METHODOLOGY

1. Dependent Variable

The dependent variable for this thesis is *violence per capita in Salinas*, with a related question of “Why has the violence rate increased or decreased over time?” The United States Department of Justice (USDOJ) classifies violent crime as homicides, assaults, rape, and robbery.⁵⁷ However, for this research violence will only include assaults, robberies, and homicides. Omitting rapes does not significantly alter the resultant data due to the relatively small numbers of rapes that occur in Salinas each year, typically averaging around five percent of total violent crimes. Additionally, the Salinas Crime Reports focused on gang-related activity do not include rapes. Although rapes outnumbered homicides for each year of the data presented, homicides are included because of the exponential increase in homicides in the last two years and the significant amount of attention that homicides receive.

Looking over the period from 1980 to 2008, assaults comprised about 67 percent of the violence in Salinas on average, robberies about 32 percent and homicides about 1.25 percent. Assault is defined as

[a]n unlawful physical attack or threat of attack. Assaults may be classified as aggravated or simple. Rape, attempted rape, and sexual assaults are excluded from this category, as well as robbery and attempted robbery. The severity of assaults ranges from minor threat to incidents which are nearly fatal.⁵⁸

Homicides are further classified as murders:

The Uniform Crime Reporting (UCR) Program defines murder and nonnegligent manslaughter as the willful (nonnegligent) killing of one human being by another. The classification of this offense is based solely on police investigation as opposed to the determination of a court, medical examiner, coroner, jury, or other judicial body. The UCR Program does

⁵⁷ United States Department of Justice Bureau of Justice Statistics, “Criminal Victimization in the United States – Statistical Tables Index,” July 7, 2005, <http://www.ojp.gov/bjs/abstract/cvus/definitions.htm>.

⁵⁸ Ibid.

not include the following situations in this offense classification: deaths caused by negligence, suicide, or accident; justifiable homicides; and attempts to murder or assaults to murder, which are scored as aggravated assaults.⁵⁹

Robberies are defined by the USDOJ as “[t]he taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear.”⁶⁰ Figure 3 depicts the total number of assaults, robberies, and homicides in Salinas since 1980 and the corresponding change in population. Figure 4 combines these two variables to show per capita violence over time at a rate of 1:1,000.

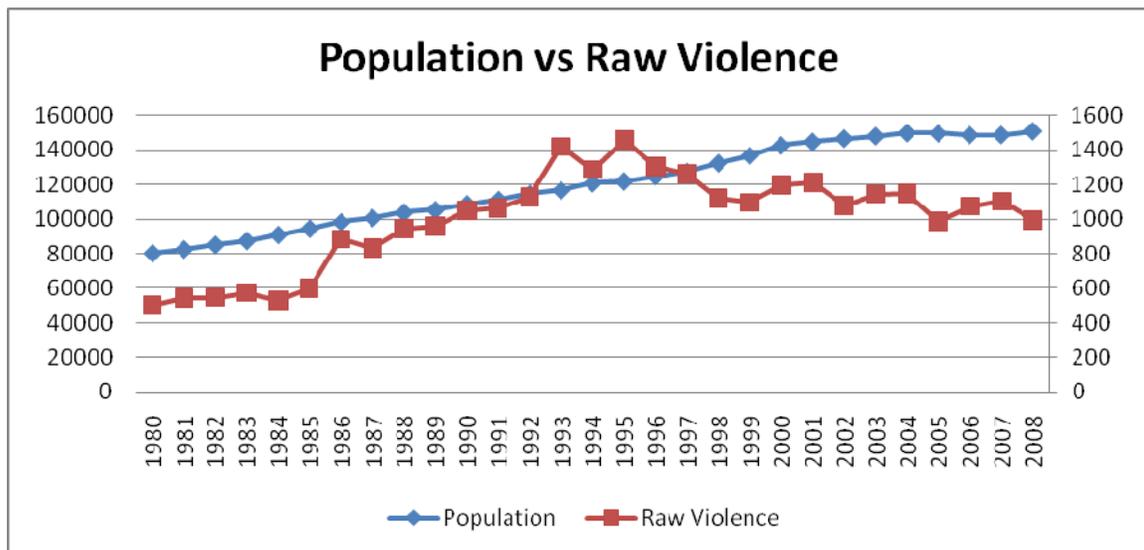


Figure 3. Violent incidents and population in Salinas from 1980 to 2008⁶¹

⁵⁹ Federal Bureau of Investigation, “Uniform Crime Report: Crime in the United States, 2006,” September 2007, <http://www.fbi.gov/ucr/cius2006/documents/murdermain.pdf>.

⁶⁰ Federal Bureau of Investigation, “Uniform Crime Reporting Handbook,” 2004, <http://www.fbi.gov/ucr/handbook/ucrhandbook04.pdf>, 21.

⁶¹ Violence data for 1980-2007 from United States Department of Justice Bureau of Justice Statistics, <http://bjsdata.ojp.usdoj.gov/dataonline/Search/Crime/Local/JurisbyJuris.cfm>. Violence data for 2008 from Salinas Police Department Crime Reports. Population data from California Department of Finance Web site, <http://www.dof.ca.gov/>.

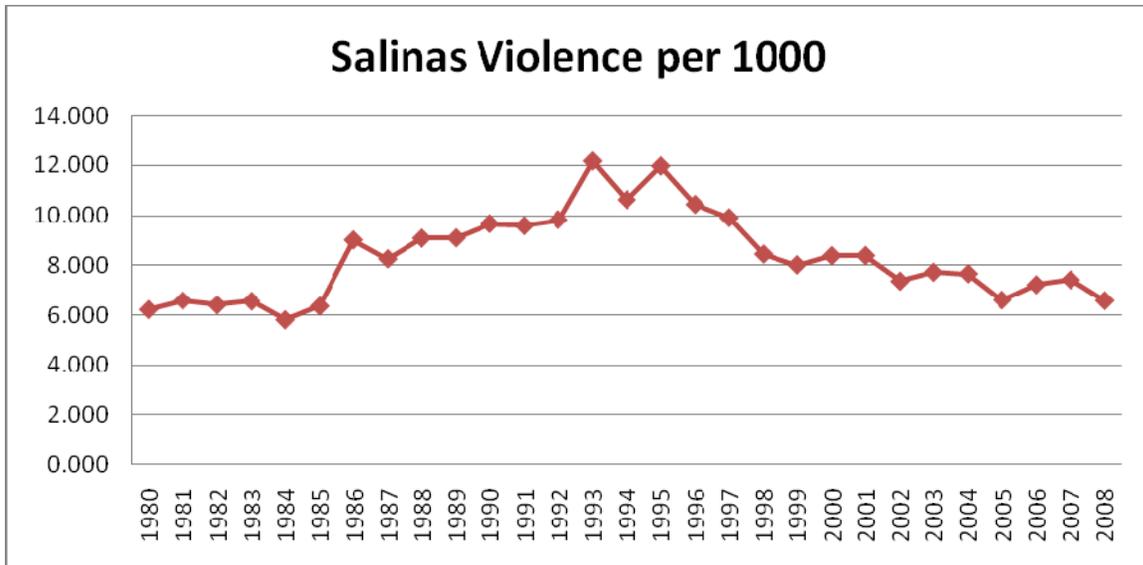


Figure 4. Salinas Violence Rate Per Capita (1:1,000)⁶²

2. Independent Variables

In order to determine specific environmental factors that affect violence in Salinas, the authors postulate nine broad categories (independent variables, or IVs) for analysis. These IVs include: Economy; Population; Housing Density; Education; Police Force; Prison Influence; Gang Rivalry; Social Service Programs; and Community Involvement. Each IV is further broken down into smaller sub-categories (indicators) for analysis. For example, the indicators for the economy IV include Salinas' spending budget, retail sales, unemployment rate, and average income level, among others. There are several hypotheses on how each IV affects violence, listed in the next section. Each variable was normalized to a per capita rate of 1:1,000 in order to show consistency over time and compare to the per capita violence rate. Monetary rates were not normalized against inflation due to a lack of data and time.

3. Statistical Analysis

After determining the large cross-section of possible environmental factors, the authors collected data for as many IVs as possible. For the IVs and indicators with

⁶² Data from Figure 3 converted into a per capita violence rate of 1:1,000.

numerical data, the statistics were compared to the violence rate to determine correlations. Unfortunately, numerical statistics were not available for each indicator, or even overall IVs, in some cases. For these indicators and IVs, the factors are discussed but no statistical analysis is offered.

Four tests were conducted to determine the validity of each hypothesis. The first test graphically compared each indicator against violence in a year-by-year graphic line comparison, but the variables were not correlated. These graphs show trends over the years, and if the indicators and violence moved together or in opposition to each other.

The second test compared the change (delta) of each indicator from one year to the next with the change in the violence rate in the same time frame. The deltas were calculated for each year of available data, then plotted against each other on an X-Y scatterplot. For example, for the hypothesis, "If the unemployment rate increases, violence increases," one would expect to see most of the scatterplot points in the negative-negative or positive-positive quadrants. This would indicate that when the unemployment rate increases or decreases, violence respectively increases or decreases. A preponderance of points in either of the positive-negative quadrants would serve to disprove the hypothesis because the unemployment and violence rates are moving in opposition to each other. All scatterplots are displayed in Appendix A.

The third test involved running a linear regression between each indicator and violence to determine the correlation coefficient. The correlation coefficient showed whether the relationship between the indicator and violence was positive or negative, and also if the relationship was negligible, weak, or strong. In a positive relationship, if the indicator increases or decreases, violence respectively increases or decreases. In a negative relationship, if the indicator increases or decreases, violence respectively decreases or increases. Correlation coefficients measure the degree to which two variables are linearly related and vary between -1 and +1. A value of 1 indicates a perfect linear relationship, and the positive or negative symbol indicates if the correlation is

positive or negative. A value of 0 indicates there is no linear relationship between the variables.⁶³ All correlation coefficients are listed in Appendix C, Table 3.

The fourth and final test involved conducting a time-series regression. This process had two steps. The first step determined if any indicators within each IV were correlated with each other. Positive coefficients are interpreted as contributing factors to the level of violence. Negative coefficients are interpreted as a deterrent to the level of violence. If any of the indicators within an IV were correlated, then only one of these indicators was used to represent the entire IV. If none of the indicators were correlated, then each indicator was compared separately against violence. For instance, the economic IV compared the indicators of unemployment, city budget, and retail sales. The city budget and retail sales were highly correlated. This allowed the use of the Salinas city budget to represent the economic IV. However, unemployment was not correlated therefore it was separated into another category.

The second step of the time-series regression involved conducting a Durbin-Watson static time-series analysis of all the data for each represented IV against violence. The basic goal of the static model was to identify whether or not the IVs were deterring or attributing to the level of violence. The Durbin-Watson statistic analysis detected potential serial correlation within the IVs. Then, to minimize any inferential problems stemming from the serial correlation, a Cochrane-Orcutt dynamic model was used. In both models a negative coefficient indicates that violence is being deterred. A second number, the P-Value, indicates if the variable will show the same affect over time. P-Values less than .05 indicate that the observed results are consistent over time and cannot be attributed to mere chance.⁶⁴ The coefficients, P-Values, and Durbin-Watson statistics are listed in Appendix B, Table 2.

These tests helped determine the validity of each hypothesis. In order to determine whether each hypothesis was confirmed, refuted or inconclusive, the authors

⁶³ Valerie J. Easton and John H. McColl, "Statistics Glossary: Paired Data, Correlation, & Regression," http://www.stats.gla.ac.uk/steps/glossary/paired_data.html#corrcoeff.

⁶⁴ See Appendix B for further information and definitions regarding the time-series regression, and Durbin-Watson and Cochrane-Orcutt models and analysis.

used the following correlation scale: if the data showed 0 to 35 percent correlation by either the indicator delta test or the linear regression, the hypothesis was determined false, or refuted; if the data was 36 to 65 percent correlated, the hypothesis determined as inconclusive, as the data was too random to accurately determine the casual effects of violence and the tested indicator and/or IV; if the data was higher than 66 percent correlated, then the hypothesis was determined confirmed. The time-series regression results also backed up the confirmation, inconclusiveness, or refutation of each hypothesis.

E. HYPOTHESES

All of the proposed hypotheses for this study are listed below. All variables, including violence, refer to per capita rates. The hypotheses will be further discussed and analyzed in Section II.

1. Economy

Hypothesis 1a: If the spending budget of Salinas decreases, violence increases.

Hypothesis 1b: If retail sales decrease, violence increases.

Hypothesis 1c: If the unemployment rate increases, violence increases.

Hypothesis 1d: If the agricultural industry decreases, violence increases.

Hypothesis 1e: If the percentage of people below the poverty line increases, violence increases.

Hypothesis 1f: If average income decreases, violence increases.

Hypothesis 1g: If the cost of living index increases, violence increases.

2. Population

Hypothesis 2a: If the percentage of single parents increases, especially single mothers, violence increases.

Hypothesis 2b: If there is a higher population of males versus females, violence increases.

Hypothesis 2c: If the majority of the population is 29 and under, violence increases.

3. Housing

Hypothesis 3a: If the housing market increases, violence increases.

Hypothesis 3b: If the average number of persons per household increases, violence increases.

Hypothesis 3c: If the amount of vacant units increases, violence increases.

Hypothesis 3d: If housing units per capita decreases, violence increases.

4. Education

Hypothesis 4a: If the dropout rate increases, violence increases.

Hypothesis 4b: If the graduation rate decreases, violence increases.

Hypothesis 4c: If the average daily attendance decreases, violence increases.

Hypothesis 4d: If the school budget per student decreases, violence increases.

Hypothesis 4e: If education levels decrease, violence increases.

Hypothesis 4f: If the amount of school programs offered decreases, violence increases.

5. Police Force

Hypothesis 5a: If the Salinas PD budget decreases, violence increases.

Hypothesis 5b: If the number of Salinas PD employees decreases, violence increases.

Hypothesis 5c: If the number of Salinas PD active patrols decreases, violence increases.

6. Gang Rivalry

Hypothesis 6a: If the number of rival gangs increases, violence increases.

Hypothesis 6b: If the number of gang cliques increases, violence increases.

7. Prison

Hypothesis 7a: If prison rehabilitation programs decrease, violence increases.

Hypothesis 7b: If the prison recidivism rate increases, violence increases.

8. Social Service Programs

Hypothesis 8a: If social welfare decreases, violence increases.

Hypothesis 8b: If the number of social workers decreases, violence increases.

Hypothesis 8c: If the number of non-school programs decreases, violence increases.

9. Community Involvement

Hypothesis 9a: If the number of neighborhood watch programs decreases, violence increases.

Hypothesis 9b: If the number of Priority One police calls decreases, violence increases.

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II. DATA ANALYSIS

The data and analysis presented in this thesis are specific to Salinas, California. Therefore, the conclusions about the affects of environmental factors on violence are also specific to Salinas. Analyzing another community under the same conditions may result in different findings.

A. ECONOMY

Economy is defined as “the management of the resources of a community.”⁶⁵ There are several areas that affect the economy, but for the purpose of this analysis the indicators for this IV are: the spending budget of the city of Salinas; retail sales; the unemployment rate; the agricultural industry; poverty; average income; and the cost of living. Data was only available for the spending budget, retail sales, and the unemployment rate. The other indicators are discussed but no statistical analysis is offered.

Hypothesis 1a: If the spending budget of Salinas decreases, violence increases. The justification behind this hypothesis is that without adequate city funding, appropriate measures to instill peace will be eliminated. This includes not only law enforcement, but also other agencies that give back to the community and help keep the city a clean and safe environment, such as fire departments, parks and recreation, library services, and the department of public works. The numbers used are the actual spending budgets of Salinas per capita.

The result of this hypothesis is inconclusive. When looking at the indicator deltas, there is a 42 percent opposition between the city budget and violence.⁶⁶ This means 42 percent of the time if the budget decreased or increased, violence respectively increased or decreased. Figure 5 shows a 25-year comparison of violence and the Salinas

⁶⁵ Dictionary.com, “Economy,” <http://dictionary.reference.com/browse/economy>.

⁶⁶ See Appendix A, Figure 24.

budget. When utilizing the time-series regression, the results are also inconclusive. The deterrence level of the coefficient is positive, but essentially at zero, and the P-value is .053, indicating inaccuracy over time.⁶⁷

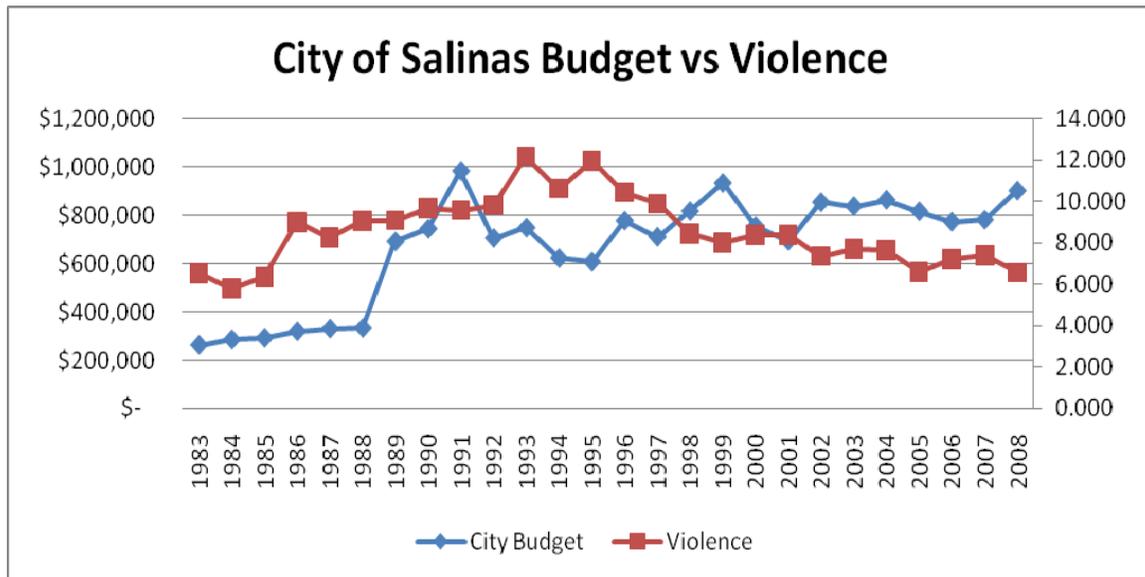


Figure 5. Salinas Budget vs. Violence Rate⁶⁸

Hypothesis 1b: If retail sales decrease, violence increases. Retail sales can be both a cause of violence and an indicator of violence. As a cause of violence, a decline in retail sales could be the result of a downturn in the overall economy. If people do not have the means for basic life needs, they could resort to violence for survival. Lower retail sales may also be an indicator of violence, because when a city is violent, people may be more likely to avoid that city for safety reasons. A decline in retail sales could indicate that patrons do not feel safe shopping in Salinas, even if the economy is healthy.

The result of this hypothesis is inconclusive. When looking at the indicator deltas, there is a 37 percent opposition between Salinas’ retail sales and violence rate.⁶⁹ This means 37 percent of the time if the retail sales increased or decreased, violence

⁶⁷ See Appendix B, Table 2.

⁶⁸ Salinas budget data from the Salinas Department of Finance annual reports.

⁶⁹ See Appendix A, Figure 25.

respectively decreased or increased. Figure 6 shows a 27-year comparison of violence and the city's retail sales. Running a linear regression confirms that retail sales and violence move in opposition to each other, but the $-.204$ correlation coefficient is weak.⁷⁰



Figure 6. Retail Sales vs. Violence Rate⁷¹

Hypothesis 1c: If the unemployment rate increases, violence increases. The justification behind this hypothesis is if unemployment is high, the perceived opportunity costs of engaging in illegal activity are lower. In a 2001 study that controlled for demographic and economic variables, researchers found that unemployment had a strong correlation with property crime rates. However, for violent crime, unemployment exhibited a weak positive correlation with robbery and assault, but a negative correlation with homicides and rapes.⁷²

⁷⁰ See Appendix C, Table 3.

⁷¹ Retail sales data from the Salinas Department of Finance annual reports.

⁷² Steven Raphael and Rudolph Winter-Ebmer, "Identifying the Effect of Unemployment on Crime," *Journal of Law and Economics* 44 (2001): 261. <http://www.jstor.org/stable/pdfplus/725653.pdf>.

This hypothesis is confirmed. When looking at the indicator deltas, there is a 67 percent similarity between the unemployment rate in Salinas and violence.⁷³ This means 67 percent of the time, if the unemployment rate increased or decreased, violence respectively increased or decreased. Figure 7 shows a 17-year comparison of violence and the city’s unemployment rate. When utilizing the time-series regression, the data also shows a confirmed hypothesis. The coefficient is positive and the P-value is .012, indicating accuracy over time.⁷⁴

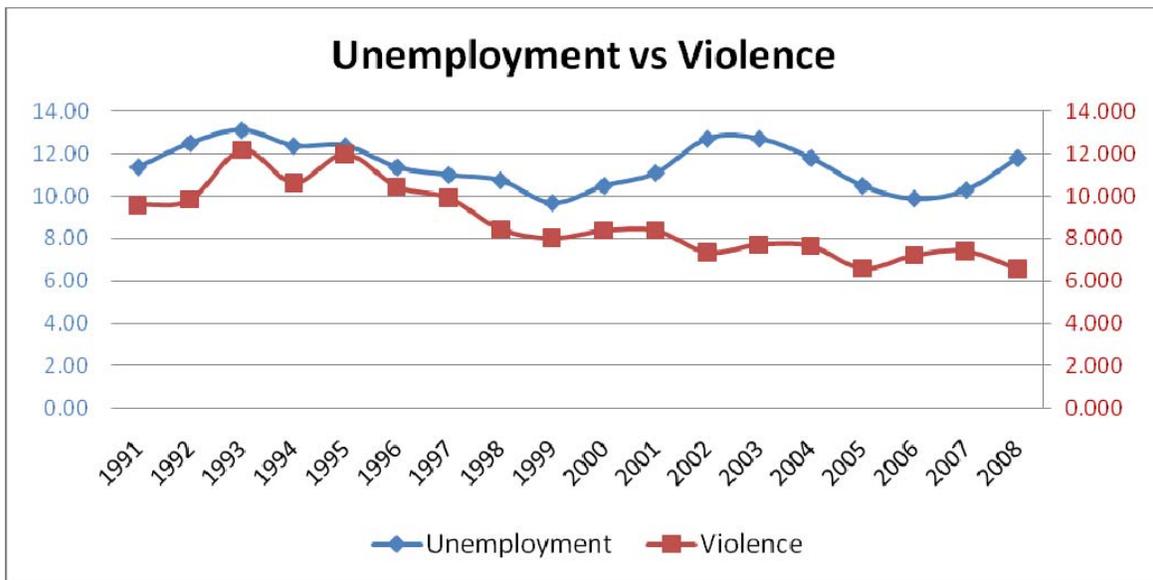


Figure 7. Unemployment Rate vs. Violence Rate⁷⁵

Although the overall focus of this thesis is on violence per capita, it is relevant to test if the unemployment rate also affects the number of homicides in Salinas. When looking at the indicator deltas, there is a 72 percent similarity between the unemployment and homicide rates.⁷⁶ This means 72 percent of the time if the unemployment rate increased or decreased, homicides respectively increased or decreased. Figure 8 shows

⁷³ See Appendix A, Figure 26.

⁷⁴ See Appendix B, Table 2.

⁷⁵ Unemployment rate data retrieved from <http://www.economagic.com/em-cgi/data.exe/blsla/lauMT06415003>.

⁷⁶ See Appendix A, Figure 27.

an 18-year comparison of homicide and unemployment. Running a linear regression, the correlation coefficient for the homicide and unemployment rates is .559.⁷⁷

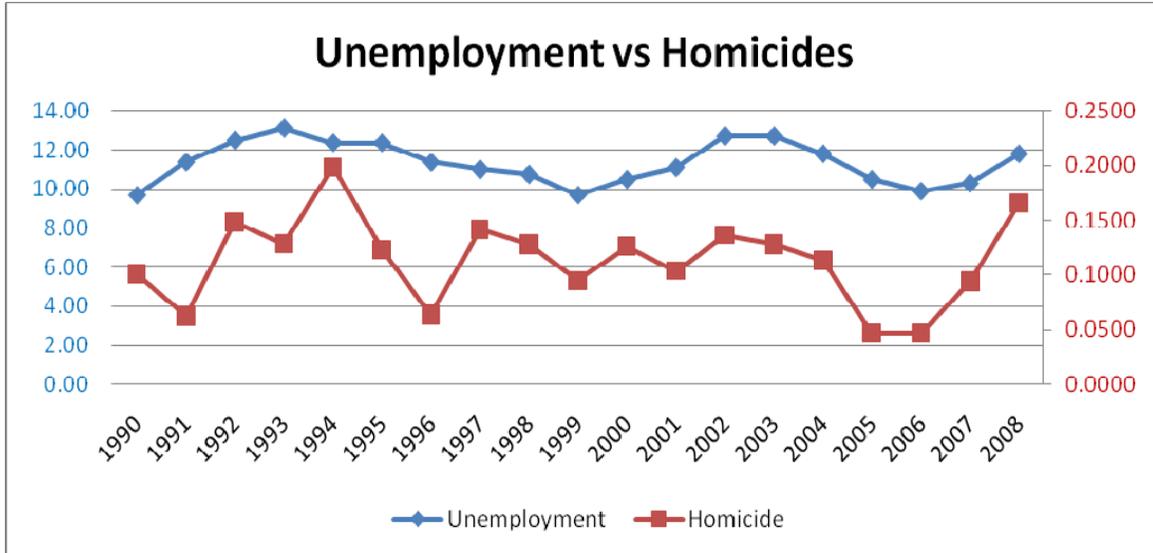


Figure 8. Unemployment Rate vs. Homicide Rate⁷⁸

Other areas of the economy that may impact violence in Salinas are the agricultural industry; the percentage of the population living under the poverty line; average household income; and the cost of living index. However, the data was either insufficient or nonexistent to adequately confirm or deny these hypotheses.

Hypothesis 1d: *If the agricultural industry decreases, violence increases.* The justification behind this hypothesis is if the agricultural industry decreases, it will require fewer workers to harvest crops. The agricultural industry is one of the largest employers in Salinas and affects a significant portion of the local population and economy. A decrease in the agricultural industry could translate to a higher unemployment rate and lower average household income for Salinas.

Crop reports were available for Monterey County, but they did not delineate Salinas' contributions each year. Although the authors could analyze the county as a

⁷⁷ See Appendix C, Table 3.

whole with respect to the crop reports and county violence rate, the results would not be specific to Salinas. Therefore this hypothesis is inconclusive until agricultural figures are available solely for Salinas.

Hypothesis 1e: If the percentage of people below the poverty line increases, violence increases. Hypothesis 1f: If average income decreases, violence increases. Hypothesis 1g: If the cost of living index increases, violence increases. The justifications for Hypotheses 1e, 1f, and 1g are similar. “There is a growing consensus that resource deprivation in general is an underlying cause of violent crime and that resource deprivation is especially associated with assault and homicide.”⁷⁹ If people do not have the monetary means for basic survival needs, the perceived opportunity costs of engaging in illegal activity are lower.

The only data found for Hypotheses 1e and 1f were from the United States Census Reports from 1980, 1990, and 2000. Three data sets do not provide enough information to accurately analyze trends or correlations. The only data found for Hypothesis 1g showed Salinas had a cost of living index of 115 percent in 2008.⁸⁰ Because the datasets for these hypotheses are too small for meaningful statistical analysis, these hypotheses are inconclusive.

Based on the data the authors were able to obtain, the unemployment rate is the only indicator in the Economy IV that shows a measurable affect on violence. There are several other areas open for further study if the data becomes available, but as of this writing Salinas should focus on lowering the unemployment rate to help lower overall violence rates.

⁷⁸ Unemployment rate data retrieved from <http://www.economagic.com/em-cgi/data.exe/blsla/lauMT06415003>.

⁷⁹ Ching-Chi Hsieh and M.D. Pugh, “Poverty, Income Inequality, and Violent Crime: A Meta-Analysis of Recent Aggregate Data Studies,” *Criminal Justice Review* 18 (1993): 182, <http://cjr.sagepub.com/cgi/reprint/18/2/182>.

⁸⁰ City-Data.com, “Salinas, California,” <http://www.city-data.com/city/Salinas-California.html>. 2008 Salinas Cost of Living Index: 115.5.

B. POPULATION

Population refers to the number of individuals living in a given geographical space. For the purpose of this study, the geographical space is the city of Salinas. As a primarily agricultural community, Salinas is made up of legal residents, migrant workers, and illegal immigrants. However, it is difficult to ascertain the extent of migrant workers and illegal immigrants living in Salinas. Also, as stated earlier, the census report is only published every ten years. Therefore, the residential data reported to the California Department of Finance was used to account for the population of Salinas in the intervening years. The population in this study was normalized at a ratio of 1:1,000. This allowed comparison of Salinas to other cities and states, and to the different data sets.

In an environment where social factors do not affect outcomes, every variable should change at a rate proportional to population changes. In other words, as the population grows, violence should grow at a rate equal to the rate of population growth, creating a constant violence per capita rate. However, this is not the case. As evidenced in Figure 3, the population and violence in Salinas have not changed in accordance with each other. This is further exemplified in Figure 4, which would be a straight line if the population and violence changed proportionally.

When looking at the raw population and raw violence in Salinas, there is a 68 percent similarity between the Salinas population and violence.⁸¹ This means 68 percent of the time when the population increased or decreased, violence respectively increased or decreased. Comparing raw population and raw violence utilizing the time-series regression, the coefficient is positive and the P-value is .001, showing accuracy over time.⁸² Breaking the timeframe into two distinct segments and running linear regressions, from 1980 to 1994 the correlation coefficient for the population and violence is .883, but from 1995 to 2008 it is -.927.⁸³ This is due to the fact that from 1980 to 1994

⁸¹ See Appendix A, Figure 28.

⁸² See Appendix B, Table 2.

⁸³ See Appendix C, Table 3.

violence increased as the population increased, and then from 1995 to 2008 violence decreased even though the population continued to increase (see Figure 3). The overall correlation coefficient from 1980 to 2008 is -.012, indicating a negligible negative relationship between the population and violence during that timeframe.⁸⁴

There are three areas within the population that may impact violence: the number of single parents; the ratio of males to females; and the percentage of the population under age 29. However, the only data found for these indicators are from the United States Census Reports from 1980, 1990, and 2000. Three data sets do not provide enough information to accurately analyze trends or correlations, but the justifications for these hypotheses are detailed below.

Hypothesis 2a: If the percentage of single parents increases, especially single mothers, violence increases. The justification for this hypothesis is from research which finds positive correlations between single-parent homes and youth delinquency. “Adolescents living in ecological contexts characterized by more one-parent families show more delinquent behavior than adolescents living in ecological contexts in which there are fewer one-parent families.”⁸⁵

Although the three datasets in the 1980, 1990, and 2000 Census Reports do not provide a robust enough sample for analysis, a proxy comparison shows support for this hypothesis. Figure 9 depicts the census tracts in Salinas with respect to the number of shootings and the percentage of single-mother households. Each point on Figure 10 represents the number of shootings from January 2008 to August 2009 correlated with the percentage of female-headed households for each census tract. Referencing the trendline, a positive relationship exists between the indicators: the census tracts with a higher percentage of female head of households had a higher number of shootings.⁸⁶

⁸⁴ See Appendix C, Table 3.

⁸⁵ Gijs Weijters, Peer Scheepers, and Jan Gerris, “City and/or Neighbourhood Determinants? Studying Contextual Effects on Youth Delinquency,” *European Journal of Criminology* 6 (2009): 451, <http://euc.sagepub.com>.

⁸⁶ Trendline equation: $y = 2.1146x - 12.976$.

Although the trendline for Figure 9 exhibits a positive relationship, it is important to note that the data only covers 20 months. Analyzing the same data over a period of years or even decades could significantly alter the results. Additionally, the data for the female head of households came from the 2000 Census Report, which may not be valid for 2008 and 2009. Finally, single-parent households can be representative of other environmental and social factors that affect violence levels, such as economic status, unemployment, and the high school drop-out rate. It may not be sufficient to look at single-parent households in a vacuum without considering other socio-economic factors that are typically associated with these households.

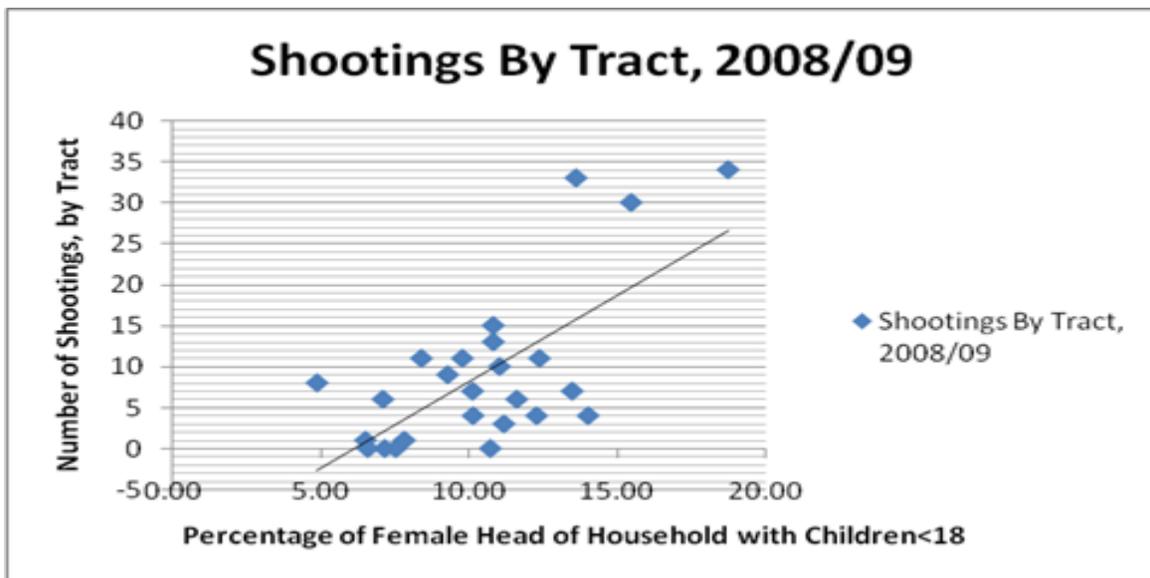


Figure 9. Shootings and Single-Mother Households by Census Tract in Salinas⁸⁷

Hypothesis 2b: If there is a higher population of males versus females, violence increases. The justification for this hypothesis is based on research which indicates that males commit more violent offenses than females during adolescence and into adulthood. One study showed that at age 12, violent offenses committed by males outnumbered those committed by females at a rate of 2:1. By age 18 this ratio increased to 3:1, and by

⁸⁷ Chart created October 23, 2009 by NPS Department of Defense Analysis Research Assistant Rebecca Lorentz using Salinas Police Department Crime Reports and the U.S. Census Bureau's 2000 Census data. Ms. Lorentz gave express approval to the authors to reproduce her chart in this thesis.

age 21, the ratio increased again to 4:1.⁸⁸ For further research on this hypothesis, a potential proxy comparison could include the gender comparison in Salinas' primary and secondary schools. Although not inclusive of the entire population of Salinas, a comparison of the percentage of school-age males to violence could determine if there is at least a partial correlation between the two variables.

Hypothesis 2d: If the majority of the population is 29 and under, violence increases. Similar to the previous population-related hypotheses, the justification for this hypothesis is research-based:

The successful transition into adult roles (work, marriage, parenting) appears to reduce involvement in violent behavior. In one national study, nearly 80 percent of adolescents who were serious violent offenders reported no serious violent offenses during their adult years (to age 30).⁸⁹

The California Department of Finance Web site contains breakdowns of age and race demographics by county for the years 1970 to 2007, but the statistics are not further broken down by city.⁹⁰ A proxy comparison could be used for the whole of Monterey County, but the results would not be specific to Salinas.

The Population IV requires further research when datasets become available to determine if the indicators listed here affect violence levels in Salinas.

C. HOUSING

Adequate housing is one of life's basic needs and provides much more than mere shelter:

Housing fulfills physical needs by providing security and shelter from weather and climate. It fulfills psychological needs by providing a sense of personal space and privacy. It fulfills social needs by providing a

⁸⁸ Delbert S. Elliott, "Serious Violent Offenders: Onset, Developmental Course, and Termination," *Criminology* 32 (1994), <http://www.proquest.com/>.

⁸⁹ Delbert S. Elliott, "Youth Violence: An Overview," March 1994, 6. <http://www.colorado.edu/cspv/publications/papers/CSPV-008.pdf>.

⁹⁰ California Dept. of Finance, <http://www.dof.ca.gov/research/demographic/data/>.

gathering area and communal space for the human family, the basic unit of society. In many societies, it also fulfills economic needs by functioning as a center for commercial production.⁹¹

To study this independent variable, the indicators include the value of the housing market, the average persons per household, the number of vacant housing units, and the number of housing units per capita. The vacant housing units and the occupied housing units are represented using a per capita rate of 1:1,000 residents.

Hypothesis 3a: If the housing market increases, violence increases. The justification for this hypothesis is that if the average home or rental price increases at a rate faster than income levels, low- and even middle-income populations could be completely priced out of the market. Although higher home prices and rents are usually associated with periods of economic expansion, they are not necessarily positive indicators for society if incomes and wages do not increase as well. This was the case in Salinas in the 2000s.

As previously mentioned, the economic boom in the late 1990s and mid-2000s led to skyrocketing home prices in California, including Salinas. The median home price in Salinas in 2000 was \$245,377; by 2007 this figure soared to \$531,170.⁹² In the same time frame, the median household income in Salinas went from \$43,720 to \$52,560.⁹³ Therefore, the median home price increased 216 percent, but the median household income only increased 20 percent. Many families were priced out of the housing market and either had to rent inadequate spaces or share quarters with other families instead. Similar to the previous arguments regarding the economy, if people are unable to afford the basic needs of life, such as housing, they may be more likely to resort to violence.

This hypothesis is refuted, with respect to the relationship between the housing market and violence. When looking at the indicator deltas, there is a 44 percent

⁹¹ Human Rights Education Associates, "The Right to Housing," http://www.hrea.org/index.php?base_id=149.

⁹² Monterey County Association of Realtors, "Monterey County Stats," <http://www.mcar.com/HomesearchConsumerinfo.html>.

⁹³ City-Data.com, "Salinas, California," <http://www.city-data.com/city/Salinas-California.html>.

similarity between the Salinas housing market and violence.⁹⁴ This means 44 percent of the time when the Salinas housing market increased or decreased, violence respectively increased or decreased. Figure 10 shows a 10-year comparison of violence and the Salinas housing market. When running a linear regression, the correlation coefficient of the Salinas housing market and violence is $-.567$.⁹⁵ This indicates that the housing market moves in opposition to violence, which refutes the hypothesis. However, there is not enough correlation from either the indicator deltas or the linear regression to confirm that the housing market itself affects violence.

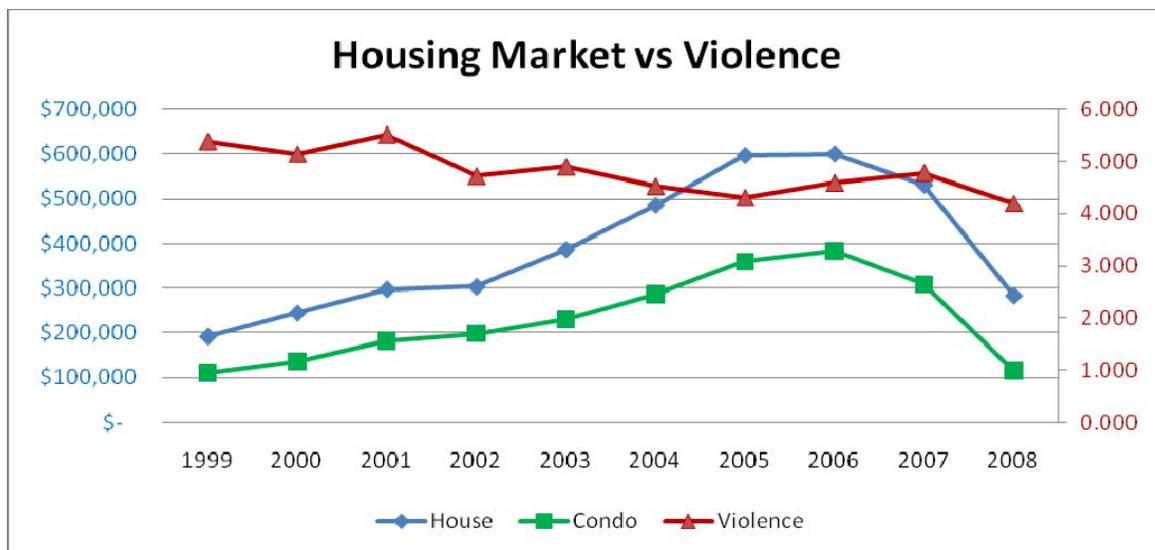


Figure 10. Average Housing Prices vs. Violence Rate⁹⁶

To further analyze this hypothesis, the housing market was also compared to homicides. This resulted in a stronger correlation, with a 78 percent opposition between the housing market and homicides rates.⁹⁷ Therefore, 78 percent of the time when the housing market increased or decreased, homicides respectively decreased or increased. Figure 11 shows a 10-year comparison of homicides and the Salinas housing market.

⁹⁴ See Appendix A, Figure 29.

⁹⁵ See Appendix C, Table 3.

⁹⁶ Average housing price data from Monterey County Association of Realtors, <http://www.mcar.com/HomesearchConsumerinfo.html>.

⁹⁷ See Appendix A, Figure 30.

When running a linear regression, the correlation coefficient for homicides and the Salinas housing market is $-.692$.⁹⁸ This indicates that the housing market also moves in opposition with homicides, which further refutes the positive relationship postulated for the housing market and violence.

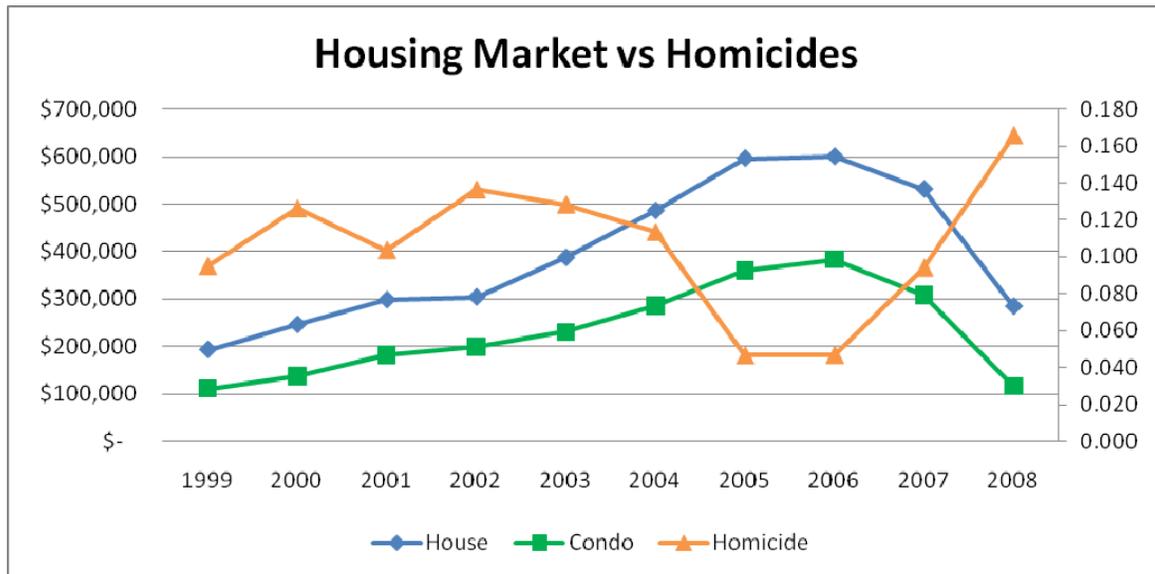


Figure 11. Average Housing Prices vs. Homicide Rate⁹⁹

Hypothesis 3b: *If the average number of persons per household increases, violence increases.* There are arguments that too many people in a single housing unit results in violence due to a lack of individual attention, which causes people to seek attention and mentorship elsewhere. This outside attention could involve criminal activity to impress peers or earn acceptance into a gang. There are also arguments that more people in a single housing unit results in less violence, due to family involvement and a fear of disappointing the family.¹⁰⁰ The authors believe that the former is true for

⁹⁸ See Appendix C, Table 3.

⁹⁹ Average housing price data from Monterey County Association of Realtors, <http://www.mcar.com/HomeSearchConsumerInfo.html>.

¹⁰⁰ Doug McAdam, "Beyond Structural Analysis: Toward a More Dynamic Understanding of Social Movements," in *Social Movements and Networks: Rational Approaches to Collective Action*, edited by Mario Diani and Doug McAdam (New York: Oxford University Press Inc., 2003), 282–283.

Salinas because of its high population turnover rates and ethnic diversity.¹⁰¹ Salinas is an agricultural community with a large migrant population during the growing and harvesting seasons. While the adults are working in the fields, the children are often left unsupervised. Although a majority of Salinas is Hispanic, there are tensions between the settled Mexican-Americans and the migrants. Migrant children are often labeled as Sureños and subsequently targeted by Norteños.¹⁰²

However, the data shows the positive correlation hypothesis is refuted, and a negative correlation hypothesis is confirmed. When looking at the indicator deltas, there is only a 33 percent similarity between the average persons per household (APPH) and violence.¹⁰³ This means 33 percent of the time if the APPH increased or decreased, violence respectively increased or decreased. Conversely, 67 percent of the time if the APPH increased or decreased, violence respectively decreased or increased. Figure 12 shows an 18-year comparison of violence and APPH. Running a linear regression also indicates that the positive correlation APPH hypothesis is false and the negative correlation APPH is confirmed. The correlation coefficient is -.813, indicating that when APPH increases, violence decreases.¹⁰⁴ The overall takeaway is that the average persons per household moves in opposition to and affects violence in Salinas.

¹⁰¹ D. Wayne Osgood and Jeff M. Chambers, "Community Correlates of Rural Youth Violence," *OJJDP: Juvenile Justice Bulletin*, May 2003, <http://www.ncjrs.gov/html/ojjdp/193591/contents.html>.

¹⁰² Stahl, "Saving Salinas."

¹⁰³ See Appendix A, Figure 31.

¹⁰⁴ See Appendix C, Table 3.

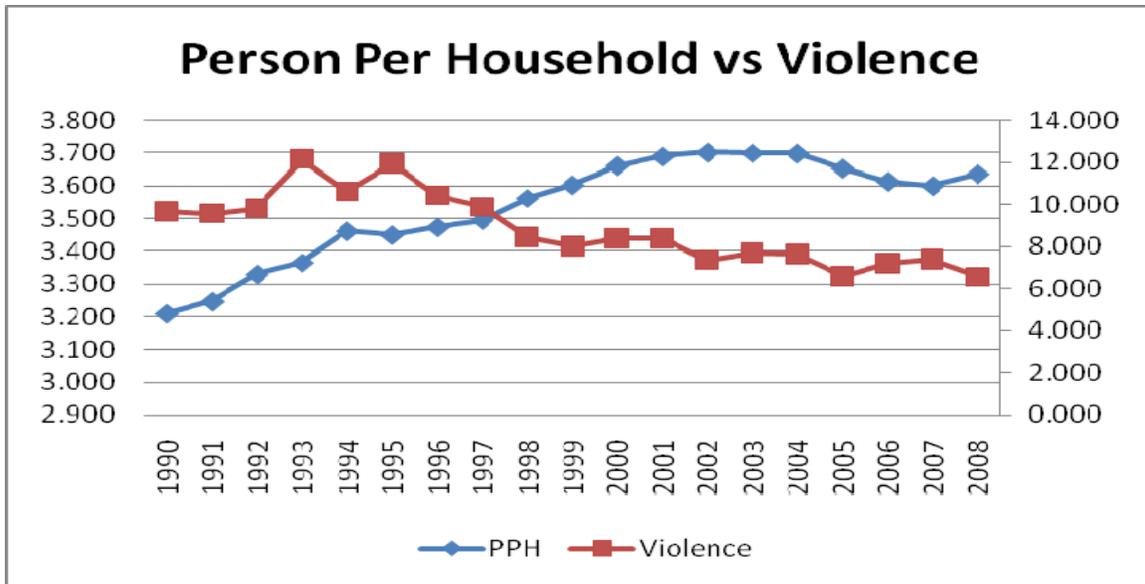


Figure 12. Average Persons Per Household vs. Violence Rate¹⁰⁵

Hypothesis 3c: If the amount of vacant units increases, violence increases. The justification for this hypothesis is that vacant units provide convenient and accessible locations for criminals to meet, plan operations, and conduct business. A study in Austin, Texas found that the crime rates on blocks with vacant buildings were twice as high as blocks without vacant buildings.¹⁰⁶

This hypothesis is confirmed. When looking at the indicator deltas, there is a 67 percent similarity between the amount of vacant units and violence.¹⁰⁷ This means 67 percent of the time when the amount of vacant units in Salinas increased or decreased, violence respectively increased or decreased. Figure 13 shows a 19-year comparison of violence and vacant units per 1,000 residents. Running a linear regression also confirms that vacant units are a key environmental factor in violence, with a correlation coefficient of .791.¹⁰⁸

¹⁰⁵ Persons per household data from the California Department of Finance Web site, <http://www.dof.ca.gov/>.

¹⁰⁶ William Spelman, “Abandoned Buildings: Magnets for Crime?” *Journal of Criminal Justice* 21 (1993): 481.

¹⁰⁷ See Appendix A, Figure 32.

¹⁰⁸ See Appendix C, Table 3.

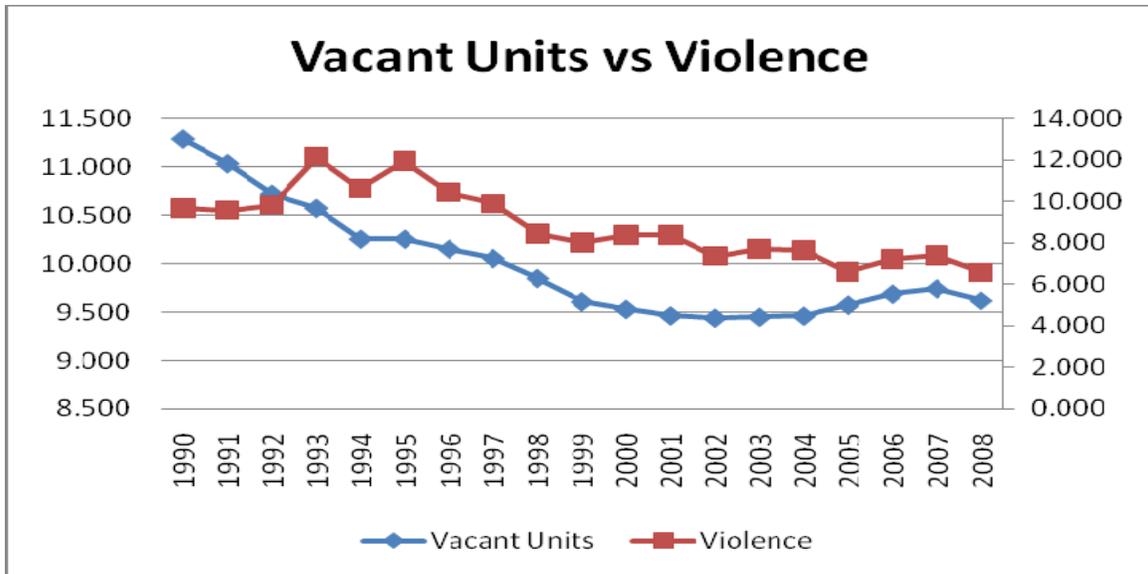


Figure 13. Vacant Housing Units vs. Violence Rate¹⁰⁹

Hypothesis 3d: If housing units per capita decreases, violence increases. When there are fewer housing units available and the population of a city continues to grow, the population becomes denser. Studies have shown that when a population is denser, violence increases.¹¹⁰ This is caused by higher interaction between individuals coupled with other socio-economic frustrations.

This hypothesis is confirmed with respect to housing units per capita affecting violence, but the relationship is actually positive, not negative as proposed. When looking at the indicator deltas, there is a 33 percent opposition rate between the number of housing units per capita and violence.¹¹¹ This means 33 percent of the time when the number of housing units per capita in Salinas increased or decreased, violence respectively decreased or increased. This also means that 67 percent of the time when housing units per capita increased or decreased, violence respectively increased or decreased, indicating a parallel relationship between housing units per capita and

¹⁰⁹ Vacant housing unit data from the California Department of Finance Web site, <http://www.dof.ca.gov/>.

¹¹⁰ Paul E. Joubert and Craig J. Forsyth, "A Macro View of Two Decades of Violence in America," *American Journal of Criminal Justice* XIII (1988): 12.

¹¹¹ See Appendix A, Figure 33.

violence. Figure 14 shows a 19-year comparison of violence and housing units per 1,000 residents. When utilizing the time-series regression, the data shows a positive coefficient and a P-value of .001, indicating that more housing units contributes to violence.¹¹² Running a linear regression also confirms that housing units and violence are in concert with each other with a .795 correlation coefficient.¹¹³

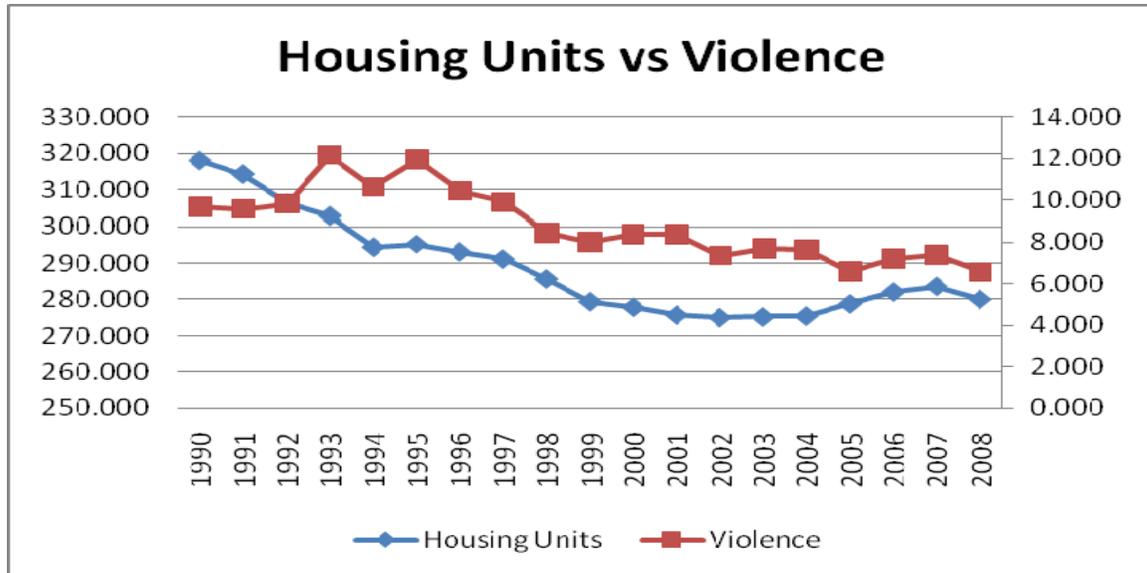


Figure 14. Housing Units vs. Violence¹¹⁴

For the Housing IV, the data for average persons per household, vacant units, and housing units shows that the denser per capita the city of Salinas is, the less violence occurs. One explanation for this is that families hold each other accountable for their actions. Households with a higher number of residents may need each other to survive. If one individual is taken out of the household, then the income and services provided by that individual is lost. The remaining family members or residents will have to either suffer the loss of income or services, or work harder to make up for the loss. Although less violence caused by denser populations and households may not happen in every

¹¹² See Appendix B, Table 2.

¹¹³ See Appendix C, Table 3.

¹¹⁴ Housing unit data from the California Department of Finance Web site, <http://www.dof.ca.gov/>.

community, it is exhibited in Salinas. Further research in this area could include analyzing the same variables either by census tract or by Salinas Police Department Area Commands.¹¹⁵

D. EDUCATION

Four areas were researched to determine the affects of education on violence in Salinas: dropout rates, graduation rates, average daily attendance (ADA), and school budgets. To simplify the budget, the amount of money that the school receives per student was used. A key note of importance is the difficulty in showing or projecting time lags, which ultimately affect the data results. A time lag in educational hypotheses refers to the amount of time it takes a student who drops out of school to commit a violent act or crime. The data presented in this thesis are on a year-to-year basis, but it is conceivable that a dropout will not commit a crime in the same calendar year as leaving school, if at all. Therefore, the results listed below could be skewed because it is nearly impossible to account for time lags in the data.

Salinas is broken down into four school districts that progress into the fifth school district, the Salinas Unified High School District (SUHSD). There are 30 elementary schools, six middle schools and five high schools. With the large number of schools and students the focus for this research was the SUHSD. One reason is the data retrieved to support the findings of the hypotheses came from the SUHSD, and the other reason is that violence is more likely to come from high school students as opposed to middle school or elementary school students. In June 2009, California's juvenile detention centers held 754 children between the ages of 15 and 18, but only 19 children aged 14 and under.¹¹⁶ Although not representative of the entire school-aged population in Salinas, using just the data from the SUHSD should suffice to analyze the hypotheses.

¹¹⁵ For Salinas Police Department Area Commands, see <http://www.ci.salinas.ca.us/maps/pdf/PoliceAreaCommand.pdf>.

¹¹⁶ California Department of Corrections And Rehabilitation Division of Juvenile Justice, "Population Overview as of June 30, 2009," http://www.cdcr.ca.gov/Reports_Research/docs/research/POPOVER-JUNE%202009.pdf.

The justification for Hypotheses 4a and 4b, which analyze the high school dropout rate and graduation rate, respectively, is based on the expectation that a high school diploma leads to increased earning opportunities and education.

There are many theoretical reasons to expect that education reduces crime. By raising earnings, education raises the opportunity cost of crime and the cost of time spent in prison. Education may also make individuals less impatient or more risk adverse, further reducing the propensity to commit crimes.¹¹⁷

In one study, researchers found that, “a 1-percent increase in the high school completion rate of all men ages 20-60 would save the United States as much as \$1.4 billion per year in reduced costs from crime incurred by victims and society at large.”¹¹⁸

Hypothesis 4a: If the dropout rate increases, violence increases. This hypothesis is confirmed. When looking at the indicator deltas, there is a 69 percent similarity between high school dropout rates and violence.¹¹⁹ This means 69 percent of the time when the dropout rate increased or decreased, violence respectively increased or decreased. Figure 15 shows a 17-year comparison of violence and the SUHSD dropout rate. When utilizing the time-series regression the data also shows a confirmed hypothesis. The coefficient is positive showing no deterrence to violence when there are higher dropout rates. Conversely, this indicates that when there are fewer dropouts, violence is deterred. However the P-value is .405, showing inaccuracy over time.¹²⁰ The takeaway is that lowering high school dropout rates should reduce the overall violence rate in Salinas.

¹¹⁷ Lance Lochner and Enrico Moretti, “The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports,” *The American Economic Review* 94 (March 2004): 183.

¹¹⁸ *Ibid.*, 183–184.

¹¹⁹ See Appendix A, Figure 34.

¹²⁰ See Appendix B, Table 2.

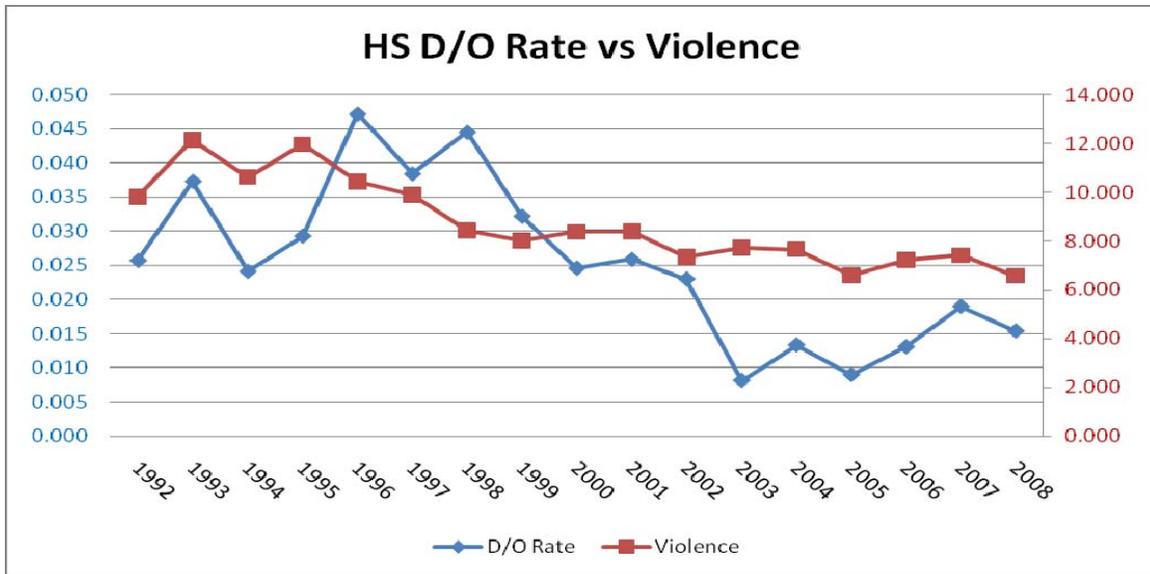


Figure 15. High School Dropout Rate vs. Violence Rate¹²¹

Hypothesis 4b: If the graduation rate decreases, violence increases. The result of this hypothesis is confirmed. When looking at the indicator deltas, there is a 63 percent opposition between high school graduation rates and violence.¹²² This means 63 percent of the time when the high school graduation rate increased or decreased, violence respectively decreased or increased. Figure 16 shows a 9-year comparison of violence and the SUHSD graduation rate. A linear regression shows a strong negative relationship between violence and the HS graduation rate with a correlation coefficient of $-.759$.¹²³

¹²¹ Data from the California Department of Education Dataquest Web site, <http://dq.cde.ca.gov/dataquest/>.

¹²² See Appendix A, Figure 35.

¹²³ See Appendix C, Table 3.

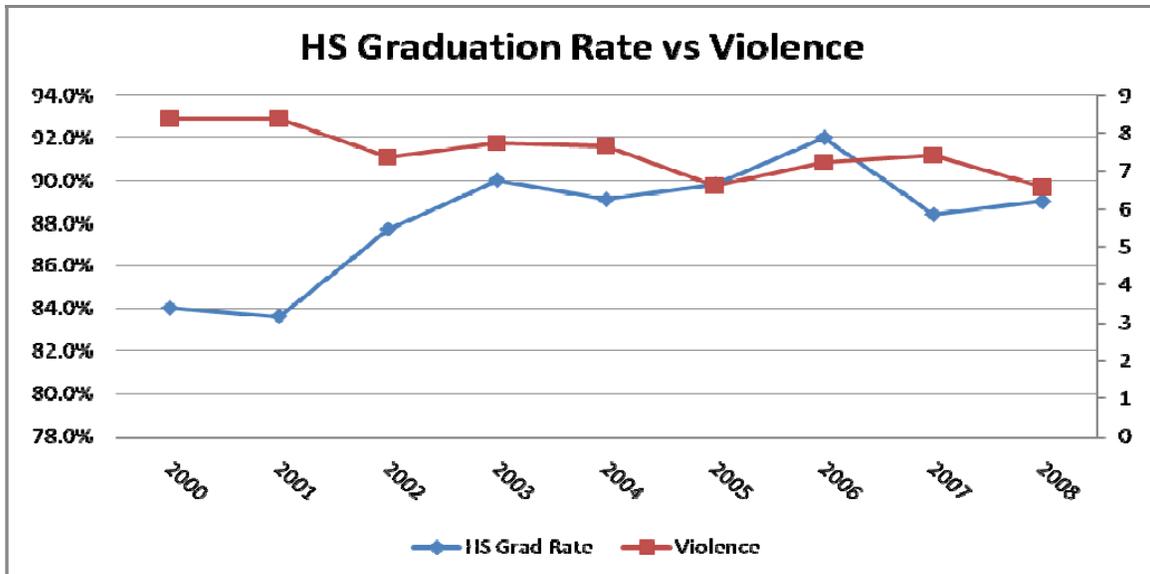


Figure 16. High School Graduation Rate vs. Violence Rate¹²⁴

Hypothesis 4c: If the average daily attendance decreases, violence increases.

The justification for this hypothesis is that outside of school, there is more opportunity for youths to participate in activities related to violence. In school, students are in a controlled environment under the watchful eyes of teachers, faculty, and peers; outside of school they are typically unsupervised and left to their own devices.

This hypothesis is confirmed. When looking at the indicator deltas, there is a 67 percent opposition between high school average daily attendance and violence.¹²⁵ This means 67 percent of the time when the high school ADA rate increased or decreased, violence respectively decreased or increased. Figure 17 shows a 16-year comparison of violence and the SUHSD ADA rate. A linear regression shows a negative relationship between violence and ADA with a -0.472 correlation coefficient.¹²⁶

¹²⁴ Data from the California Department of Education Dataquest Web site, <http://dq.cde.ca.gov/dataquest/>.

¹²⁵ See Appendix A, Figure 36.

¹²⁶ See Appendix C, Table 3.

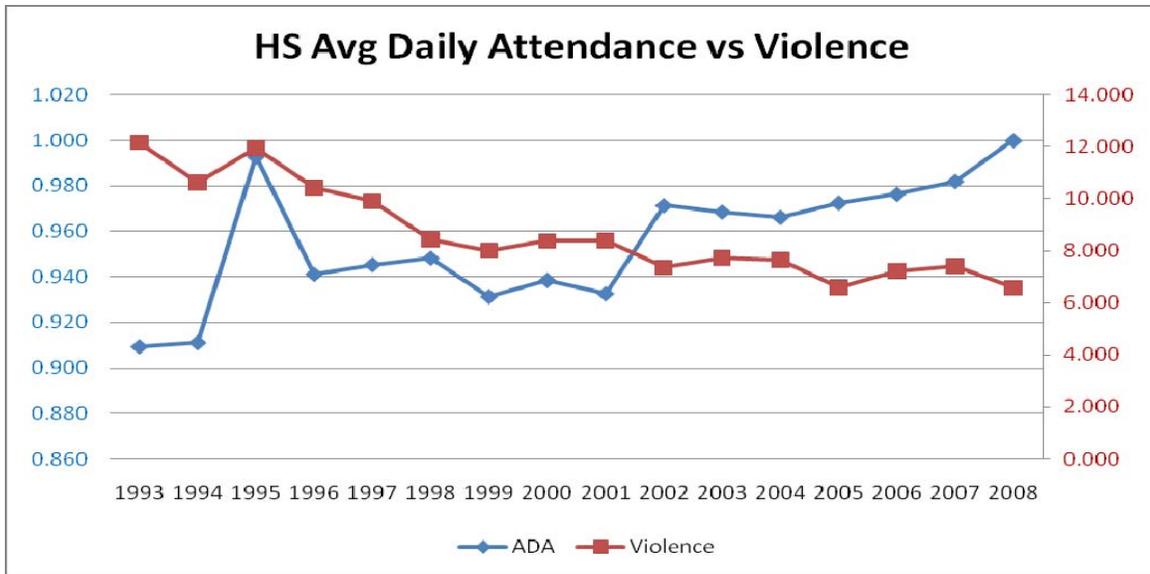


Figure 17. High School Average Daily Attendance Rate vs. Violence Rate¹²⁷

Hypothesis 4d: If the school budget per student decreases, violence increases.

The school budget in Salinas, similar to all school districts in California, is primarily based off the average daily attendance numbers. If the school is allocated \$1,000 per enrolled student, but only has an ADA of 90 percent, then the school will only get 90 percent, or \$900 per student. School districts lose millions of dollars a year when students do not show up for class. In 2008 the combined school districts that serve Salinas lost an estimated \$5.2 million dollars.¹²⁸ This money could be spent on additional teachers, educational programs, tutoring programs, gang intervention, and prevention programs. A small additional budget amount, approximately \$150 per student, is supplied by the California Lottery.¹²⁹

This hypothesis is confirmed. When looking at the indicator deltas, there is a 60 percent opposition between SUHSD budget and violence.¹³⁰ This means 60 percent of

¹²⁷ Data from the Education Data Partnership Web site, <http://www.ed-data.k12.ca.us/welcome.asp>.

¹²⁸ Ibid. Figure represents the difference between what the school district was allocated at the beginning of 2007 school year and what they actually received after the 2007-2008 school year completion, based on ADA.

¹²⁹ EdSource, “The Basics of California’s School Finance System,” January 2009, http://www.edsource.org/pub_QA_FinanceSyst06.html, 1.

¹³⁰ See Appendix A, Figure 37.

the time when money per student increased or decreased, violence respectively decreased or increased. Figure 18 shows a 16-year comparison of violence and the SUHSD amount per student. Although the indicator delta test is lower than the 67 percent threshold for confirmation, the linear regression correlation coefficient is a very strong $-.849$.¹³¹ With the combination of these two tests, the authors feel the results are robust enough to consider the hypothesis confirmed.

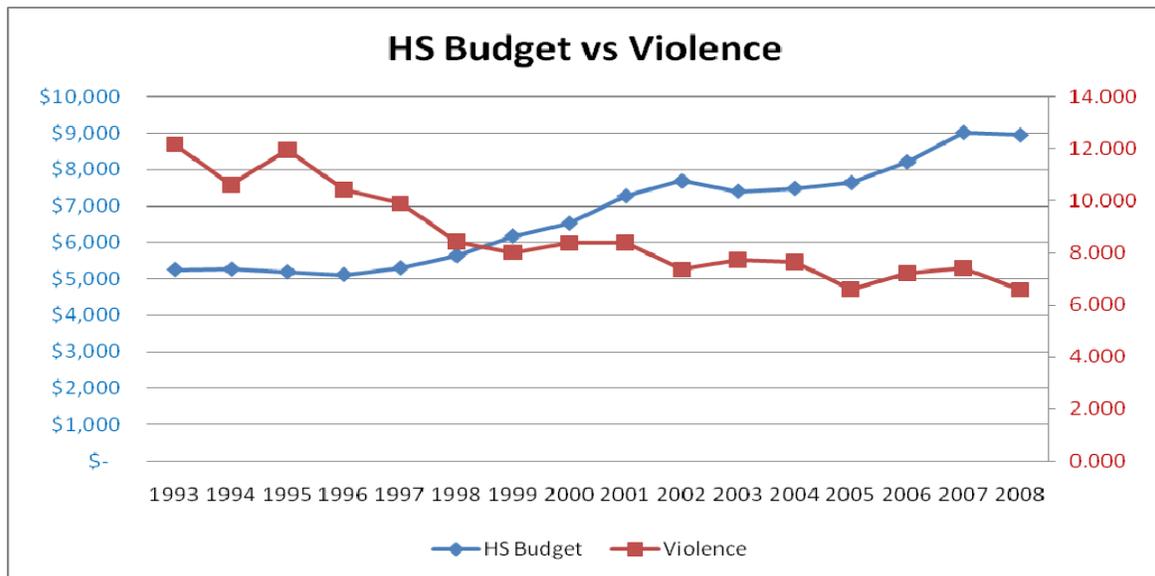


Figure 18. High School Budget Per Student vs. Violence Rate¹³²

There are two other hypotheses that may impact violence. However there was insufficient data to confirm the hypotheses.

Hypothesis 4e: *If education levels decrease, violence increases.* The justification for this hypothesis is in accordance with the justification given for Hypotheses 4a and 4b: education raises earnings, which lowers the appeal of committing crimes for monetary gain.

Hypothesis 4f: *If the amount of school programs offered decreases, violence increases.* School programs offer different alternatives to gang life. The programs can

¹³¹ See Appendix C, Table 3.

¹³² Data from the Education Data Partnership Web site, <http://www.ed-data.k12.ca.us/welcome.asp>.

be anything from vocational education programs to after-school tutoring or mentoring programs. The vocational programs tie in with higher education levels. Individuals who have difficulties with conceptual learning may be more successful with technical learning, especially students who do not speak English as their first language.

The statistical findings for the Education IV confirm that education deters violence in Salinas. Keeping children in school through graduation not only raises the attendance and graduation rates, but in turn lowers the dropout rates and increases the school budgets. It cannot be overstated how important this environmental factor is to affecting violence in Salinas.

E. POLICE FORCE

A police force does not operate in a vacuum. Police serve to protect a community, but the relationship is strained without the community's trust and support. The police depend on the community to report crimes, provide intelligence, and even more basic, uphold the social contract. When any of these items deteriorate, the police are put into a position of being reactive as opposed to proactive. In turn, the community deems that the police are not responsive to their needs and trust erodes, further perpetuating the vicious cycle.

To analyze how the police force in Salinas affects violence, the indicators include the Salinas PD (SPD) budget, the size of the SPD, and the number of active patrols. The current police-to-resident ratios are 1.67 SPD employees and 1.17 sworn police officers per 1,000 residents. Both the police force and police budget were normalized at a per capita rate of 1:1,000 for analysis. The analysis did not account for time lags, which are difficult to quantify or project. For the police department hypotheses, the time lag refers to the amount of time it takes for the violence level to change after officers are either hired or released.

Hypothesis 5a: If the Salinas PD budget decreases, violence increases. The justification behind this hypothesis that if a police department has fewer monetary resources, programs and/or personnel will have to be cut. Programs include the Police Action League and the Community Services Unit, the latter of which is responsible for

the neighborhood watch, cadet, and volunteer programs.¹³³ Personnel include both sworn and non-sworn members of the SPD.

This hypothesis is inconclusive. When looking at the indicator deltas, there is a 35 percent opposition between Salinas PD budget and violence.¹³⁴ This means 35 percent of the time when the SPD budget increased or decreased, violence respectively decreased or increased. Conversely, 65 percent of the time if the SPD budget increased or decreased, violence respectively increased or decreased. Figure 19 shows a 28-year comparison of violence and the SPD budget. Running a linear regression, the correlation coefficient is $-.258$ for the SPD budget and violence.¹³⁵ In this case a negative correlation indicates that the SPD budget and violence are moving in opposition to each other, but the overall correlation is weak. This opposes the positive relationship the indicator delta test found. Because of the disparity, this hypothesis is inconclusive.

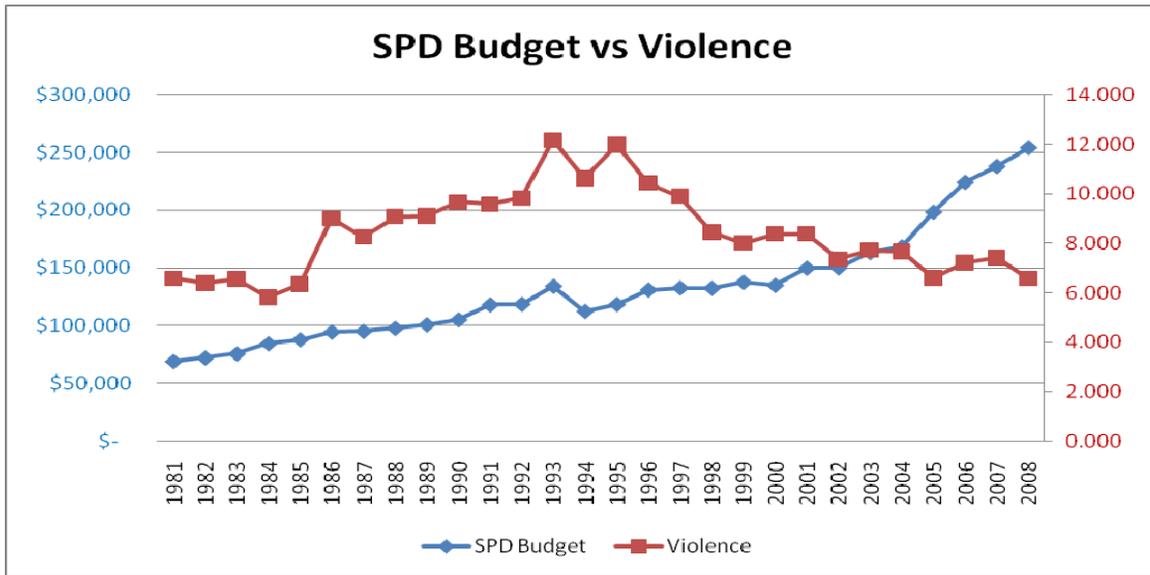


Figure 19. Salinas Police Department Budget vs. Violent Crimes¹³⁶

¹³³ Fetherolf, “90-Day Report,” 40.

¹³⁴ See Appendix A, Figure 38.

¹³⁵ See Appendix C, Table 3.

¹³⁶ Salinas Police Department budget data from the Salinas Department of Finance annual reports.

Hypothesis 5b: If the number of Salinas PD employees decreases, violence increases. The justification for this hypothesis is that without an adequate number of police officers for a population, the police will not be able to effectively serve the community or deter crime. Salinas has the second-lowest ratio of sworn police officers per capita in Monterey County, even though it has the largest overall population.¹³⁷ There was more data available for the number of overall SPD employees than for sworn officers, but both groups are analyzed to determine correlations.

For the overall Salinas PD and violence, the hypothesis is inconclusive. When looking at the indicator deltas, there is a 50 percent opposition between the number of SPD employees and violence.¹³⁸ This means 50 percent of the time when the total number of SPD employees increased or decreased, violence respectively decreased or increased. Figure 20 shows a 27-year comparison of violence and the SPD employees. Running a linear regression, the correlation coefficient is -.231 for SPD employees and violence.¹³⁹ In this case a negative correlation indicates that the SPD size and violence are moving in opposition to each other, but the overall correlation is weak.

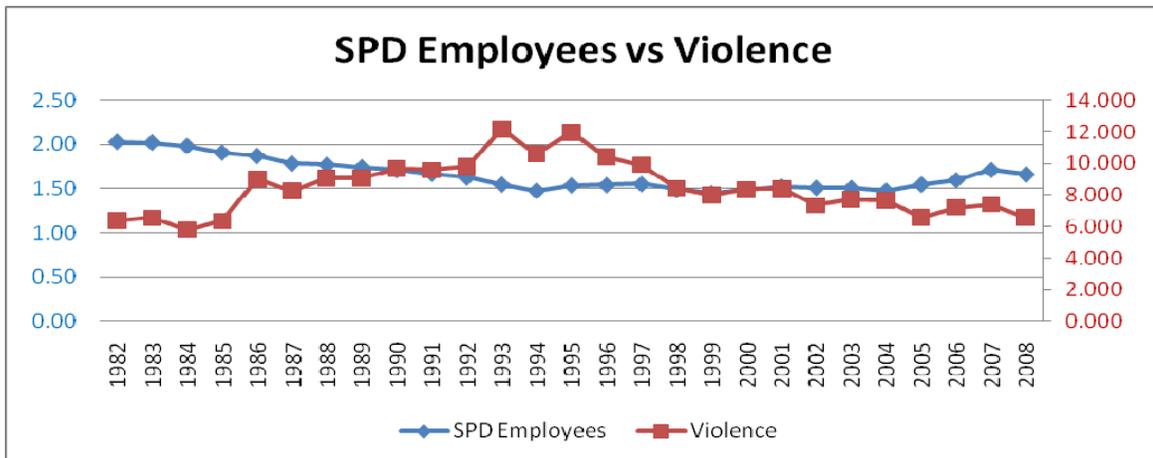


Figure 20. Salinas PD Employees Per Capita vs. Violence Rate¹⁴⁰

¹³⁷ Fetherolf, “90-Day Report,” 10.

¹³⁸ See Appendix A, Figure 39.

¹³⁹ See Appendix C, Table 3.

¹⁴⁰ Data for the Salinas PD employees from the Salinas Department of Finance annual reports.

Breaking out just the number of sworn police officers, the hypothesis is still inconclusive. When looking at the indicator deltas, there is a 36 percent opposition between sworn Salinas police officers and violence.¹⁴¹ This means 36 percent of the time when the sworn Salinas police force increased or decreased, violence respectively decreased or increased. Figure 21 shows a 12-year comparison of violence and the sworn Salinas police. Surprisingly, the correlation coefficient of .223 indicates a *positive* relationship between the number of sworn police officers and violence.¹⁴² However, this is still a weak correlation and does not indicate a strong relationship between the number of sworn police officers and violence.

Although it seems counter-intuitive that a higher number of sworn police officers leads to increased violence, it is important to note the causal relationship between police officers and violence. Typically, if violence increases in a community, the police department hires more officers to combat the violence. In this latter case an increase in violence leads to an increase in the size of the police department, which explains the positive relationship found in Salinas' case.

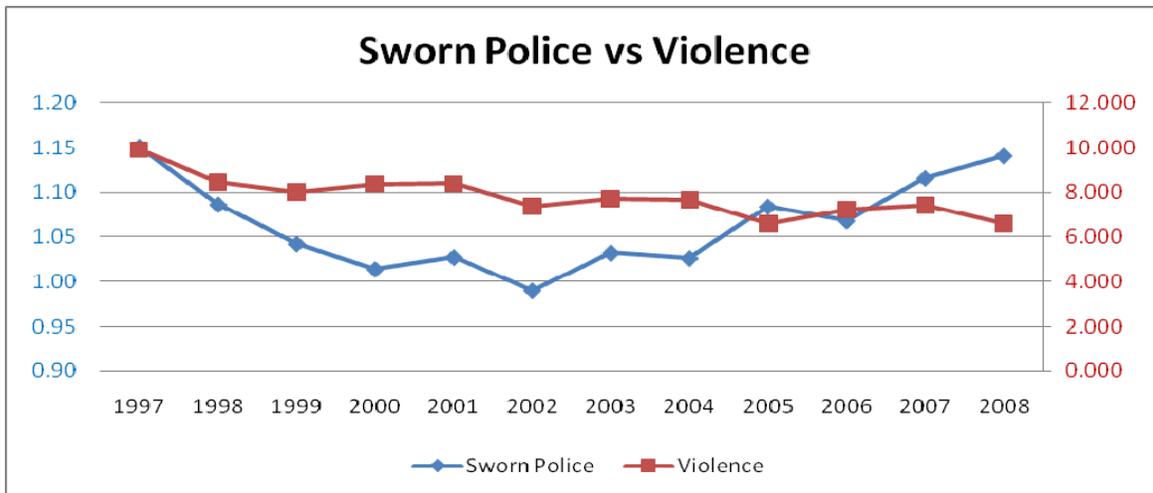


Figure 21. Number of Sworn Police Officers per Capita vs. Violence Rate¹⁴³

¹⁴¹ See Appendix A, Figure 40.

¹⁴² See Appendix C, Table 3.

¹⁴³ Data for the number of sworn Salinas PD officers from the Salinas Department of Finance annual reports.

Hypothesis 5c: If the number of Salinas PD active patrols decreases, violence increases. One other hypothesis that considers the number of Salinas PD operations may impact violence. Active patrol refers to police officers “protecting and serving” in the neighborhoods and community. This hypothesis is similar to the number of employed police: more police officers equal more patrols. More patrols equals more opportunity the police can conduct community policing and get to know the area in which they operate. Additionally, interacting with the citizens and patrolling neighborhoods builds the community’s trust in the police and increases the likelihood that people will report crimes and provide intelligence to the police. Criminals are less likely to commit crimes in areas that have a strong police presence or in neighborhoods that report suspicious activity to the police. However, there was no available data to analyze this hypothesis.

For the Police Force IV, the data indicates that the causal relationship between the police department and violence makes it difficult to truly determine if the Salinas Police Department has either a positive or negative affect on violence. Further research should include more years of datasets for the number of sworn police officers, as well as time lag considerations that address the changes in violence following force increases and decreases over the years.

F. GANG RIVALRY

If there is only one gang in a given population, there is no rivalry. However, with the presence of another gang in the same population, competition for areas of operation, recruitment, and profits occurs. This happens not only between rival gangs such as the Norteños and Sureños, but also between cliques within each gang. Although the respective cliques for the Norteños and Sureños typically get along with each other, there is occasional infighting for control of territory and operations.¹⁴⁴

Unfortunately the data available for the gangs in Salinas is insufficient to identify exactly how gang rivalry affects violence. The hypotheses will be discussed but no statistical analysis is offered.

¹⁴⁴ CA DOJ, “Gangs Threat Assessment: Salinas, California,” 12.

Hypothesis 6a: If the number of rival gangs increases, violence increases. As previously noted, the current estimate of Norteños to Sureños is 60 percent to 40 percent, respectively. Although other gangs have been present in Salinas, such as African-American gangs and outlaw motorcycle gangs, Hispanic gangs make up the overwhelming majority of the gang population in Salinas.¹⁴⁵

The Norteños previously held a monopoly on the city and repeatedly victimized the Sureños. That changed as the number of Sureño cliques increased and became more organized. “As the number of Sureños in Salinas increases, so has the fierce competition between the two gangs. The result has been a spiraling retaliatory-based violence that compounds the community’s public safety concerns.”¹⁴⁶ There is no doubt that the rivalry between the Norteños and Sureños contributes to the overall levels of violence in Salinas, even if the relationship is not quantifiable.

Hypothesis 6b: If the number of gang cliques increases, violence increases. The Salinas PD estimates approximately 21 Hispanic cliques in the city, almost evenly divided between the Norteños and Sureños. However, clique populations and operating procedures vary widely. One Norteño clique, Salinas East Market, has an estimated population of 1,000 members and is considered to be extremely violent and well organized.¹⁴⁷ The Sureño clique Vagos has an estimated 500 members and is one of the oldest Sureño cliques in Salinas.¹⁴⁸ The smaller Norteño clique Salinas Acosta Plaza has an estimated 300 members, but “has a propensity to use lethal force.”¹⁴⁹ Another Sureño clique, Hebron, frequently clashes with other Sureño cliques and even wears colors and identifiers usually associated with Norteños.¹⁵⁰ Similar to Hypothesis 6a, there is no

¹⁴⁵ CA DOJ, “Gangs Threat Assessment: Salinas, California,” 12–13.

¹⁴⁶ Ibid., 1.

¹⁴⁷ Ibid., 14.

¹⁴⁸ Ibid., 18.

¹⁴⁹ Ibid., 15.

¹⁵⁰ Ibid., 19.

doubt that the rivalry between the cliques, whether Norteño-Sureño, Norteño-Norteño, or Sureño-Sureño, affects the overall violence levels in Salinas, even if the relationship is not quantifiable.

Although it is highly unlikely that the Salinas PD will ever have statistics for every gang member in Salinas, the Gang Rivalry IV warrants further research. Arrest and crime logs with clique information for victims and assailants should be analyzed to determine if the gang violence is primarily between related cliques (Norteño vs. Norteño, Sureño vs. Sureño), primarily between opponent cliques (Norteño vs. Sureño), or if the two types of rivalry are equally violent.

G. PRISON

Prison impacts are also difficult to quantify and hypothesize. Getting tough on crime and placing more individuals into prison is not having the effect that the U.S. desires.¹⁵¹ Recidivism rates are proof positive of this failure. In California, a paroled prisoner can expect to have a recidivism rate of 68 percent in his or her lifetime.¹⁵²

Rehabilitation and time lags are other areas that are difficult to show and project. Research has shown that intervention programs, such as rehabilitation, assist in keeping prisoners from committing future crimes. Rehabilitation needs to occur both inside and outside of the prison system. Suppression alone will not prevent a prisoner from committing crimes.¹⁵³ Without rehabilitation, it is more likely that a released prisoner will commit another crime. This is where a time lag occurs. Similar to the school dropout time lag discussion, a time lag in this regard is the amount of time it takes an individual to commit a crime after being released from prison.

¹⁵¹ House of Representatives Committee on the Judiciary, "Gang Crime Prevention and the Need to Foster Innovative Solutions at the Federal Level," October 2, 2007, 2. <http://frwebgate.access.gpo.gov/>.

¹⁵² California Department of Corrections and Rehabilitation, "Population Reports," <http://www.cdcr.ca.gov/>. Statistic is a compiled average of yearly recidivism rates as listed on the Web site reports.

¹⁵³ House of Representatives Committee on the Judiciary, "Gang Crime Prevention," 81–82.

Data for these hypotheses was only found at the state level for California. Therefore prison impacts will be discussed, but there is no data to prove or disprove the hypotheses.

Hypothesis 7a: If prison rehabilitation programs decrease, violence increases. As stated above, intervention programs should be a priority and continuous. Opportunities need to be created to assist prisoners in adapting to life outside of prison. In some cases, attention toward certain individuals may be constant, whereas other individuals may only need a small amount of intervention to adapt. Research has shown that creating this opportunity is the best way to reform individuals and create a safer community.¹⁵⁴

Hypothesis 7b: If the prison recidivism rate increases, violence increases. The recidivism rate is defined as the rate of prisoners rearrested for crimes after being released from prison.¹⁵⁵ Over the past nine years, the average recidivism rate in California for an individual being released and returning to prison within one year is 41 percent; within two years is 54 percent; and within three years is 58 percent.¹⁵⁶ However, data specific to Salinas was not available to study this hypothesis.

For the Prison IV, it warrants further research to determine if parolees from Salinas Valley State Prison or the Monterey County Jail continue to commit crimes in Salinas upon release.

H. SOCIAL SERVICE PROGRAMS

Three areas were looked at to understand if social service programs impacted violence. The first is the Salinas social welfare system. This is the money provided to the city from government and non-government organizations to assist needy families. The second is the number of social workers assisting the city of Salinas. Social workers are defined as child, family, and school social workers, medical and public health social

¹⁵⁴ House of Representatives Committee on the Judiciary, "Gang Crime Prevention," 82.

¹⁵⁵ United States Department of Justice Bureau of Justice Statistics, "Reentry Trends in the U.S., Recidivism," <http://www.ojp.usdoj.gov/bjs/reentry/recidivism.htm>.

¹⁵⁶ California Department of Corrections and Rehabilitation, "Population Reports."

workers, and mental health and substance abuse social workers.¹⁵⁷ The third is the amount/type of non-school related programs available to citizens, such as church programs, non-profit youth outreach programs, and city-funded programs, such as library services and programs offered by the parks and recreation department. The data found for this section is insufficient, with the exception of the library and parks and recreation budgets. These budgets will be used as proxies to measure the non-school related programs hypothesis, but the other hypotheses will only be discussed.

Hypothesis 8a: If social welfare decreases, violence increases. The justification for this hypothesis is similar to the unemployment hypothesis: if social welfare benefits and assistance are unavailable, the perceived opportunity costs of engaging in illegal activity are lower. Social welfare programs in Monterey County include temporary cash assistance programs, Medi-Cal, and food stamps, among others.¹⁵⁸

Data from the Monterey County Department of Social and Employment Services shows that Salinas residents currently receive 49 percent of the social welfare monetary supplements provided to Monterey County.¹⁵⁹ Salinas' population makes up roughly 35 percent of Monterey County. Although seemingly out of proportion, these numbers do not tell the whole story. Salinas has one of the highest poverty levels in Monterey County, estimated at 15.3 percent in 2008.¹⁶⁰ This translates to approximately 23,000 Salinas residents living below the poverty level. An estimated 11.3 percent of Monterey County's 405,600 residents were below the poverty line in 2008.¹⁶¹ This translates to about 45,800 county residents below the poverty line, of which 23,000 were in Salinas. Based on these numbers, Salinas receives social welfare benefits and assistance in line with its poverty base.

¹⁵⁷ United States Department of Labor, "Occupational Outlook Handbook, 2008-09 Edition," April 14, 2007, <http://www.bls.gov/>.

¹⁵⁸ Monterey County Department of Social and Employment Services, "Community Benefits," <http://mcdses.co.monterey.ca.us/benefits/> (accessed December 7, 2009).

¹⁵⁹ Data from the Monterey County Department of Social and Employment Services.

¹⁶⁰ U.S. Census Bureau, "Fact Sheet: Salinas City, California," <http://factfinder.census.gov/>.

¹⁶¹ U.S. Census Bureau, "Fact Sheet: Monterey County, California," <http://factfinder.census.gov/>.

Social welfare data was not available for previous years to test how Salinas' social welfare amount correlates with violence.

Hypothesis 8b: If the number of social workers decreases, violence increases. The justification for this hypothesis is that if the number of social workers per capita in a population decreases, there is less human supply for the population's demands. This could translate to delayed responses to requested need, home or welfare visits, or processing benefits. If a person in need does not receive expected monetary or social welfare benefits in a timely manner, once again the perceived opportunity costs of engaging in illegal activity are lower.

Over the past five years there has been an average of 690 social workers at the Monterey County Department of Social and Employment Services. Each of these social workers handled an average of 161 cases in the same time frame. This equates to 110,900 cases in Monterey County during that 5-year period.¹⁶² However, the data does not indicate if any of the social workers were assigned solely to Salinas, or how many of the cases were specifically for Salinas residents. The data for Monterey County would be insufficient as a proxy because of Salinas' requirement for a higher proportion of social welfare need, as described in Hypothesis 8a.

Hypothesis 8c: If the number of non-school programs decreases, violence increases. The justification for this hypothesis is that youths are less likely to engage in violent behavior if they have positive alternatives. In Los Angeles, city officials realized that gang violence peaked in July and August during the timeframe from 4pm to midnight on Wednesdays through Saturdays.¹⁶³ In 2008, the city kept recreation centers open until midnight during those four days in the eight neighborhoods with the highest crime rates. The resulting statistics were impressive: the neighborhoods saw a 17 percent drop in overall violent crime, including an 86 percent decrease in homicides and a 23 percent decrease in aggravated assaults.¹⁶⁴

¹⁶² Data from the Monterey County Department of Social and Employment Services.

¹⁶³ Boris Weintraub, "New Weapons in the Fight Against Gangs," *Parks & Recreation* 44 (November 2009), 46.

¹⁶⁴ *Ibid.*, 46–47.

The biggest problem for non-school programs is funding. Multiple programs in Salinas received funding from local, city, state, and federal agencies over the years; however, the resources were not sustained. The Safe Schools/Healthy Students Initiative grant expired without replacement funds; Partners for Peace lost their funding; and PeaceBuilders expired due to licensing issues.¹⁶⁵ In 2008 Salinas funded a \$1 million program for one year to boost after-school and prevention/intervention programs, but it is too soon to say if the programs are impacting violence, or if they will retain funding and last. One other prevention and intervention source for at-risk youths is the church. Several churches offer voluntary assistance with after-school and homework programs. Pastor Frank Gomez, an advocate for such programs, is trying to rally more churches to assist in similar programs to prevent youth from joining gangs.¹⁶⁶

Without complete data for all of the non-school programs, there is no way to measure and accurately assess this hypothesis. However, there is sufficient data for the budgets for both the parks and recreation services and library services. The budgets for these services can act as proxies to determine if non-school programs deter violence. The budgets have been normalized to represent dollars per 1,000 residents.

When looking at the indicator deltas between the parks and recreation budget and violence, there is a 41 percent opposition.¹⁶⁷ This means 41 percent of the time when the parks and recreation budget increased or decreased, violence respectively decreased or increased. Figure 22 shows a 26-year comparison of the parks and recreation budget and violence. When utilizing the time-series regression, the data also shows an inconclusive hypothesis. Although negative, the coefficient is essentially zero, indicating no significant relationship between the parks and recreation budget and violence.¹⁶⁸

¹⁶⁵ Stahl, "Saving Salinas."

¹⁶⁶ Stahl, "Saving Salinas."

¹⁶⁷ See Appendix A, Figure 41.

¹⁶⁸ See Appendix B, Table 2.

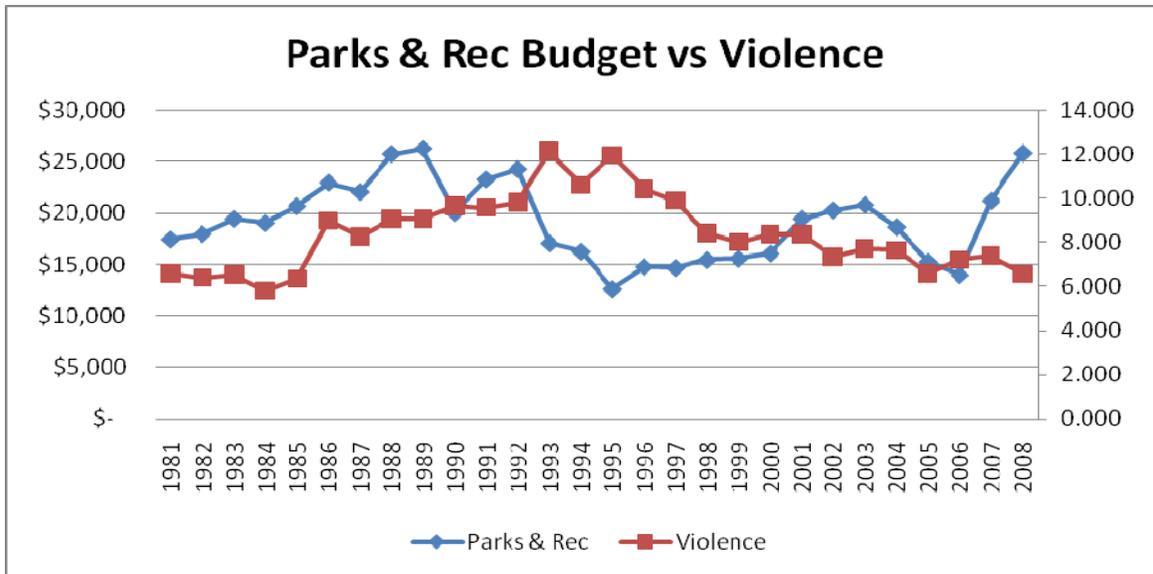


Figure 22. Salinas Parks & Recreation Budget vs. Violence Rate¹⁶⁹

When looking at the indicator deltas between the library budget and violence, there is a 37 percent opposition.¹⁷⁰ This means 37 percent of the time when the library budget increased or decreased, violence respectively decreased or increased. Figure 23 shows a 26-year comparison of the library budget and violence. Running a linear regression, the correlation coefficient between the library budget and violence is .177.¹⁷¹ Between the indicator deltas and the correlation coefficient, it appears that the library budget actually has a positive relationship with violence: if the library budget increases, violence also increases. However, this relationship requires further research based on who is utilizing the library’s services.

¹⁶⁹ Data for the Parks and Recreation budget from the Salinas Department of Finance annual reports.

¹⁷⁰ See Appendix A, Figure 42.

¹⁷¹ See Appendix C, Table 3.

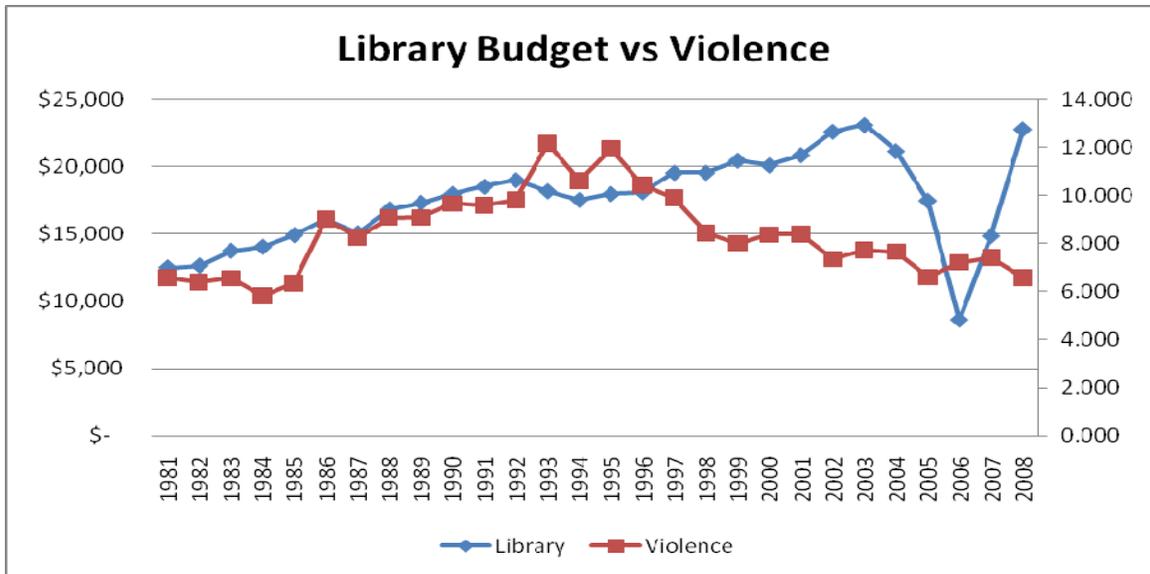


Figure 23. Salinas Library Budget vs. Violence Rate¹⁷²

Using the proxy comparisons for the parks and recreation and library budgets, it is inconclusive whether non-school programs actually deter violence. Further research in this area is required, particularly research centered on who is utilizing the parks and recreation and library programs. If these programs are primarily patronized by children and adults who are not involved in violent crimes or gangs, then it is logical that these programs would not significantly impact the level of violent crime in Salinas.

For the Social Services IV, all of the indicators and hypotheses require further analysis if and when the datasets become available to determine if these programs are negatively correlated with violence.

I. COMMUNITY INVOLVEMENT

Without the active participation of the community, there is no ownership of the city. There are two areas of measurement for community involvement. The first is Neighborhood Watch. This is measured by the amount of neighborhoods that have an organized group that assists the police with criminal or suspicious reporting and community policing. The second is the amount of calls made by the public to the police

¹⁷² Data for the library budget from the Salinas Department of Finance annual reports.

to report violent incidences. Without reporting or information from the citizenry, the police will not have enough intelligence to pursue violent criminals and make arrests.

Hypothesis 9a: If the number of neighborhood watch programs decreases, violence increases. Data was not available regarding the overall number of neighborhood watch programs, but the only significant neighborhood watch area is in south Salinas.¹⁷³ Former Salinas Chief of Police Dan Ortega stressed the need for more community involvement and for individuals to report criminal or gang activity.¹⁷⁴ Current Salinas Chief of Police Louis Fetherolf agrees with his predecessor and sees a need for neighborhoods and the Salinas PD to work together.¹⁷⁵ However, a lack of funding may cause the Salinas PD to disband the Community Service Unit, which assists neighborhoods in organizing neighborhood watch and volunteer programs.¹⁷⁶

Hypothesis 9b: If the number of Priority One police calls decreases, violence increases. The Salinas Police department has four categories of calls, with Priority One calls designated for emergencies with life-threatening injuries or violence. In 2008, three percent of the 116,303 calls made to the Salinas PD were Priority One.¹⁷⁷ This corresponds to an average of only 8 Priority One calls out of 318 total calls each day.

The lack of violent crime reporting in Salinas has multiple factors: a fear of retaliation; a code of honor among gang members; multi-generational gang families who protect each other; and a language barrier for migrants and immigrants.¹⁷⁸ Additionally, many migrants and immigrants fear the police based on either cultural perceptions, or the assumption that the police will report them to Immigration and Customs Enforcement. When a community lives in fear of either the criminals or the police, it is unlikely that the

¹⁷³ “Monterey Park Neighborhood Watch 2009: Meeting Discussion Guide,” July 22, 2009, http://montereyparksblog.com/wp-content/uploads/2009/09/Neighborhood_Watch_Strategies_Objectives_Actions.pdf.

¹⁷⁴ Stahl, “Saving Salinas.”

¹⁷⁵ Fetherolf, “90-Day Report,” 7.

¹⁷⁶ *Ibid.*, 40.

¹⁷⁷ *Ibid.*, 12. For 2008, 2,995 out of 116,303 calls were Priority One.

¹⁷⁸ Stahl, “Saving Salinas.”

citizens will involve themselves in community policing. Although the authors were unable to get full calling data for this hypothesis, it should be available from the Salinas PD for further research.

For the Community Involvement IV, more research is required to determine the correlations between community involvement and violence. Further research opportunities include obtaining more data on the Neighborhood Watch Programs established in Salinas, and analyzing these areas with respect to violence on a smaller geographic scale, such as by Police Area Command. Another research area is analyzing the number of Priority One calls over time to determine if an increase in Priority One calls is correlated with a decrease in violence.

III. RECOMMENDATIONS AND CONCLUSION

A. RECOMMENDATIONS

Mayor Dennis Donahue has a four-fold strategy for peace in Salinas: prevention, intervention, an expanded police department, and enhanced community engagement.¹⁷⁹ Applying the research findings from this thesis to the appropriate category of the four-fold strategy, the authors offer the following recommendations to help lower the violence rate in Salinas.

1. Prevention

In a community plagued by violence and gangs, prevention is a key tactic. Youths and young adults need to believe that they can lead successful, productive, and healthy lives. Maturing with this mindset will reduce the attraction of resorting to violence or joining a gang. Based on the research findings, education and employment are two significant areas that can help youths and young adults achieve this mindset, and prevent violence.

Of all of the independent variables tested, education is the most highly correlated with violence. A higher dropout rate corresponds with an increase in violence. Conversely, higher graduation rates, average daily attendance rates, and school budgets are correlated with lower levels of violence. These four indicators are highly interrelated: if children stay in school and graduate, the dropout rate decreases, and the graduation rate, average daily attendance, and school budgets all increase. Although increasing the graduation rate will not happen overnight, focusing on this environmental factor appears to offer the most proverbial bang for the buck.

Multiple programs were used in the past to keep children in school and provide a safe learning environment, particularly the umbrella of programs under the Safe School/Healthy Students Initiative. In 2003, a cost analysis study evaluated the

¹⁷⁹ Stahl, "Saving Salinas."

effectiveness of the Safe Schools Environment (SSE) element under the SS/HS Initiative for Salinas.¹⁸⁰ The SSE element consisted of the school resource officer (SRO) program, which addressed safety and bullying within the schools, and the School Attendance Enforcement Program (SEAP), which targeted chronic truants. The analysis concluded that the SSE element was not only cost effective, but it also had a positive impact on both the students involved and the overall Salinas community. Furthermore, the analysis showed a positive return of investment for the city.¹⁸¹ Unfortunately, the SEAP program was discontinued and five of the ten SROs were cut due to a lack of funding after the grant expired.¹⁸² As previously discussed, a lack of funding also curtailed other education-related programs under the SS/HS Initiative. Although funding will be a problem for any program recommended to help lower violence, education pursuits should be given priority for funding.

Employment is another area that provides prevention benefits. However, given the current state of the economy, it will be difficult to create new or more jobs in order to reduce the unemployment rate at the present time. The October 2009 unemployment rate for Salinas was 19 percent, well above the Monterey County average of 13.7 percent.¹⁸³ Although daunting, this area still requires attention to help lower violence levels. Additionally, city officials must anticipate that if unemployment increases, violence is also likely to increase. For the future, this translates to having a contingency plan in place if the unemployment rate spikes again. This contingency plan could include more police patrols as a proactive measure against violence, emergency funds to help the local citizens, food banks, and shelters, or job placement assistance to help laid-off workers.

The housing correlations from the research indicate that extended family networks are important to reducing violence in Salinas. Violence decreases when the average persons per household increases, suggesting that larger and extended families are a

¹⁸⁰ Michael J. Zerbo et al, "Cost Avoidance Analysis, Safe School Environment Program City of Salinas, California" (Master's Thesis, Naval Postgraduate School, December 2003). <http://www.dtic.mil/>.

¹⁸¹ *Ibid.*, v.

¹⁸² Fetherolf, "90-Day Report," 25.

¹⁸³ KION, "Monterey County Unemployment Snapshot," <http://www.kionrightnow.com/Global/story.asp?s=9759852>.

deterrence to violence. Salinas tried to capitalize on family bonds in 2007 by recruiting local grandmothers to help influence the decisions and lifestyles of children and young adults. The grandmother figure is an important part of the Hispanic culture, usually highly revered and respected. Salinas hoped that a grandmother brigade could help prevent gang involvement by youths.¹⁸⁴ The grandmother brigade did not materialize, but concepts like this should be explored further and implemented. Utilizing family ties to fight violence will not work in all cases, particularly for the multi-generational gang families. But if family involvement and mobilization can prevent the majority of at-risk youths from joining gangs, violence should decrease.

2. Intervention

In addition to preventing youths from joining a gang or resorting to violence, intervention programs are required to offer productive and safe alternatives to those already engaged in violent behavior or gangs. Similar to prevention, intervention programs that develop education and employment skills are in line with the findings of this thesis. However, many of the postulated relationships that involve intervention, such as rehabilitation programs in the prisons and non-school programs, were not statistically measured because of a lack of data. Some of these programs will be discussed, but further research is required to fully assess their impact on violence levels in Salinas.

One alternative is training programs with long-lasting effects, such as vocational training. Vocational training offers both educational and job skills, skills that can be utilized in the job market as soon as the training is complete. Therefore, vocational training addresses both the employment and education correlations found in the research. Other programs that involve both education and employment skills should be implemented to offer legitimate alternatives to at-risk youths, former gang members, and prior offenders.

Established programs in Salinas that focus on intervention through counseling, education, employment, and rehabilitation must be fostered and funded. Similar to the

¹⁸⁴ John Cote, "To Combat Gangs, Salinas Taps Grandmothers' Power," *San Francisco Chronicle*, July 29, 2007, <http://www.sfgate.com/>.

education emphasis with respect to prevention, successful programs such as the California Youth Outreach¹⁸⁵ or Second Chance¹⁸⁶ must receive support and funding from the community. It is not enough to say that a city is committed to reducing violence; the city must also make the hard decisions about where to focus its resources. If California Youth Outreach and Second Chance are more likely to impact the violence levels and keep youths out of gangs or jail, then the resources for other programs, such as the parks and recreation department, library, or police department, should be reallocated.

3. Expanded Police Department

Although the findings in this thesis regarding the Salinas Police Department and violence are inconclusive, it is important to note the relationship between violence and the police. If violence increases, cities typically put more money into the police budget for more officers, enhanced technologies, and more equipment. On the other hand, one would expect that an increase in police officers will result in a decrease in violence. In other words, more police are both a response to higher levels of violence and a cause of lower levels of violence. This notion, that the police force and violence hold a causal relationship in both directions, is likely what led to the inconclusive findings reported above. The recommendations presented here are reflective of the hypothesis that a larger police force will deter violence.

The police need to have a permanent presence in the areas with the most violent activity. For Salinas, these areas are primarily in the east part of Salinas. Salinas should operate a fully functioning police substation in the center of gang and violent activity in east Salinas. The Salinas PD worked out of east Salinas in the past, but the building was run-down and the substation was only for police officers; residents still had to go to the

¹⁸⁵ California Youth Outreach is an intervention agency located in five gang-infested cities in California. They are, “dedicated to reaching out to all gang impacted youth, families and their communities with education services, intervention programs and resource opportunities that support a positive and healthy lifestyle.” See www.cyoutreach.org.

¹⁸⁶ Second Chance is a non-profit organization in Salinas, “specially trained in adolescent development and the latest anti-gang intervention techniques.” See scyp.org.

main police office building in downtown Salinas to file police reports.¹⁸⁷ The expectation is that a fully functioning substation manned 24/7 will act as a deterrent to violence and gang activity. First, the police will have a permanent and continuous presence in an area plagued by violence. Second, the reaction time to respond to shootings and violent acts will be shorter because the substation is closer to the “hot spots.” Third, the police will be closer to the community most affected by violence, and can begin to forge positive relationships and trust. It may take several months or even years before the community in east Salinas trusts the police enough to provide intelligence regarding violent crime and gang activity. However, once the community begins to trust the police and provide information, the violent criminals and gangs will lose the ability to operate freely in the city.

During his tenure as a military advisor, John Waghelstein pointed out “[if] the people see the army as part of the solution and not as a threat, the guerrillas lose.”¹⁸⁸ Substitute military with police and insurgents with gangs and the concept is the same. Waghelstein also points out that “self-assessment is hard but necessary.”¹⁸⁹ The Salinas policymakers, police, and citizens need to reassess what is truly important with respect to the police department: more police officers and technologies, or a different approach to policing.

4. Enhanced Community Engagement

Although data was not available for the Community Involvement IV, the authors firmly believe that positive relationships between city officials in Salinas and the population are crucial for undermining the violence and gang problems. Community engagements are critical in building rapport and gaining trust, but can also be used as a passive technique to elicit information in an informal manner. The community knows

¹⁸⁷ Monterey County Weekly, “News Updates,” <http://www.montereycountyweekly.com/archives/2008/2008-Jul-17/subheaddeck-but-actual-headline-on-the-web/1/>.

¹⁸⁸ John D. Waghelstein, “Ruminations of a Woolly Mammoth, or Training and Advising in Counterinsurgency and Elsewhere During the Cold War,” in *Military Advising and Assistance: From Mercenaries to Privatization, 1815–2007*, edited by Donald Stoker (New York: Routledge, 2008), 157.

¹⁸⁹ *Ibid.*, 166.

information, and when put in the right situation individuals may divulge information that can assist police investigations.¹⁹⁰ Community engagements can range from local food drives, blood drives, Police and Fire Department displays, mingling with people at community block parties, or speaking to people at a neighborhood watch meeting. Any opportunity to be among the people to build trust should be used by city officials in order to strengthen the relationship within the community.

The most common community engagement is the neighborhood watch program. Communities with structured and involved neighborhoods typically are more organized and have less crime.¹⁹¹ In San Jose, California, the primary focus in fighting gang activity is community involvement and neighborhood watch programs. Through the neighborhood watch programs, trust, civility, and defragmentation of neighborhoods occurs.¹⁹²

San Jose also operates the Mayor's Gang Prevention Task Force (MGPTF), an endeavor led by the Department of Parks, Recreation, and Neighborhood Services. The MGPTF is broken into four different regional divisions. Each division is comprised of multiple city, school, and non-profit organizations that meet every two months to discuss strategies and determine the status of gang activity.¹⁹³ This mix of community involvement has proved effective for San Jose. Salinas needs to identify their correct level of community involvement. Violence can be prevented but it takes backing from the community to make prevention effective and lasting.

B. CONCLUSION

Table 1 is a summary of results found during the research for this thesis. All of the indicators are hypothesized to result in an increase of violence. Of the fourteen

¹⁹⁰ Waghelstein, "Ruminations of a Woolly Mammoth," 155.

¹⁹¹ Christopher J. Schreck, Jean Marie McGloin and David S. Kirk, "On the Origins of the Violent Neighborhood: A Study of the Nature and Predictors of Crime-Type Differentiation across Chicago Neighborhoods," *Justice Quarterly* 26 (2009): 787-789.

¹⁹² Angel Rios, "San Jose, California," (briefing presented at the 13 Cities Gang Conference, Monterey, California, September, 17, 2009).

¹⁹³ Andrew Moore, "Implementing a Citywide Gang Violence Reduction Strategy," California Cities Gang Prevention Network Strategy Paper, 2-5.

measured indicators, six are confirmed, two are refuted, and six are inconclusive. Of the two hypotheses refuted, the average persons per household and housing units per capita, these indicators do affect violence, but in a manner opposite of the relationship that the authors hypothesized. In other words, both of these indicators negatively affect violence, not positively as hypothesized.

Violence Indicator:	Scatter Plot	Correlation	Results
Salinas Budget Decreases	42%	-0.012	Inconclusive
Salinas Retail Sales Decreases	37%	-0.205	Inconclusive
Unemployment Increases	67%	0.235	Confirmed
Average House Price Increases	44%	-0.567	Inconclusive
Person Per Household Increases	33%	-0.813	Refuted; Indicator negatively affects violence
Vacant Units Increases	67%	0.791	Confirmed
Housing Units Decrease	33%	0.795	Refuted; Indicator negatively affects violence
HS Dropout Rate Increases	69%	0.446	Confirmed
HS Graduation Rate Decreases	63%	-0.759	Confirmed
HS Daily Attendance Decreases	67%	-0.472	Confirmed
HS Budget Decreases	60%	-0.849	Confirmed
SPD Budget Decreases	35%	-0.258	Inconclusive
SPD Employees Decreases	50%	-0.231	Inconclusive
SPD Sworn Police Decreases	36%	0.223	Inconclusive (subset of SPD Employees hypothesis)
Parks & Recreation Budget Decreases	41%	0.051	Inconclusive (proxy for non-school programs)
Library Budget Decreases	33%	0.177	Inconclusive (proxy for non-school programs)

Table 1. Thesis Results Summary

Areas that show confirmed affects on violence are unemployment, education, and housing. When Salinas implements a strategy to reduce violence and gang activity, these three areas must be addressed.

As the data indicates, violence is lower when unemployment rates are lower. If Salinas can provide jobs as part of their prevention and intervention programs, the violence levels should decrease. Although homicides were not the focus of this thesis,

the data also indicates that there is an increase in homicides when there is an increase in unemployment. Although there are many motivating factors for committing homicide, the data indicates that unemployment is one of those factors.

The data from this research shows that higher school attendance and graduation results in lower violence. This indicates that programs concentrated on reducing high school dropout rates, and increasing daily attendance and high school graduation rates, will result in a decrease in violence.

The third area that affects violence is housing. The data indicates that to reduce violence there should be more people per household living in fewer houses per 1,000 residents. However, it is not safe or logical to recommend that more people be inserted into a geographical space to reduce violence. These areas require further analysis, particularly centered on either census tracts or Salinas Police Department Area Commands. Vacant units also positively affect violence, and this area should be explored. Securing vacant buildings is a “cost-effective crime-control tactic for distressed neighborhoods.”¹⁹⁴

Although this research provides a positive start to understanding environmental factors that affect violence levels in Salinas, California, more research is needed to identify the overall affects that various socio-economic factors and violence have on each other. Once the full extent of *why* violence occurs is understood, officials and policymakers in Salinas can focus on *how* to reduce violence.

¹⁹⁴ William Spelman, “Abandoned Buildings: Magnets for Crime?” *Journal of Criminal Justice* 21 (1993): 481.

APPENDIX A – SCATTERPLOTS

This appendix contains the scatterplots of the change of each indicator versus the change in violence for each year of available data. The deltas were calculated for each year of available data, then plotted against each other on an X-Y scatterplot. For example, for the hypothesis, “If the unemployment rate increases, violence increases,” one would expect to see most of the scatterplot points in the negative-negative or positive-positive quadrants. This would indicate that when the unemployment rate increases or decreases, violence respectively increases or decreases. A preponderance of points in either of the positive-negative quadrants would serve to disprove the hypothesis because the unemployment and violence rates are moving in opposition to each other. Referencing the data in Section II, the percentage of similarity (positive relationship) or opposition (negative relationship) for each hypothesis is included, as well as whether the hypothesis is confirmed, refuted, or inconclusive.

Hypothesis 1a: If the spending budget of Salinas decreases, violence increases:
42% opposition, hypothesis inconclusive.

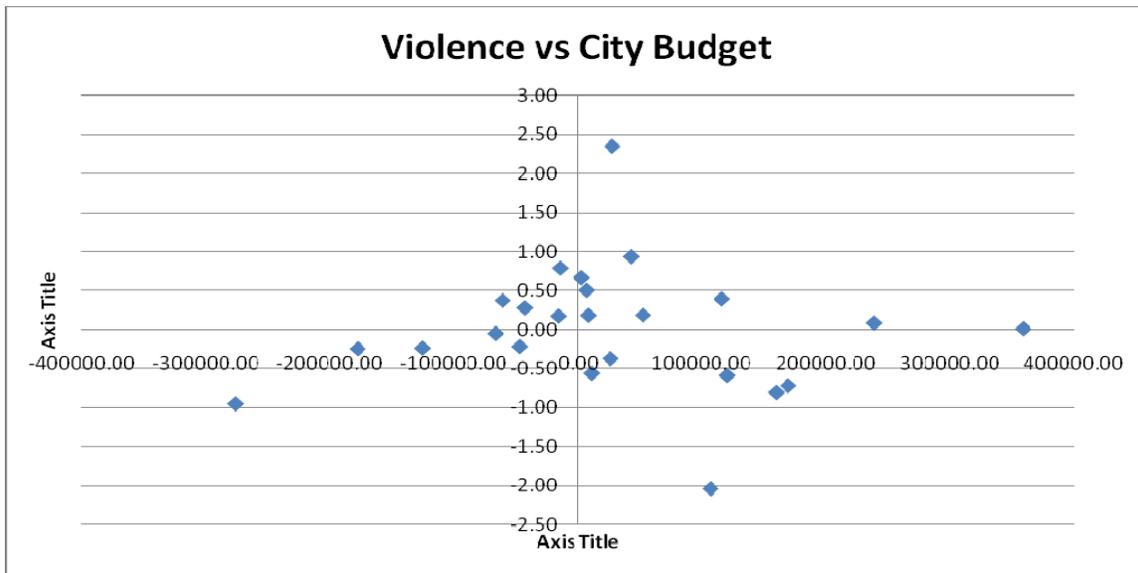


Figure 24. Violence vs. City Budget Scatterplot

Hypothesis 1b: If retail sales decrease, violence increases: 37% opposition, hypothesis inconclusive.

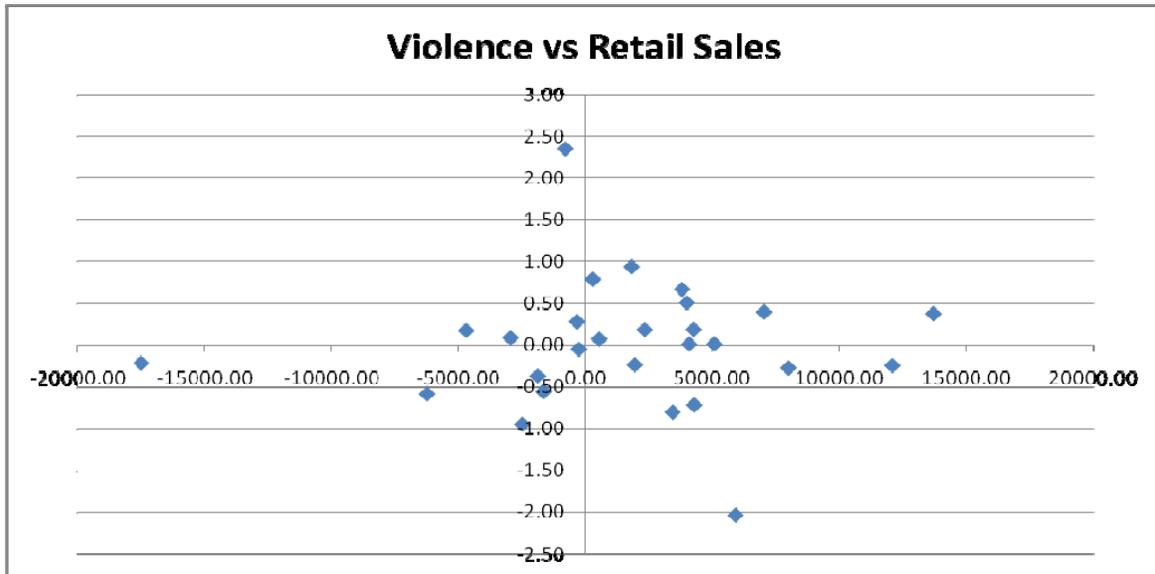


Figure 25. Violence vs. Retail Sales Scatterplot

Hypothesis 1c: If unemployment rates increase, violence increases: 67% similarity, hypothesis confirmed.

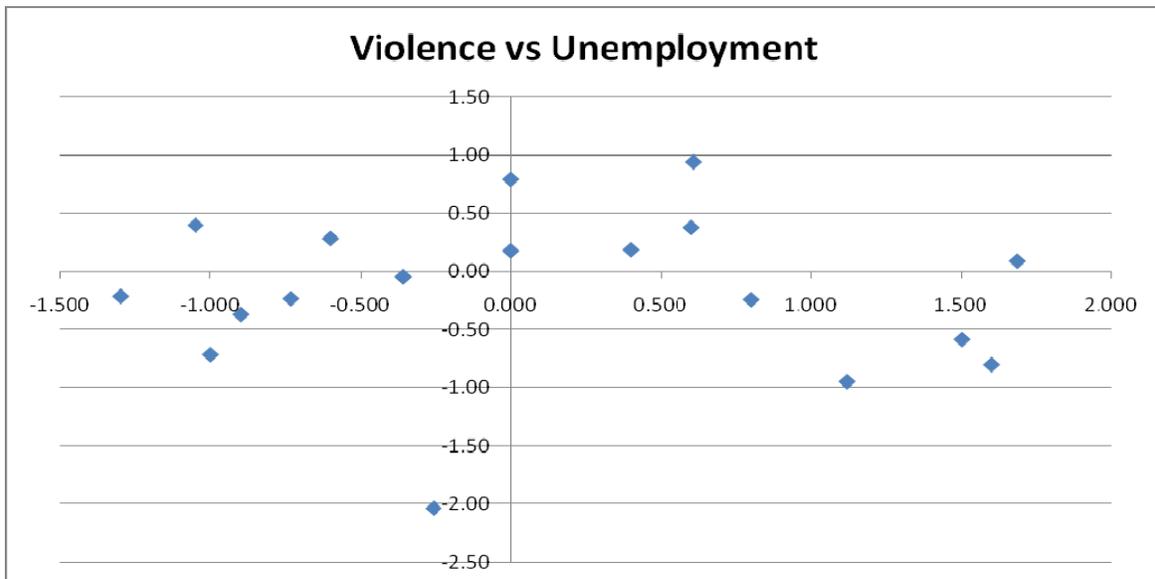


Figure 26. Violence vs. Unemployment Scatterplot

Homicide and unemployment rate: 72% similarity, no stated hypothesis.

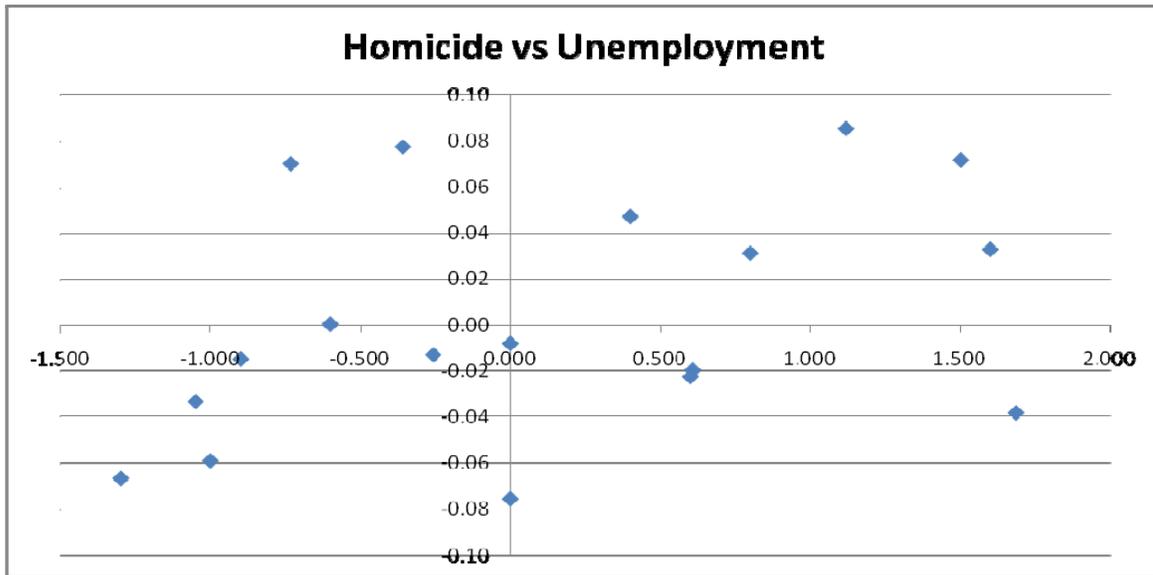


Figure 27. Homicide vs. Unemployment Scatterplot

Raw population and raw violence: 68% similarity, no stated hypothesis.

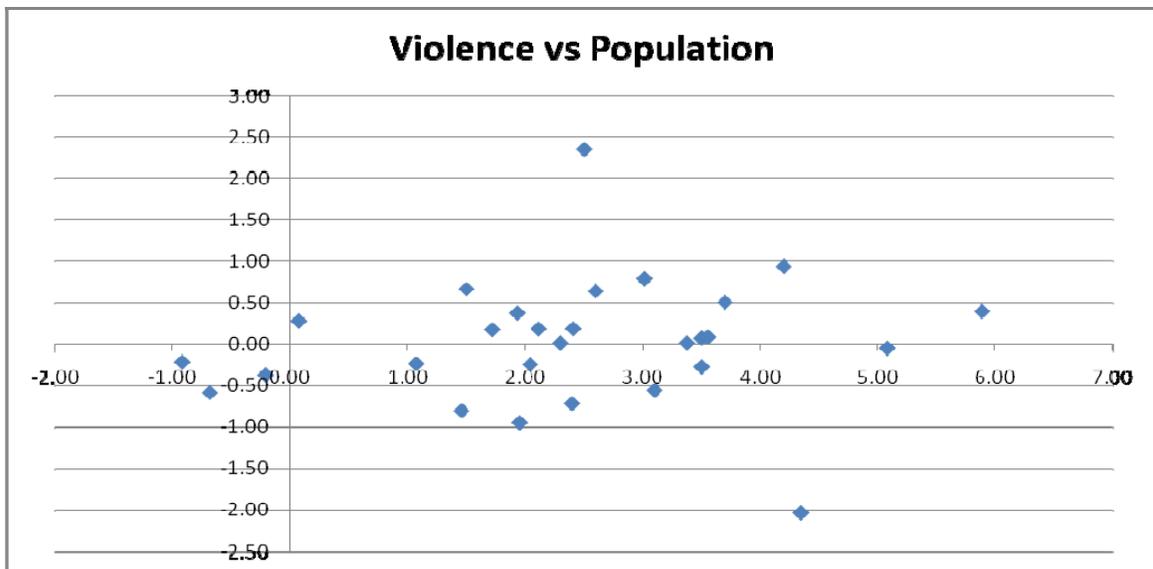


Figure 28. Violence vs. Population Scatterplot

Hypothesis 3a: If the housing market increases, violence increases: 44% similarity, hypothesis inconclusive.

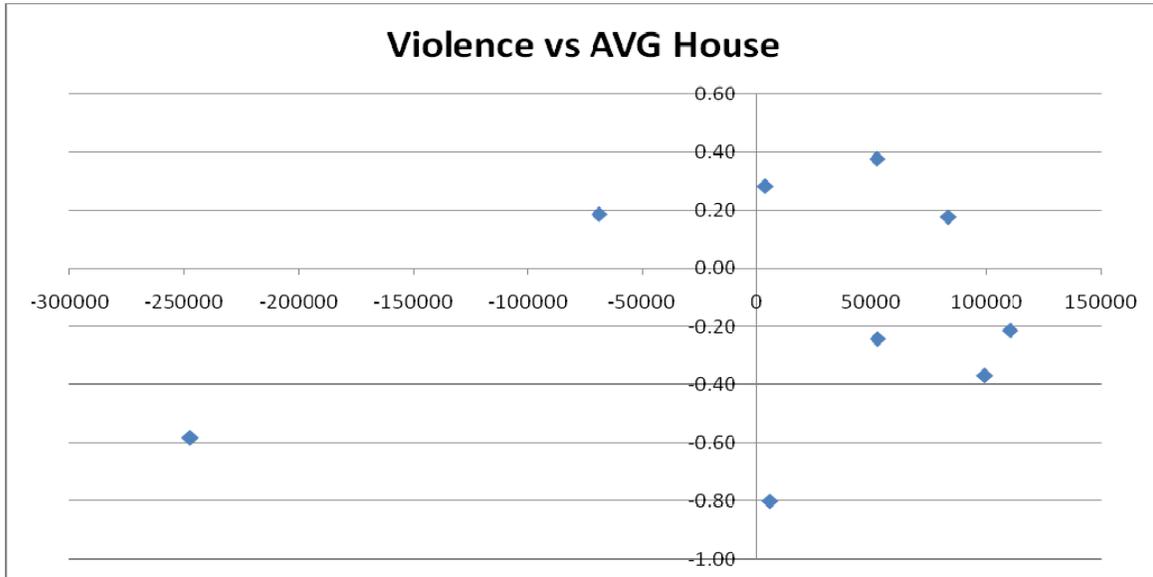


Figure 29. Violence vs. Average House Price Scatterplot

Homicide and housing market: 78% opposition (no stated hypothesis).

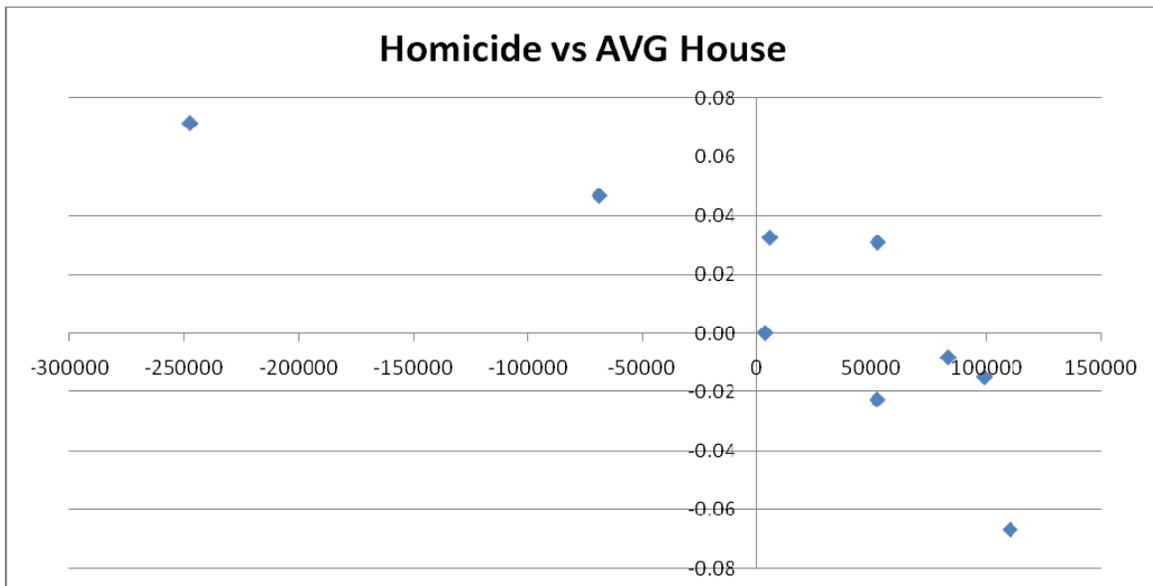


Figure 30. Homicides vs. Average House Price Scatterplot

Hypothesis 3b: *If the average number of persons per household increases, violence increases:* 33% similarity, hypothesis refuted. (67% opposition, therefore persons per household negatively affects violence).

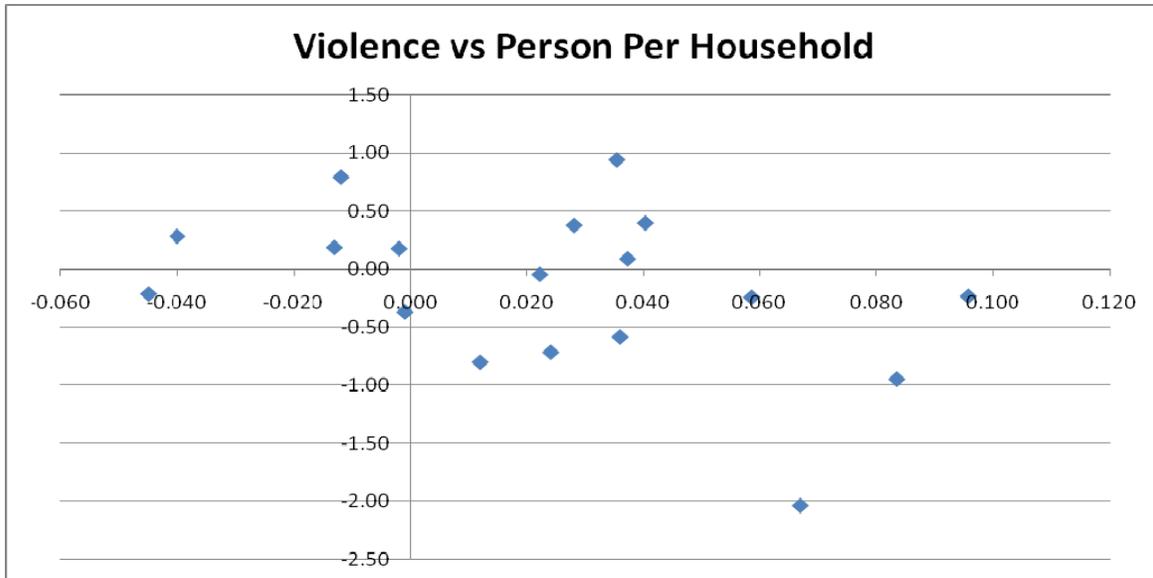


Figure 31. Violence vs. Persons Per Household Scatterplot

Hypothesis 3c: *If the amount of vacant units increases, violence increases:* 67% similarity, hypothesis confirmed.

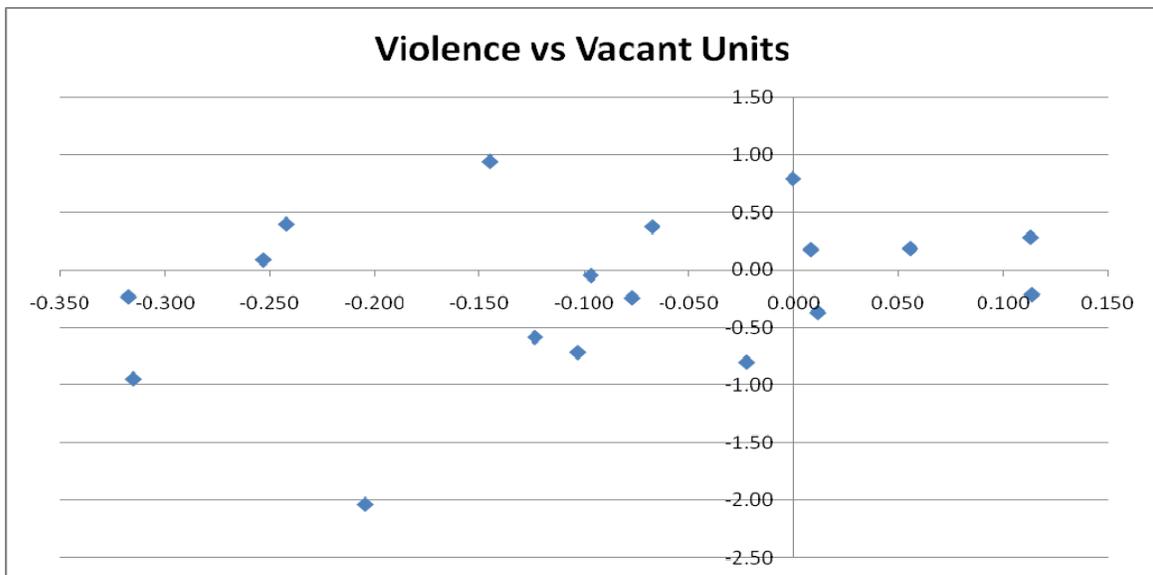


Figure 32. Violence vs. Number of Vacant Housing Units Scatterplot

Hypothesis 3d: If housing units per capita decreases, violence increases: 33% opposition, hypothesis relationship refuted. (67% similarity, therefore housing units per capita positively affects violence.)

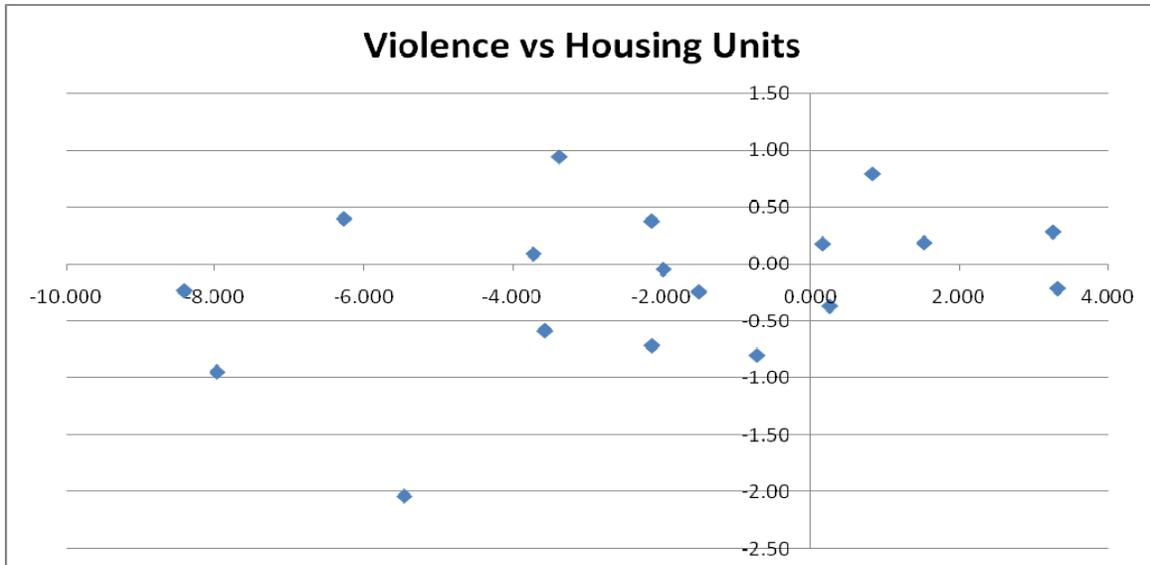


Figure 33. Violence vs. Housing Density Scatterplot

Hypothesis 4a: If the dropout rate increases, violence increases: 69% similarity, hypothesis confirmed.

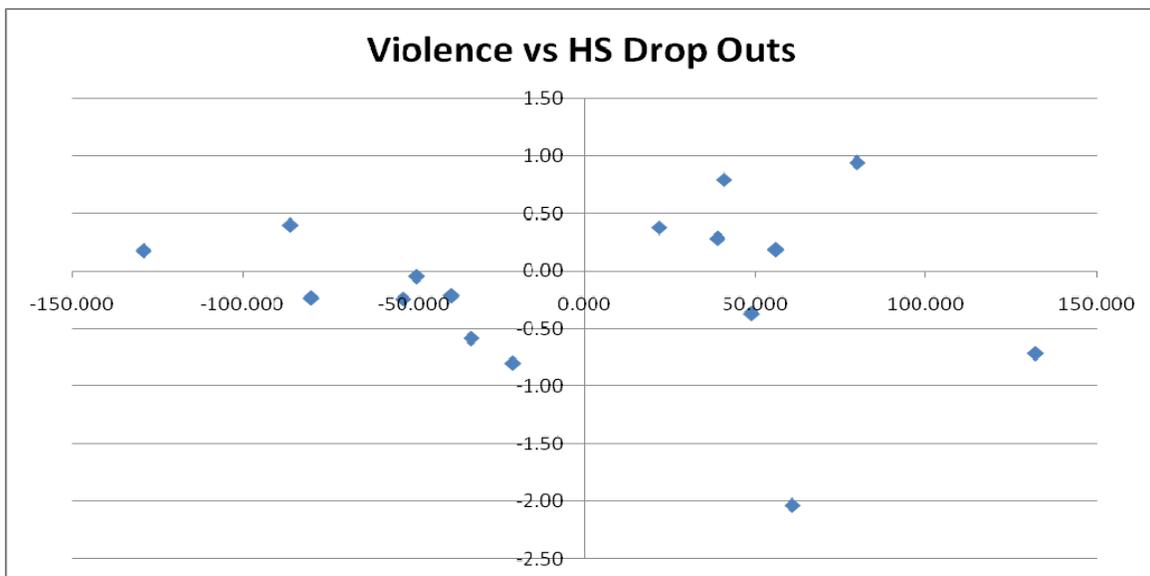


Figure 34. Violence vs. High School Dropout Rate Scatterplot

Hypothesis 4b: *If the graduation rate decreases, violence increases:* 63% opposition, hypothesis inconclusive. (Hypothesis confirmed with -0.759 regression correlation coefficient).

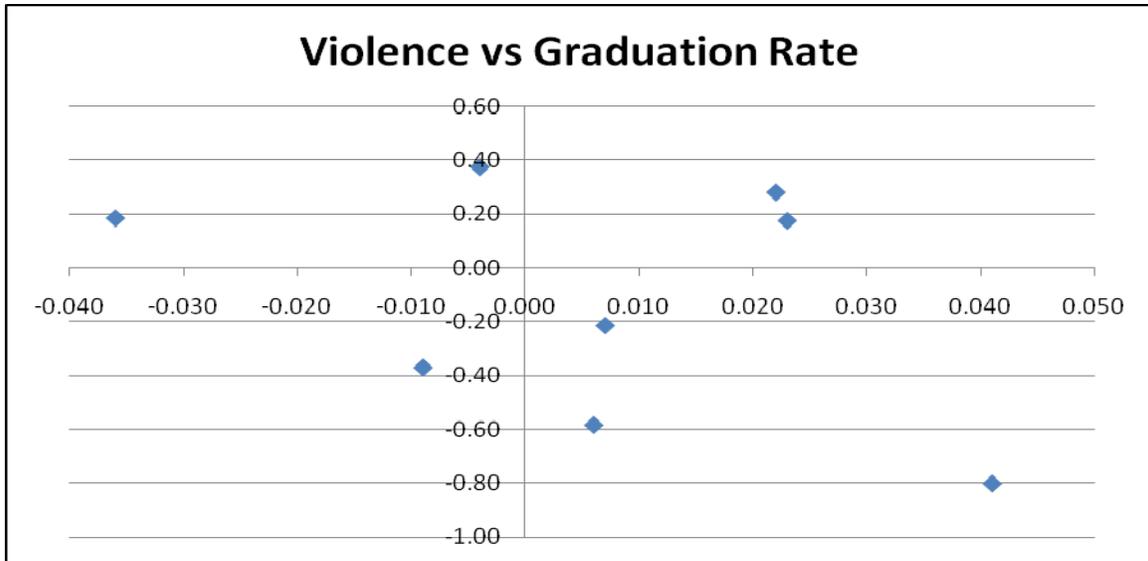


Figure 35. Violence vs. Graduation Rate Scatterplot

Hypothesis 4c: *If the average daily attendance decreases, violence increases:* 67% opposition, hypothesis confirmed.

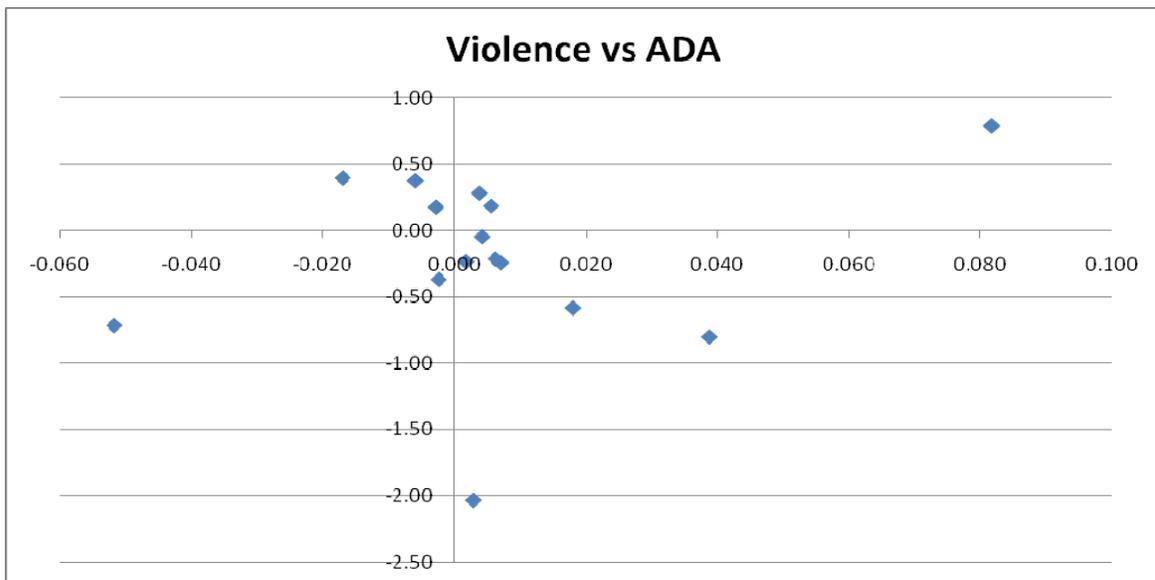


Figure 36. Violence vs. Average Daily Attendance Rate Scatterplot

Hypothesis 4d: If the school budget per student decreases, violence increases: 60% similarity, hypothesis inconclusive. (Hypothesis confirmed with -0.849 correlation coefficient.)

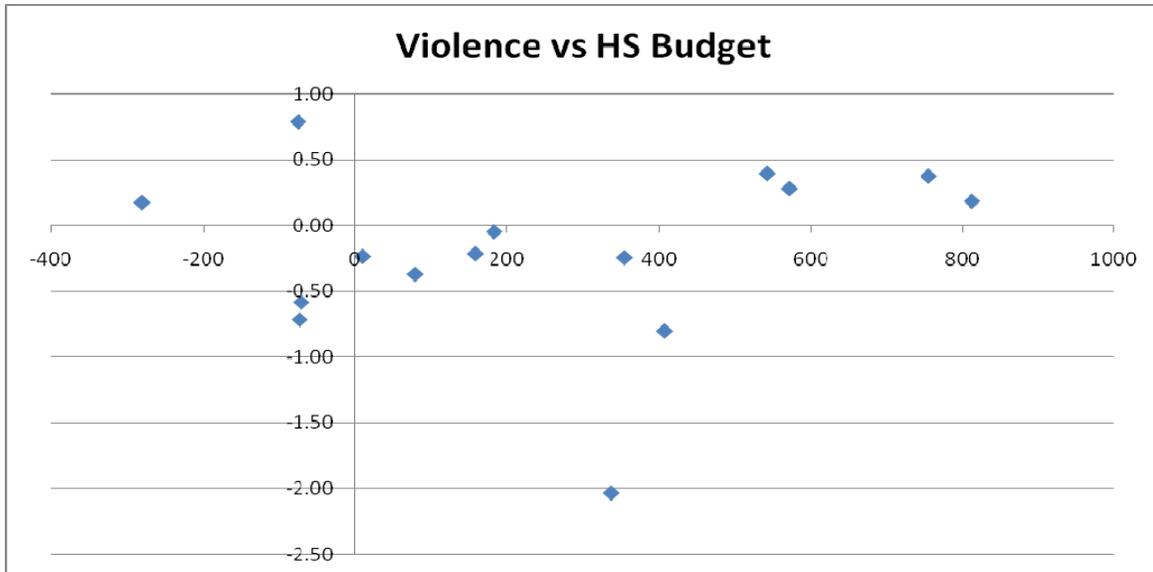


Figure 37. Violence vs. High School Budget Scatterplot

Hypothesis 5a: If the Salinas Police Department budget decreases, violence increases: 35% opposition, hypothesis refuted. (Hypothesis inconclusive with -0.258 correlation coefficient).

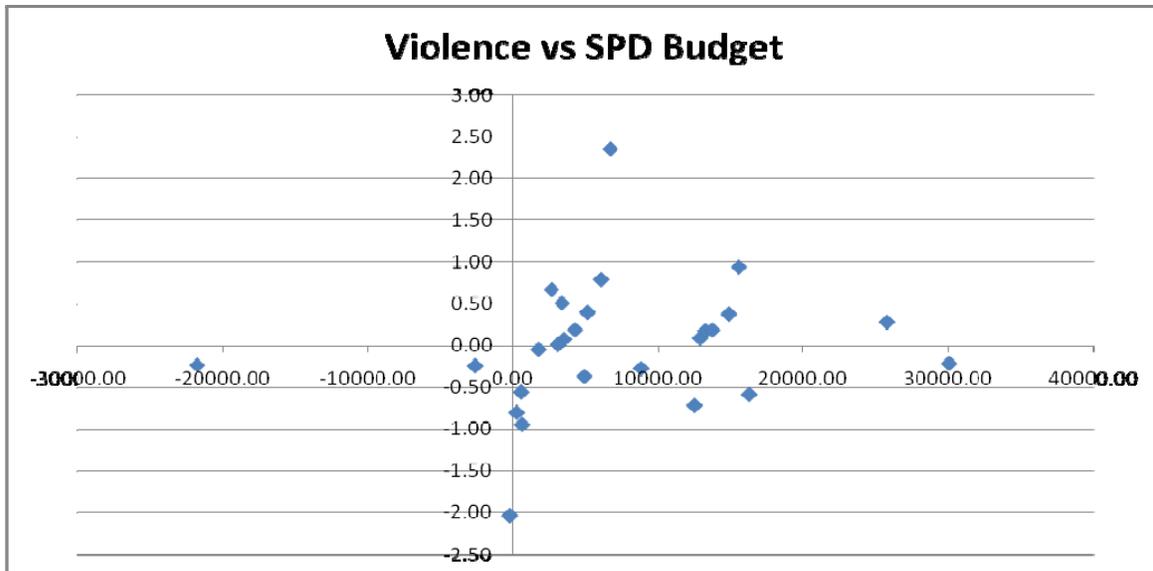


Figure 38. Violence vs. Salinas PD Budget Scatterplot

Hypothesis 5b: If the number of Salinas Police Department employees decreases, violence increases: 50% similarity (opposition), hypothesis inconclusive.

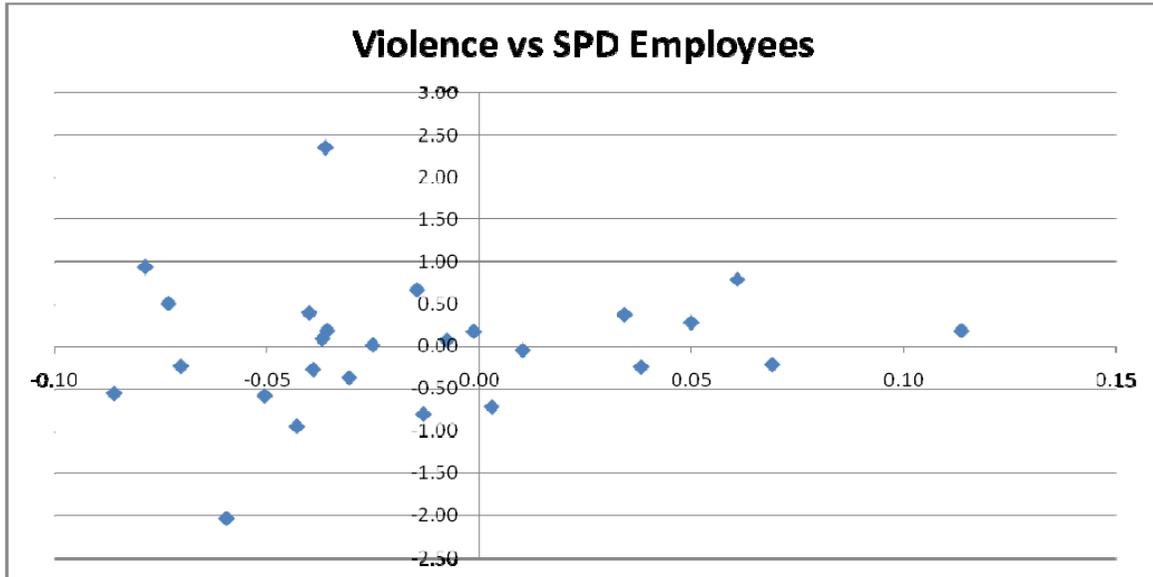


Figure 39. Violence vs. Total Number of Salinas PD Employees Scatterplot

Sworn police officers and violence: 36% opposition, no stated hypothesis.

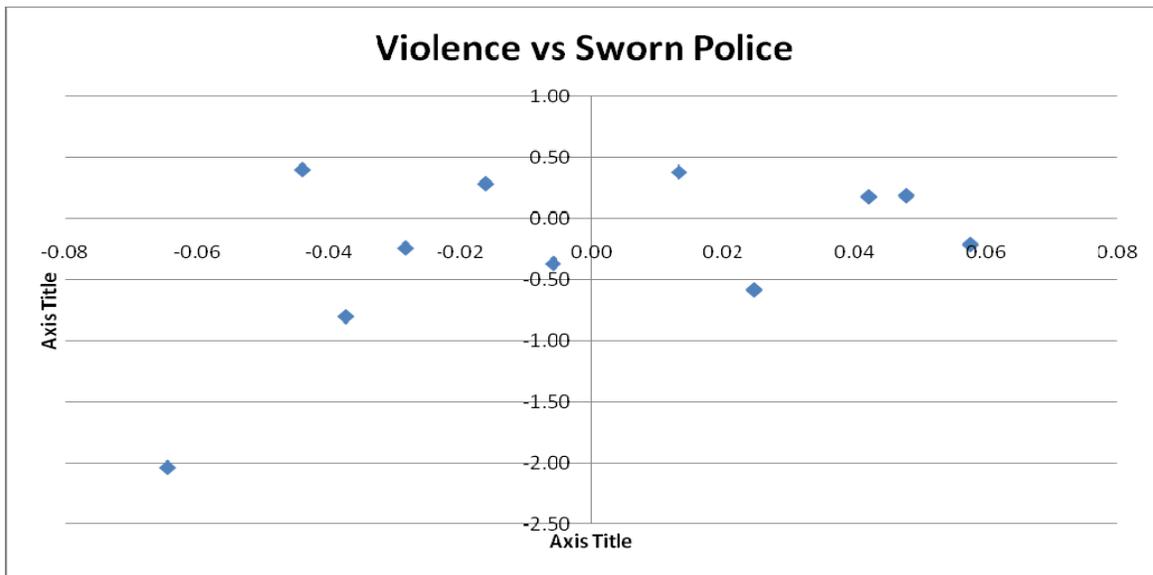


Figure 40. Violence vs. Number of Salinas PD Sworn Officers Scatterplot

Hypothesis 8c: If the number of non-school programs decreases, violence increases: Proxy comparison of Parks & Recreation Budget, 41% opposition, hypothesis inconclusive.

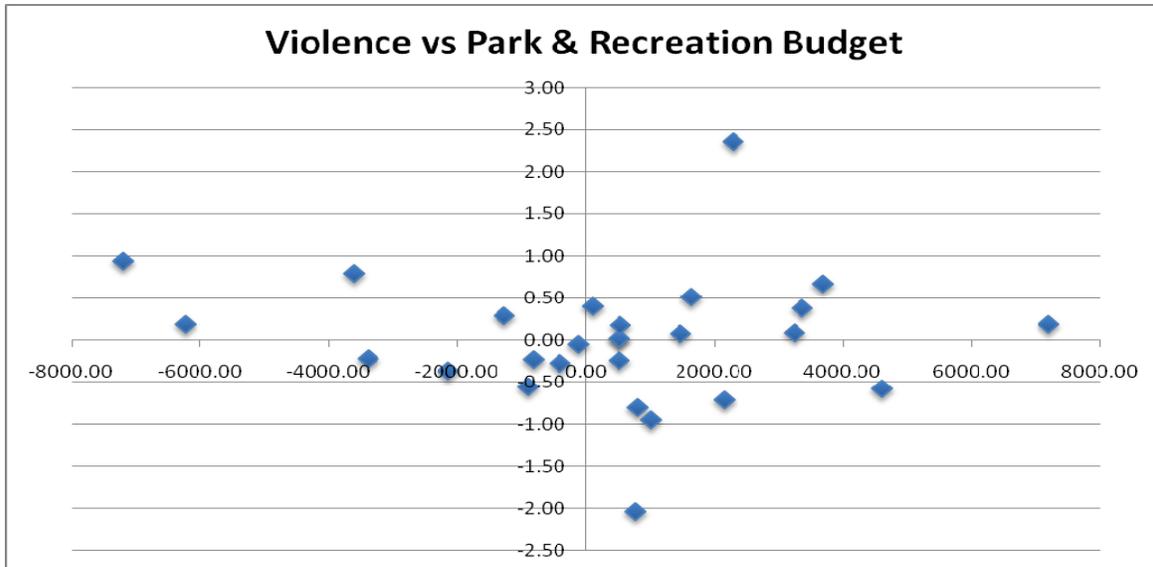


Figure 41. Violence vs. Parks & Recreation Budget Scatterplot

Hypothesis 8c: If the number of non-school programs decreases, violence increases: Proxy comparison of Library Budget, 37% opposition, hypothesis inconclusive.

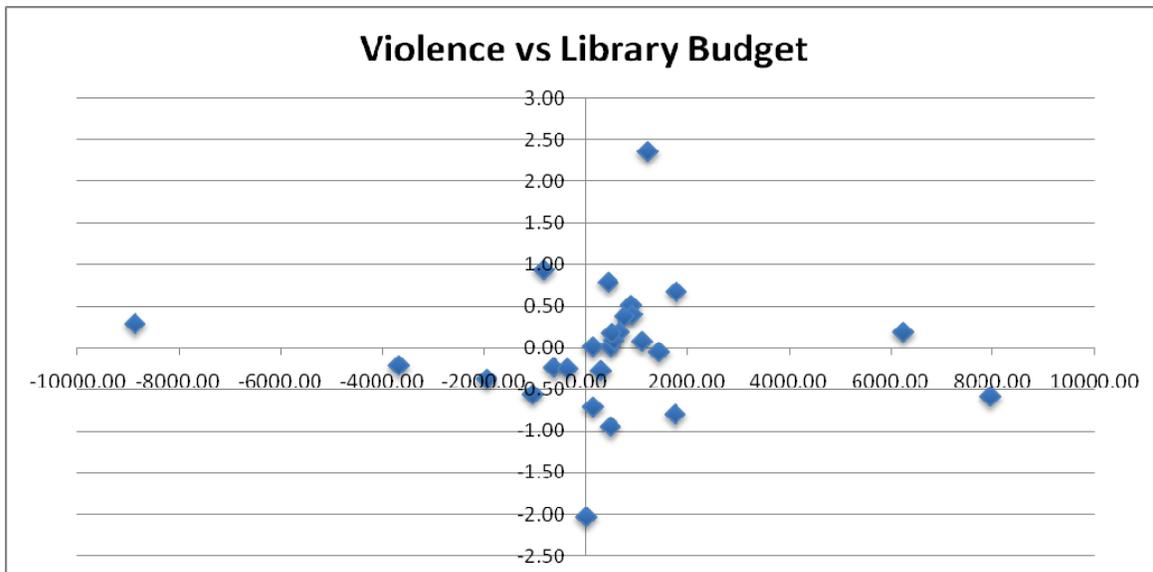


Figure 42. Violence vs. Library Budget Scatterplot

APPENDIX B – TIME-SERIES REGRESSION COMPARISON

To identify if combining multiple socio-economic factors impacted violence, the authors started with a static time-series regression. Conducting this analysis identified whether or not the socio-economic factors deter violence. Positive coefficients are interpreted as contributing factors to the level of violence. On the other hand, negative coefficients are interpreted as deterrents to the level of violence. Contributing factors include the population, the unemployment rate, the high school dropout rate, and housing units per 1,000 residents. Deterrent factors include the Salinas city budget, the Salinas Police budget, and the Salinas Park and Recreation budget.

Not all variables were tested from the thesis. First, a series of correlations among each independent variable's (IV) indicators were compared. This comparison ruled out similarly correlated indicators. If the indicators were highly correlated then only one indicator represented the overall IV. If there were any indicators that were not correlated, then the IV would be represented by each of the indicators. However, the indicators would represent a separate socio-economic factor within the time-series model.

In the static model, evidence of positive serial correlation indicated that each year's data points affected the subsequent years' variations. A Durbin-Watson statistic¹⁹⁵ was conducted. In order to isolate the individual weight of each variable, the Cochrane-Orcutt¹⁹⁶ dynamic model was conducted on the same data. In both models when the coefficient is negative, violence is being deterred. Also in both of the models a lower P-Value¹⁹⁷ represents a more robust or accurate account that the variable will portray the same affect over time. For example, the community budget had a negative coefficient, meaning that when there is more budget per 1,000 residents, violence is deterred. The

¹⁹⁵ Durbin-Watson: A statistic test used to detect the presence of autocorrelation in the residuals from a regression analysis. Values higher than 2 are desirable; values less than 2 indicate evidence of positive serial correlation. NLREG, "Understanding the Results of an Analysis," <http://www.nlreg.com/results.htm>.

¹⁹⁶ Cochrane-Orcutt: An algorithm for estimating a time-series linear regression in the presence of auto correlated errors. About.com, "Cochrane-Orcutt Estimation," <http://economics.about.com/library/glossary/bldef-cochrane-orcutt-estimation.htm>.

¹⁹⁷ P-Value: The probability of obtaining a test statistic at least as extreme as the one that was actually observed. Wikipedia, "P-Value," <http://en.wikipedia.org/wiki/P-value>.

community budget also has a low P-Value, meaning that the data set is consistently showing that when the budget increases violence is deterred.

Static Model			Dynamic Model		
Population	Coefficient	0.165	Population	Coefficient	0.021
	P-Value	0.001		P-Value	0.827
Unemployment	Coefficient	0.842	Unemployment	Coefficient	0.363
	P-Value	0.012		P-Value	0.164
City Budget	Coefficient	4.37E-06	City Budget	Coefficient	2.10E-07
	P-Value	0.053		P-Value	0.918
Dropout Rate	Coefficient	27.179	Dropout Rate	Coefficient	11.978
	P-Value	0.405		P-Value	0.671
Police Budget	Coefficient	-0.00002	Police Budget	Coefficient	6.48E-08
	P-Value	0.067		P-Value	0.997
Parks & Rec Budget	Coefficient	-0.0003	Parks & Rec Budget	Coefficient	-0.0001
	P-Value	0.003		P-Value	0.126
Housing Units	Coefficient	0.196	Housing Units	Coefficient	0.072
	P-Value	0.001		P-Value	0.383
Durbin-Watson Statistic (original):		1.351	Durbin-Watson Statistic (transformed):		2.117

Table 2. Durbin-Watson Coefficients and P-Values

Looking at the dynamic model analysis, unemployment and the high school drop-out rate have a strong impact on violence. Population and housing units are almost in equilibrium with violence, as they are both positive but relatively close to zero. City budget, police budget and community budgets are also close to zero, however they are negative, which does cause some deterrence toward violence. This does not mean that more money will deter more violence. It shows the propensity that the management of the respective budgets may assist in the deterrence of violence. For example more police conducting community policing and/or more alternatives such as sports and recreation programs funded by the parks and recreation department. While the statistical results are not very strong they do indicate patterns that either deter or contribute to violence.

APPENDIX C – LINEAR REGRESSION CORRELATION

Table 3 displays the linear regression data for each socio-economic factor versus homicides and overall violence.

Correlation:	Violence	Homicide	Significance
Salinas Budget	-0.012	0.310	Negative correlation favors hypothesis
Salinas Retail Sales	-0.204	0.197	Negative correlation favors hypothesis
Unemployment rate	0.235	0.559	Positive correlation favors hypothesis
Population (Overall)	-0.012	0.202	No stated hypothesis
Population (1980-1994)	0.883	0.304	No stated hypothesis
Population (1995-2008)	-0.927	-0.028	No stated hypothesis
Average House Price	-0.567	-0.692	Positive correlation favors hypothesis
Average Condo Price	-0.454	-0.758	Positive correlation favors hypothesis
Person Per Household	-0.813	0.002	Positive correlation favors hypothesis
Vacant Units	0.791	0.003	Positive correlation favors hypothesis
Housing Units	0.795	-0.008	Negative correlation favors hypothesis
HS Dropout Rate	0.446	0.019	Positive correlation favors hypothesis
HS Graduation Rate	-0.759	-0.361	Negative correlation favors hypothesis
HS Daily Attendance	-0.472	-0.212	Negative correlation favors hypothesis
HS Budget	-0.849	-0.232	Negative correlation favors hypothesis
SPD Budget	-0.258	0.110	Negative correlation favors hypothesis
SPD Employees	-0.231	-0.382	Negative correlation favors hypothesis
SPD Sworn Police	0.223	0.106	Negative correlation favors hypothesis
Parks & Rec Budget	0.051	-0.105	Negative correlation favors hypothesis
Library Budget	0.177	0.467	Negative correlation favors hypothesis

Table 3. Linear Regression Correlation Coefficients

Table 4 displays the raw data, per capita data, and percentages for the respected categories of homicides, robbery, assaults and overall violence as outlined in the Thesis. For the headers, P is population, H is homicide, R is robbery, A is assault, V is overall violent acts, and PC is per capita (H/PC translates to homicides per capita).

Year	P	H	H / PC	H% of V	R	R / PC	R% of V	A	A / PC	A% of V	V	V / PC
1980	80438	9	0.112	1.8%	208	2.59	41.6%	283	3.52	56.6%	500	6.22
1981	82700	9	0.109	1.6%	191	2.31	35.1%	344	4.16	63.2%	544	6.58
1982	85300	11	0.129	2.0%	179	2.10	32.8%	356	4.17	65.2%	546	6.40
1983	87600	2	0.023	0.4%	200	2.28	34.8%	372	4.25	64.8%	574	6.55
1984	91100	8	0.088	1.5%	159	1.75	30.1%	362	3.97	68.4%	529	5.81
1985	94600	10	0.106	1.7%	167	1.77	27.8%	424	4.48	70.6%	601	6.35
1986	98300	9	0.092	1.0%	204	2.08	23.1%	672	6.84	75.9%	885	9.00
1987	100800	7	0.069	0.8%	192	1.91	23.1%	633	6.28	76.1%	832	8.25
1988	103900	4	0.039	0.4%	217	2.09	23.0%	722	6.95	76.6%	943	9.08
1989	105400	7	0.066	0.7%	217	2.06	22.7%	734	6.96	76.6%	958	9.09
1990	108777	11	0.101	1.0%	262	2.41	24.9%	778	7.15	74.0%	1051	9.66
1991	111184	7	0.063	0.7%	253	2.28	23.8%	805	7.24	75.6%	1065	9.58
1992	114736	17	0.148	1.5%	388	3.38	34.4%	722	6.29	64.1%	1127	9.82
1993	116686	15	0.129	1.1%	560	4.80	39.5%	844	7.23	59.5%	1419	12.16
1994	120885	24	0.199	1.9%	414	3.43	32.2%	846	7.00	65.9%	1284	10.62
1995	121960	15	0.123	1.0%	494	4.05	33.9%	950	7.79	65.1%	1459	11.96
1996	124972	8	0.064	0.6%	412	3.30	31.6%	884	7.07	67.8%	1304	10.43
1997	127369	18	0.141	1.4%	348	2.73	27.6%	895	7.03	71.0%	1261	9.90
1998	132449	17	0.128	1.5%	440	3.32	39.4%	661	4.99	59.1%	1118	8.44
1999	136797	13	0.095	1.2%	346	2.53	31.6%	737	5.39	67.2%	1096	8.01
2000	142685	18	0.126	1.5%	443	3.11	37.1%	734	5.14	61.4%	1195	8.38
2001	144728	15	0.104	1.2%	399	2.76	32.9%	799	5.52	65.9%	1213	8.38
2002	146659	20	0.136	1.9%	367	2.50	34.0%	692	4.72	64.1%	1079	7.36
2003	148117	19	0.128	1.7%	399	2.69	34.9%	725	4.90	63.4%	1143	7.72
2004	149838	17	0.114	1.5%	452	3.02	39.4%	678	4.53	59.1%	1147	7.66
2005	149626	7	0.047	0.7%	335	2.24	33.9%	645	4.31	65.4%	987	6.60
2006	148707	7	0.047	0.7%	383	2.58	35.7%	683	4.59	63.7%	1073	7.22
2007	148782	14	0.094	1.3%	378	2.54	34.3%	711	4.78	64.5%	1103	7.41
2008	150898	25	0.166	2.5%	334	2.21	33.7%	633	4.20	63.8%	992	6.57
AVERAGE:		12.52	0.103	1.3%	322	2.65	32.2%	666	5.57	66.6%	1001	8.32

Table 4. Thesis Violence Data¹⁹⁸

¹⁹⁸ Thesis violence is based on the amount of homicides, robberies, and assaults occurring in Salinas each year. Population data from the California Department of Finance Web site, <http://www.dof.ca.gov/>. Violence data from the USDOJ Web site, <http://bjsdata.ojp.usdoj.gov/>.

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