

# **Analysis of Traffic Citation Data for the Wichita Police Department (2016-2018)**

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## Executive Summary

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The purpose of this study is to describe the characteristics of citizens who received citations for the years 2016 through 2018 by Wichita Police Officers paying particular attention to the race and ethnic distribution. The analysis describes the citations in terms of the following variables:

- Gender
- Race / ethnicity
- Trends over three years of total citations by quarter
- Citations issued by race / ethnicity
- Most common citations issued
- Trends across all races / ethnicities by total citations by quarter
- Citations given at scene of accident by race
- Total citations issued by zip code
- Total citations issued to Black citizens by zip code
- Breakdown of citations issued in Zip codes with highest ratio of Black citizens citations relative to White citizens

### Key Findings:

- The Wichita Police Department issued 161,108 citations from 2016 through 2018. There was an 18.7 percent reduction in citations written from 2016 and 2018.
- It is encouraging that all racial groups experienced declines in citations over the three years. It potentially would be a red flag, and warrant further inquiry, if citations increased for Black and Hispanic citizens and decreased for Whites. This was not case.
- Over the three years, males received more citations (58.5 percent) than females (41.5 percent). This finding is consistent with national trends.
- Over the three years, White citizens received 59.4 percent, Blacks 20.7 percent, Hispanics 15.6 percent, and Asian, American Indian, and Other races received 4.3 percent of the citations issued.
- The risk of Black citizens receiving a citation in 46 of the 71 common citation charges issued by police officers over the three years is two or more times that of White citizens.
- It cannot be determined or concluded based on the analysis of the citation data alone that there is a presence of racial profiling within Wichita. More in-depth analysis is needed using a variety benchmarking techniques in order to better understand the racial and ethnic disparities observed in the citation data.

## Introduction and Background

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One of the more perplexing issues facing police today is the allegation that they engage in racial profiling of racial minority citizens. Some observers have accused the police of systematically stopping racial minority motorists simply because of the color of their skin, while police deny these allegations. As a result, police agencies have voluntarily begun to collect data on their stop practices, and many states have passed legislation requiring police to collect data on who they stop (Birzer, 2020). Police agencies, in an effort to understand the characteristics of who their officers are issuing citations to and for what, are increasingly conducting periodic analyses of their traffic citation patterns.

National surveys consistently show that minority citizens, especially Black citizens, are much more likely to believe the police engage in racial profiling when compared to White citizens. Over the past 20 years, three studies commissioned by the City of Wichita found that racial and ethnic minorities are overrepresented in vehicle stops and/or citations (see Withrow, 2000, Withrow 2004, Birzer and Beeson, 2014). Over the years, the police department has increasingly met the racial profiling controversy in a proactive manner by releasing data to the public and to researchers as well as enhancing policy and training initiatives. Under the leadership of Chief Gordon Ramsay, a significant amount of community outreach and dialogue has taken place with affected communities and other stakeholders. Moreover, Chief Ramsay has provided an unparalleled amount of transparency that we do not typically find in other police agencies.

On January 28, 2020, the Wichita Police Department (WPD) entered into a service agreement with Dr. Michael Birzer of Wichita State University (WSU) to conduct an independent analysis of the WPD's total traffic citation data for the years 2016 through 2018. Dr. Birzer acquired the services of Thomas Skinner, a Ph.D. candidate and graduate research assistant in the Community Psychology program at WSU to assist with this project.

The primary purpose of the study was to describe the characteristics of citizens who received a citation from a Wichita Police Officer during the three-year period. We were particularly interested in the racial characteristics. The analysis involved using primarily descriptive statistics:

- A Relative Risk Index statistic was calculated on 71 common citation charges that were issued to citizens by Wichita Police Officers. This statistic measures the relative risk or likelihood of getting a certain type of citation for Black citizens vs. White Citizens proportionate to their population.
- The analysis also calculated other descriptive statistics (frequencies and percentages) in order to describe the data and is depicted in tables and figures throughout this report.

## **Preliminary Discussion**

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This report describes the characteristics of citizens receiving traffic citations from Wichita Police Officers between the years of 2016 and 2018. Wichita Chief of Police Gordon Ramsay requested this independent analysis as part of the police department's comprehensive effort to remain proactive in the prevention of biased policing, which, in part, includes studying the department's citation data. In this analysis, the objective was to learn about the characteristics of those receiving traffic citations over the three-year period.

While studying the characteristics of citizens receiving traffic citations gleans invaluable information on the totality of citations, and perhaps traffic enforcement patterns of the police department, we point to some caveats as a precursor to this analysis. Studying traffic citations alone to discern if bias based policing exists within an agency presents a host of challenges, including two overarching problems:

1. Citation data alone cannot demonstrate that a police department is engaging in bias based policing practices, specifically racial profiling. It is simply a description of the characteristics of who received a traffic citation. It is impossible to separate all other factors in a descriptive analysis.
2. The analysis of citation data alone excludes those drivers stopped by the police that did not receive a citation. This information would be informative in regards to studying police stop practices in general. For example, those motorists stopped by the police that did not receive a citation might fall into two categories: (1) motorists who could have received a citation but did not, and (2) those motorists who possibly should not have subjected to a stop in the first place (Fridell, 2004). Of course, the objective of understanding these two categories of drivers, albeit challenging, is to discern if an officer selected to stop them because of their race or ethnicity. This is even more so challenging because of the multifaceted and situational nature of each stop, along with the discretionary nature of police work concerning motor vehicle stops and the issuance of citations.

## **Benchmarks**

It is also important to point out that establishing a valid benchmark is crucial in identifying both disparate and racially discriminatory police practices. A benchmark is an estimate of the demographics (i.e., race and ethnicity) of the drivers at risk or available to be stopped by the police. Suppose it was determined that 20 percent of citizens stopped by the police are racial and ethnic minorities. What should 20 percent be compared to? Moreover, what percentage would indicate discriminatory police practices? This question is at the center of benchmarking (Fridell, 2004).

In the past, it was common for researchers to use official population census information from the U.S. Census as a benchmark. Census benchmarking involves comparing the citation data to the demographic profile of the residents of the community as measured by the U.S. Census. For example, let us say it was determined that 20 percent of citations issued during a specific period were to Black

citizens. Suppose that a check of the U.S. Census data for the community revealed the population of Black citizens is 12 percent. Twelve percent is the benchmark for comparison purposes. When these two racial distributions are different, there is a tendency to assume there is racially biased policing. This would be an erroneous assumption and it is difficult to draw a definitive conclusion regarding racially biased policing. Universally, police researchers recognize that population benchmarks are the *least valid benchmark* and pose challenges to drawing any meaningful conclusions.

*In our analysis of the Wichita Police Department citation data, we generally avoid using population benchmarks and only use them sparingly.* Again, we warn about the limitations in drawing conclusions about racially biased policing based on comparing demographic characteristics of citizens receiving traffic citations to U.S. Census data. In summary, these limitations center on the following problems:

- Census data does not take into account the number or demographics of actual drivers or traffic violators in the community. This information would yield a more effective benchmark.
- This data does not provide the number of people that drive through a jurisdiction and do not actually live there.
- Aggregate U.S. Census data do not reflect racial or ethnic population density found in many communities.
- This data does not account for different police deployment strategies throughout the community. Some areas of the community experience disproportionately higher crime rates when compared to others, which may lead to increased police observation and deployment in those areas, and likely result in more car stops and police – citizen contacts.
- The historic underreporting into the U.S. Census by some racial and ethnic minorities may skew estimates (Sullivan, 2020).

## **Better Benchmark Estimates**

There are benchmarks that offer better estimates compared to population estimates. We briefly mention three such approaches below. If the Wichita Police Department desires to discuss these benchmarking methods further, or arrange for a potential study using these benchmarks, please contact Dr. Michael Birzer in the School of Criminal Justice at WSU.

Field Observations: This approach involves a research team carefully carrying out a study where researchers observe traffic at randomly selected locations and times for a given period. During these observations, researchers record variables such as type of car, gender, race, and ethnicity of drivers. In essence, this approach develops the benchmark or for comparison to police stop data. This approach provides a more accurate estimate of the motoring public, especially in areas of interest. Researchers have successfully carried out several studies making use of field observations. Field



observations can also offer more accuracy in accounting for motorists that do not live in a specific area but drive in and out of those areas.

Traffic Accident Data: Some researchers have made use of traffic accident data to establish a benchmark estimate for comparison purposes. The idea behind traffic accident data is the review of the characteristics (gender, age, race, and ethnicity) of not-at-fault drivers over the course of time, which may yield a better estimate of the motoring public. The thought is that not-at-fault drivers in auto accidents represent random events. That is, they do not set out to get involved in an accident. One disadvantage of this type of analysis is that some accidents are not reported to police.

Internal Benchmarking: This method is promising. It offers social science credibility, practical utility, and community and political accountability. The advantage of this data-driven benchmark is that a police agency can tailor it to the specific criteria deemed important. Professor Samuel Walker at the University of Nebraska-Omaha proposed this benchmark as an early warning approach in 2001. Perfected through the years, it has grown in use among law enforcement agencies. In essence, this benchmarking approach compares like situated police officers on selected criteria of performance (e.g., stops based on population/beat demographics, complaints, use of force incidents, enforcement patterns, etc.). This approach can go beyond racial profiling and address other police operational and/or performance issues including periodic review and interventions to resolve such issues.



**A benchmark is an estimate of the demographics (i.e., race and ethnicity) of the drivers at risk or available to be stopped by the police.**

## Data and Analysis Methods

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The Wichita Police Department released three years of citation data 2016 through 2018 to the researchers for analysis. The data was evaluated using three different programs: *Excel*, *Jamovi*, and *Tableau*. The statistics analyzed fall under two major branches:

Descriptive Statistics: The analysis included descriptive statistics in the form of raw numbers and percentages depicted in figures throughout the report.

Relative Risk Index (RRI) Statistic: We calculated RRI comparing White and Black citizens on 71 different citation charges. These 71 different traffic charges were those that were the most common (issued to motorists at least 100 or more times). The RRI measures give an indication of the strength of association. It measures the standardized rate of occurrence of a specific event in a control population (i.e., White citizens) and compares it to the rate of occurrence in other populations (i.e., Black citizens). If the statistic equals 1.0 or is close to 1.0, it suggests no or little difference in the rate of occurrence. An RRI score greater than 1.0 suggests an increased risk of an outcome in the exposed group. It is also possible for the RRI ratio to be less than 1.0, which is associated with a reduction in risk. For example, if the RRI equals .5, then the rate of occurrence in the comparison group is only half of that of the control group.

For a more technical discussion of some of the challenges in racial profiling research in establishing a cause and effect relationship, see the appendix.

## Results of All Citations (N = 161,108)

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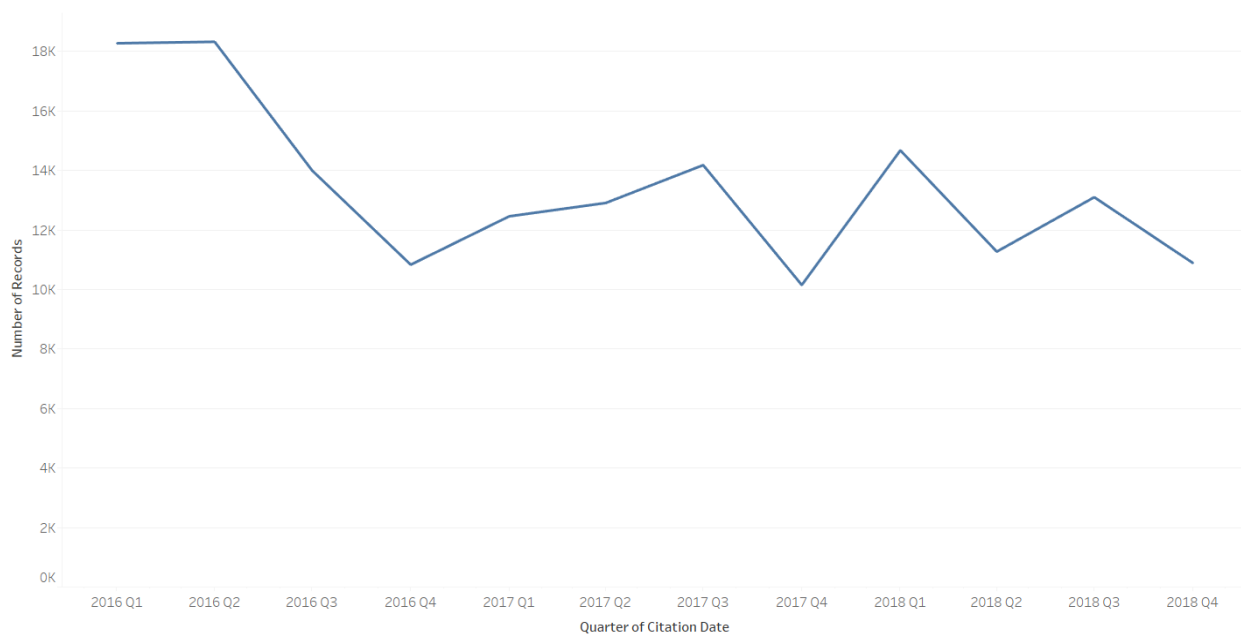
Between 2016 through 2018, there was an 18.7 percent decline in citations issued to motorists by the Wichita Police Department as shown in Figure 1.

*Figure 1. Breakdown of total number of citations over 3 years (N=161,108).*

<b>Year of Citation Data</b>	<b>Number of Citations</b>
2016	61,446
2017	49,710
2018	49,952

We generally observe decreases in traffic citations when examining traffic citations quarterly. Over the three years, there is a slight increase in quarter 3 of 2017 followed by a sharp decrease in quarter 4 of 2017. Again, a slight increase in quarters one and three of 2018 followed by a slight decrease in quarters two and four of 2018. The slight up and down fluctuations might be due to a number of factors including weather, directed traffic enforcement, or police deployment patterns.

*Figure 2. Trend over the last 3 years of total citations by quarter (N=161,108).*



## Citation Data by Race and Ethnicity

Figure 3 shows the racial and ethnic distributions of persons receiving traffic citations over the three years. We caution the reader to not compare citation data reported here to official U.S. Census estimates for the City of Wichita because it does not reflect the actual driving population (those at risk of being stopped), and for a plethora of other reasons previously discussed in the “Preliminary Discussion” section of this report.

*Figure 3. Breakdown of total citations by race and ethnicity (N=161,108).*

Race	Citation Date		
	2016	2017	2018
White	37,075	29,045	29,590
Black	12,082	10,819	10,441
Hispanic	9,578	7,881	7,739
Asian	1,847	1,270	1,328
Other	622	501	606
American Indian	242	194	248

Race/Ethnicity	Citations	% of Total
White	95,710	59.4 %
Black	33,342	20.7 %
Hispanic	25,198	15.6 %
Asian	4,445	2.8 %
Other	1,729	1.1 %
Am. Indian	684	0.4 %
<b>TOTAL</b>	<b>161,108</b>	<b>100%</b>

## Citations by Gender

When comparing gender for all three years, males received more traffic citations than females. In all, males received 58.5 percent of the citations compared to 41.5 percent of females. The fact that males received more citations than females is not surprising. National studies consistently find this trend - males receive more traffic tickets when compared to females.

*Figure 4. Total Number of citations by gender (N = 161,007).*

Sex	
Male	94,202
Female	66,805

When comparing specifically by year, males received more citations when compared to females. For example, in 2016 males received 59 percent and females 41 percent of traffic citations. In 2017, males received 59 percent and females 41 percent of traffic citations. In 2018, males received 58 percent and females 42 percent of traffic citations.

Figure 5. Citations by gender per year (N = 161,007).

<b>Sex</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Totals</b>
Male	36,045	29,355	28,802	94,202
Female	25,370	20,329	21,106	66,805
<b>Totals</b>	<b>61,415</b>	<b>49,664</b>	<b>49,908</b>	<b>161,007</b>

## Citations by Gender and Race

Examining citations by gender and race for the years 2016 through 2018 shows that White males received 35 percent of citations, Black males 13 percent, and Hispanic males 10 percent of citations. White females received 27 percent of citations, Black females nine percent, and Hispanic females six percent. Asian, American Indian, and Other race categories are not included in figure 6. These groups only accounted for approximately five percent of the total citations.

Figure 6. Citations breakdown by gender and race (n = 154,245).

<b>Sex</b>	<b>Race</b>	
<b>Male</b>	White	54,416
	Black	20,195
	Hispanic	15,618
<b>Female</b>	White	41,289
	Black	13,147
	Hispanic	9,580

## Most Common Citations Issued

In the following figure, we provide the breakdown of the most common citations issued. Anything less than 1,000 citations was left off.

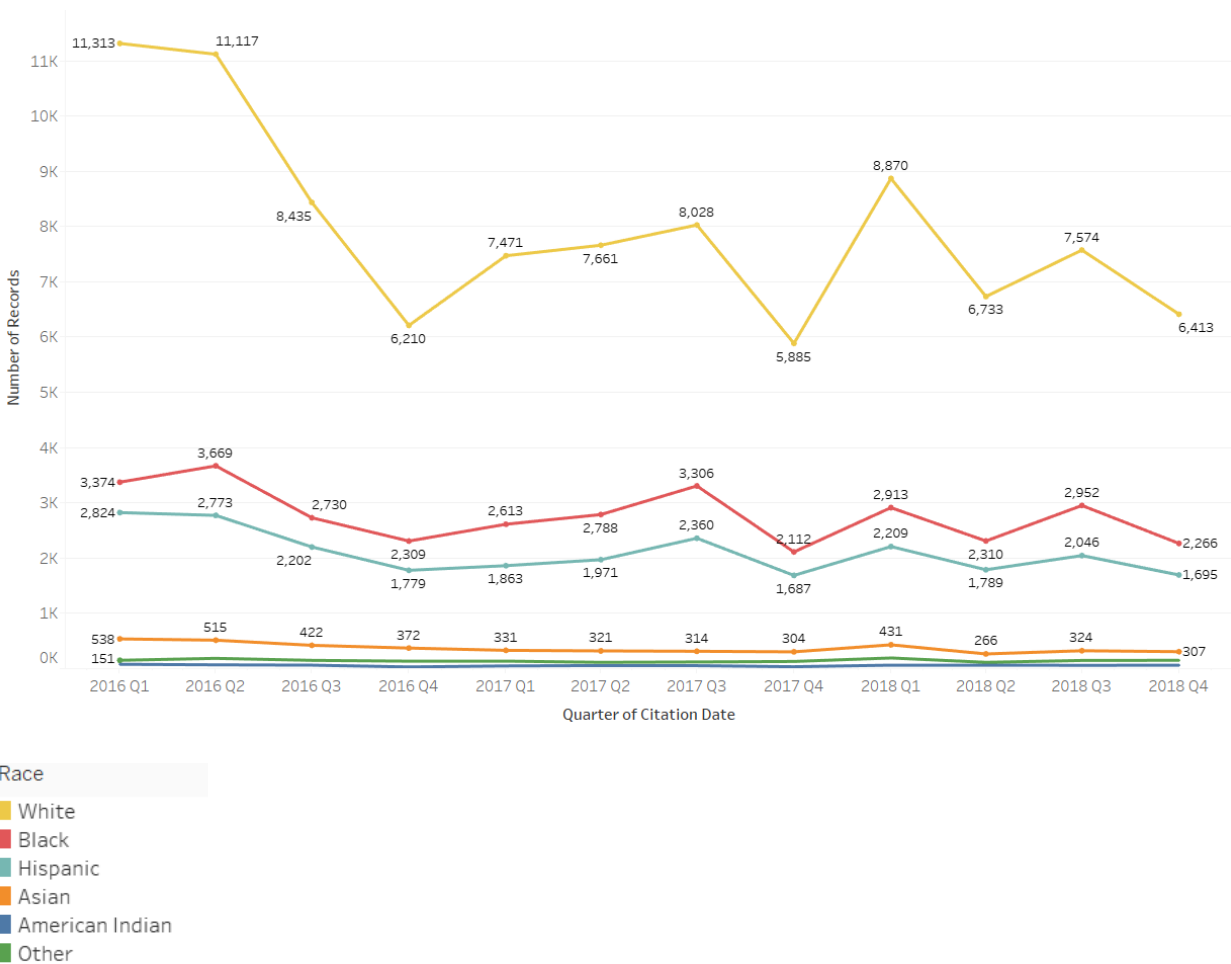
*Figure 7. Most common citations issued.*

Citation	Number	% of Total
SPEED OVER LIMIT	39919	24.8 %
NO PROOF OF INSURANCE	14366	8.9 %
NO DRIVER'S LICENSE	10284	6.4 %
DR ON SUSP/REV/CANC/FRAUD DL	9908	6.1 %
SEAT BELT REQUIRED 18 OR OLDER	9101	5.6 %
SPEEDING IN A CONSTRUCTION AREA	8700	5.4 %
INATTENTIVE DRIVING	7986	5.0 %
ILLEGAL TAG-EXPIRED	7502	4.7 %
SPEED-30 MPH	7364	4.6 %
RUN RED LIGHT	3326	2.1 %
RUN STOP SIGN	3208	2.0 %
DISOBEY NO TURN SIGN	2680	1.7 %
DEFECTIVE HEADLIGHT	2657	1.6 %
YIELD ROW-LEFT TURN	2151	1.3 %
SPEED EXCESS MAXIMUM LIMIT	1536	1.0 %
KNOWINGLY DRIVE W/O INSURANCE	1527	0.9 %
SIGNAL TURN 100 FEET	1502	0.9 %
IMPROPER RIGHT TURN	1415	0.9 %
TAG ILLUMINATED	1345	0.8 %
ILLEGAL TAG	1260	0.8 %
LIGHTS REQUIRED CERTAIN HOURS	1229	0.8 %
IMPROPER LEFT TURN	1144	0.7 %
FAIL TO SIGNAL TURN	1120	0.7 %
DEFECTIVE TAILLIGHT	1086	0.7 %

## Citation Trends across All Races

Figure 8 shows trends across all races and ethnicities for all citations over the three years broken down by quarters. Here, an interesting trend emerges. Citations across all race and ethnic groups appear to decrease *consistently* over the three years. It would call for further inquiry if, for example, citations issued to Whites citizens decreased while at the same time increased for racial and ethnic minority groups. We could infer that there were policies that target minority groups specifically. If that were the case, we would expect the lines to not move in a parallel way. However, we caution that this analysis is of citation data only. It does not report stops of all motor vehicles, and in particular, those stops that did not result in a traffic citation. The consistent decreases over three years may be the result of numerous factors including policy changes within the Wichita Police Department, evidence-based approaches to traffic enforcement, police officer discretion in whether to write a citation or issue a verbal warning, and so forth.

Figure 8. Citation trends across all races.



Citations are depicted in figures 9, 10, and 11, relative to their decreases and increases by quarter over the three years. This presents a slightly different view than depicted in the trend line in figure 8. Again, the decreases and increases of citations by quarter are for the most part consistent across all racial groups. There were only three quarters where this differed slightly. For example, quarter 1 - 2016 shows an increase in citations to Black motorists while citations to White and Hispanic decrease. Quarter 3, 2017 shows a decrease in citations to Black and Hispanic motorists while citations to White motorists increased. Quarter 4, 2017 shows a decrease in citations to White motorists while citations to Black and Hispanic motorists increased. We did not include Asian, American Indian, and Other race category in these quarterly data reports due to their relative low numbers.

We reiterate again, if we would have seen greater inconsistencies in the increases and decreases among these three racial and ethnic groups in terms of the number of citations they were issued, that may be a red flag warranting further inquiry. That does not appear to be the case here when examining 12 quarters of citation data over three years.

*Figure 9. Citations decrease/increase by Quarter & by Race/ethnicity 2016.  
(- = decrease / + = increase)*

	<b>White</b>	<b>Black</b>	<b>Hispanic</b>
Quarter 1	-196	+295	-51
Quarter 2	-2,682	-939	-571
Quarter 3	-2,295	-421	-423
Quarter 4	+1,261	+304	+84

*Figure 10. Citations decrease/increase by Quarter & by Race/ethnicity 2017.  
(- = decrease / + = increase)*

	<b>White</b>	<b>Black</b>	<b>Hispanic</b>
Quarter 1	+1,261	+304	+108
Quarter 2	+190	+518	+389
Quarter 3	+367	-1194	-673
Quarter 4	-2,143	+801	+522

*Figure 11. Citations decrease/increase by Quarter & by Race/ethnicity 2018.  
(- = decrease / + = increase)*

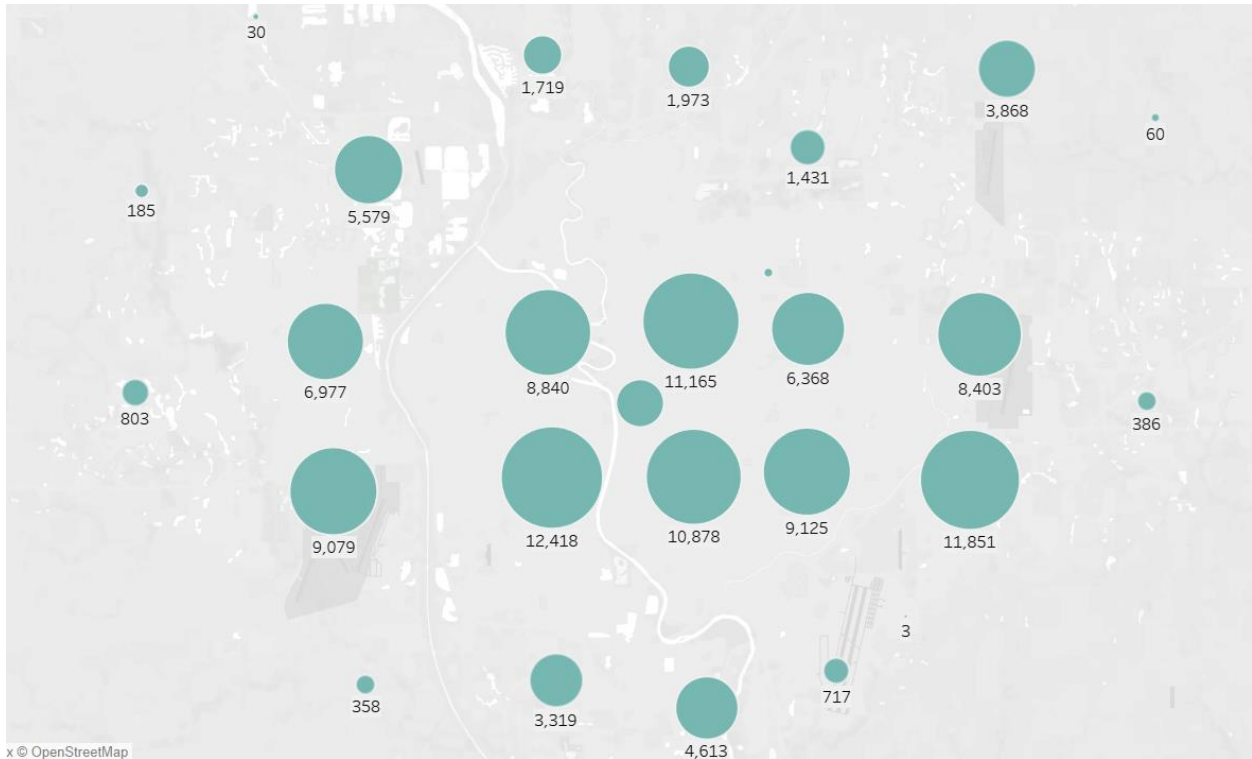
	<b>White</b>	<b>Black</b>	<b>Hispanic</b>
Quarter 1	+2,985	+801	+522
Quarter 2	-2,137	-603	-101
Quarter 3	+841	+642	+264
Quarter 4	-1,161	-686	-351



## Citations by Zip Codes

Figure 12 shows the general spatial distributions of citations issued across zip codes in the City of Wichita. We present this as a visual cluster map of sorts to make better sense of where police officers wrote the most citations over the three-year period. As you move from the bottom to the top of the figure, you would be moving from south to north. Likewise, from left to right of the figure represents moving across Wichita from west to east.

Figure 12. Total Citations by Zip Code.      ↑ **North** ↑



## Citations Issued at Accident

In this analysis, we also sorted the citation data to citations specifically given as part of a motor vehicle accident investigation. Figure 13 shows the racial/ethnic characteristics of motorists who received a citation as the result of 15,846 motor vehicle accidents.

Figure 13. Citations issued at vehicle accidents 2016-2018.

Race	Number of Accidents	% of Total
White	10,277	64.9%
Hispanic	2,402	15.2%
Black	2,244	14.2%
Asian	525	3.3%
Other	321	2.0%
American Indian	77	0.5%
Total	15,846	100.0%

## Unique Citations

Because the organization of the data is in the form of total citations, and not *unique* citations given, we sorted the data in order to examine *unique* citations. *Unique* citations are those stops where an officer issued a single citation, so multiple citations are not counted. This is important because in cases of some multiple citations, passengers were also issued citations. Out of the total 161,108 citations, 121,389 were unique citations. Therefore, 24.6 percent of traffic citations in Wichita during the three-year period involved the writing of more than one citation at the stop. Across all three years in regards to unique citations, White citizens received 64.1 percent (77,834), Black citizens received 17.4 percent (21,166), Hispanic citizens received 13.7 percent (16,641), Asian citizens received 3.1 percent (3,850), those listed as “other race/ethnicity” received 1.1 percent (1,393), and American Indians received 0.5% (505).

Figure 14. Unique Citations (N=121,389).

Race	Date		
	2016	2017	2018
White	30,720	23,185	23,929
Black	7,952	6,737	6,477
Hispanic	6,397	5,110	5,134
Asian	1,586	1,111	1,153
Other	497	406	490
American Indian	190	137	178

## **Citations Issued to Black Citizens by Zip Code**

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Next, we examine stops in Zip codes specifically paying attention to where citizens received citations by race (Figure 15). What we see is that Black citizens get a disproportionate (relative to the population) amount of tickets relative to Whites in certain Zip codes in the near East side. As you move from the bottom to the top of the figure, you would be moving from south to north. Likewise, from left to right of the figure represents moving across Wichita from west to east.

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***We caution the reader as discussed earlier in this report that a population benchmark (U.S. Census Data) as used in the following analysis of citations by zip codes is limited in terms of validity. Population benchmarks are not valid estimates of the motoring public and should not be considered conclusive.***

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Figure 15. Citations Given to Black Citizens by Zip Codes. ↑ North ↑



Race

- American Indian
- Asian
- Black
- Hispanic
- White

ZIP	Race						Other
	White	Black	Hispanic	Asian	American Indian		
67213	7,243	1,335	1,552	314	33	91	
67207	7,232	1,813	909	751	34	229	
67209	6,597	694	764	210	29	68	
67206	5,911	952	545	336	46	142	
67211	5,151	1,657	1,301	259	26	88	
67212	5,013	413	660	124	23	59	
67205	4,339	265	560	149	18	57	
67218	4,295	1,834	978	325	29	86	
67203	4,271	701	1,921	104	19	58	
67214	4,044	2,454	1,539	172	41	83	
67208	2,876	1,775	445	156	29	72	
67216	2,773	483	466	140	12	38	
67226	2,645	498	221	156	26	68	
67217	2,081	238	345	89	4	16	
67202	1,362	330	299	51	13	27	
67219	894	349	245	56	9	20	
67204	770	102	462	32	11	19	
67220	710	340	87	58	18	22	
67235	670	16	50	13	1	6	

Figure 16 depicts the six Zip codes with the highest ratio of citation stops of Black citizens relative to Whites. Yellow highlighted cells are when the proportion of citation stops exceeds the proportion of the population. Green highlighted cells are when the proportion of citation stops falls short of the proportion of the population. This difference is likely due to the fact that these are the drivers driving in the area, not just ones that live there.

Figure 16. ZIP Codes with Highest Ratio of Citation Stops of Black Citizens.

ZIP	Black stops	% of stops	% of population	Hispanic stops	% of stops	% of population	White stops	% of stops	% of population	Total
67211	1657	19.5%	9.9%	1301	15.3%	26.4%	5151	60.7%	51.9%	8482
67214	2454	29.4%	44.7%	1539	18.5%	25.6%	4044	48.5%	21.4%	8333
67218	1834	24.3%	18.2%	978	13.0%	20.3%	4295	56.9%	52.4%	7547
67208	1775	33.2%	28.1%	445	8.3%	7.8%	2876	53.7%	55.3%	5353
67219	349	22.2%	29.6%	245	15.6%	16.4%	894	56.8%	46.1%	1573
67220	340	27.5%	20.9%	87	7.0%	9.8%	710	57.5%	51.4%	1235

## Relative Risk of Receiving Citation by Black and White Race

Next, we examine the citations and sort them by Relative Risk Index (RRI). Recall that the RRI is a statistic that measures the relative risk of getting a certain type of citation. In this analysis, researchers calculated the RRI for Black citizens compared to White citizens on 71 different traffic citation types issued by Wichita Police Officers. We used Black citizens as the “at risk” population and White citizens are the “control group.” If the RRI calculation equals one or close to one, it means that Blacks and Whites are receiving citation numbers proportionate to their population. Put another way, if the RRI is one, the risk for Blacks and Whites is comparable. If the RRI is less than one, it means the risk is lower for Black citizens compared to White citizens. If the RRI is greater than one, it means that the risk is greater for Black citizens when compared to White citizens. We removed cases under 100 citations because very small sample sizes would make generalizations impossible.

Figure 17. Relative Risk Index by Type of Violation: Black & White Comparison. n=71.

Citation	Black	Hispanic	White	Total Number	RRI
CHILD RESTRAINT - UNDER 4 YEARS	139	87	39	267	23.95334
TRANSPORT OPEN ALCOHOLIC BEVERAGES	282	150	146	588	12.98112
CHILD RESTRAINT 4-7 YEARS	85	64	64	223	8.925957
CONCEALED TAG	60	23	51	135	7.90673
DISPLAY ALTERED TAG	453	135	388	992	7.846615
DR ON SUSP/REV/CANC/FRAUD DL	4104	1599	4101	9908	6.725637
DIM LTS TO ONCOMING VEHICLE	57	20	57	139	6.720721
PED USE MARKED CROSSWALK/LANE	97	17	101	220	6.454554

<b>Citation</b>	<b>Black</b>	<b>Hispanic</b>	<b>White</b>	<b>Total Number</b>	<b>RRI</b>
LIGHTS REQUIRED SUNSET TO SUNRISE	40	18	44	108	6.109746
LIABILITY INSURANCE REQUIRED	260	132	287	695	6.088458
PEDESTRIAN USE SIDEWALK	77	14	93	187	5.564468
NO VALID DRIVER'S LICENSE IN POSSESSION	134	164	162	480	5.559115
EVADE/ELUDE POLICE	52	23	63	139	5.547262
KNOWINGLY DRIVE W/O INSURANCE	527	286	691	1527	5.125644
NO DRIVER'S LICENSE	2702	3646	3565	10284	5.093797
HIT AND RUN-ATTENDED VEHICLE	89	60	133	290	4.497324
ILLEGAL TAG	420	189	631	1260	4.47338
TURN SIGNALS REQUIRED	50	16	82	150	4.098
DISPLAY TAG IN PROPER PLACE	67	37	115	224	3.91555
LIGHTS REQUIRED CERTAIN HOURS	338	249	584	1229	3.889732
SIGNAL TURN 100 FEET	453	228	784	1502	3.883274
BIKE LITES CERTAIN HOURS	100	40	175	322	3.840412
DEFECTIVE TAILLIGHT	312	186	556	1086	3.77134
WALK ON DON'T WALK	50	9	92	155	3.652566
NO PROOF OF INSURANCE	3792	2561	7524	14366	3.387157
DEFECTIVE HEADLIGHT	676	449	1422	2657	3.194942
TAG ILLUMINATED	332	253	713	1345	3.129424
ILLEGAL TAG-EXPIRED	2011	917	4328	7502	3.122775
RECKLESS DRIVING	31	27	67	128	3.109587
DRIVE RT SIDE/4 LANES	41	27	90	169	3.061662
HIT AND RUN-FIXED OBJECT	26	28	60	117	2.912312
VIOLATE DL RESTRICTION	118	106	273	511	2.904927
DEFECTIVE BRAKE LIGHTS	212	166	492	913	2.89592
SEAT BELT REQ 14 THRU 17 YEARS OLD	46	73	108	239	2.862529
FAIL TO SIGNAL TURN	280	141	658	1120	2.859881
BIKE-OBSERVE TRAFFIC REGULATIONS	48	19	121	190	2.666071
RUN RED LIGHT-RT TURN	41	27	107	192	2.575229
INVALID ORDINANCE	65	44	175	304	2.496268
WINDSHIELD CRACKED	76	43	212	333	2.409315
DRIVE WRONG WAY/ONE WAY	54	41	155	273	2.341412
IMPROPER RIGHT TURN	298	153	880	1415	2.27588
UNSAFE LANE CHANGE	186	139	571	962	2.189237
RUN STOP SIGN	570	665	1799	3208	2.129411
HIT AND RUN-PARKED VEHICLE	21	28	68	123	2.075517
UNSAFE BACKING	41	36	135	227	2.041108
SEAT BELT REQUIRED 18 OR OLDER	1741	1294	5821	9101	2.010097
DRIVE RT SIDE/2 LANE	17	31	58	113	1.969866

Citation	Black	Hispanic	White	Total Number	RRI
DISOBEY TRAFFIC CONTROL DEVICE	91	101	320	545	1.911205
YIELD ROW-STOP SIGN	120	148	429	746	1.879922
YROW TO CAR ON RIGHT	18	12	65	102	1.861123
CARELESS DRIVING-ENGR	84	107	312	528	1.809425
RUN RED LIGHT	552	497	2085	3326	1.779299
DISOBEY NO TURN SIGN	429	349	1720	2680	1.676273
IMPROPER LEFT TURN	189	131	769	1144	1.651777
APPROACH OF EMERGENCY VEHICLE - YIELD RIGHT OF WAY	27	28	112	183	1.620174
SPEED-30 MPH	1099	1397	4573	7364	1.615148
EMERGING FROM ALLEY, DRIVEWAY, BUILDING	126	77	528	761	1.603808
FAIL TO REDUCE SPEED	32	37	141	224	1.52527
PED-SOLICIT EMPLOYMENT, BUSINESS	30	1	133	170	1.515952
SPEED EXCESS MAXIMUM LIMIT	226	167	1064	1536	1.427522
STOP-SCHOOL BUS	22	20	104	159	1.421691
SPEED-30 MPH ZONE	95	79	452	655	1.412541
FAIL TO REDUCE SPEED-HAZARDS	18	34	86	147	1.406662
EXHIBITION OF SPEED	14	24	69	114	1.363624
CARELESS DRIVING-DRIVER ACTION	47	46	234	343	1.349888
SPEED OVER LIMIT	5362	4572	28113	39919	1.281845
SPEEDING IN A CONSTRUCTION AREA	1122	781	6148	8700	1.226521
FOLLOW TOO CLOSE	97	100	532	772	1.225395
YIELD ROW-LEFT TURN	249	291	1436	2151	1.165362
INATTENTIVE DRIVING	924	1004	5596	7986	1.109712
TEXTING WHILE DRIVING	26	33	252	326	0.693408

Taking into account the RRI calculations, the top three citations with the greatest risk disparity when comparing Black and White citizens are (1) *Child Restraint – Under 4 years old*, (2) *Transport Open Alcoholic Beverages*, and (3) *Child Restraint 4-7 years old*. The risk of Black motorists receiving a traffic citation for *Child Restraint – Under 4 years old* is 24 times that of White citizens. The risk of Black citizens receiving a traffic citation for *Transport Alcoholic Container* is 13 times that of White citizens. The risk of Black citizens receiving a traffic citation for *Child Restraint 4-7 Years Old* is 9 times that of White citizens. Understanding the disparity within this traffic citation data and the Relative Risk Index calculations presented in Figure 16 above is challenging, in part, for four overarching reasons:

1. As we have underscored in this report, U.S. Census data has limited validity when used as a benchmark estimate. In short, it is not an accurate estimate of the motoring public or for that matter the race of the motoring public across different times and locations. Many researchers in the past relied on population-based benchmarks. However, as this research has evolved in recent years population benchmarks have been largely discredited due to their measurement error.
2. Research has generally found that distributions of traffic citations, as well as offending, are not dispersed equally among population groups or across geographical police beat areas. For example, take the zip code areas presented in Figure 15 above (67211, 67218, 67208, and 67220). It is within these zip codes where racial minority citizens, especially Black citizens were issued traffic citations at higher rates. Some neighborhoods within several of these zip codes account for disproportionately high rates of crime. We could infer that in these areas, police may show a greater presence, stop more cars, have more contact with citizens, write more citations, and that these neighborhoods may indeed be under closer police observation when compared to areas with lower crime rates. Research with law enforcement officers across Kansas has verified that this is a strategy commonly used by officers in high crime areas (Birzer, 2014).
3. Social and economic disadvantages among many racial and ethnic minorities may factor into why they receive a disproportionate number of several types of citations. For example, A Child Restraint violation, which demonstrated the most disparity among Black and White citizens in this study, is a primary violation in which a law enforcement officer can stop a motorist when a child is not sitting in such a device. This is a violation often easily visible to a police officer. However, it is possible that socioeconomic factors (i.e., poverty) play a role in the disparities found with some Black citizens concerning child restraint citations. That is, some people can afford them and some cannot. Research has pointed out that when racial minority citizens have low cost access to child restraint devices their use goes up (Hallmark, Mueller, & Veneziano, 2004; Samuels, Foxx, & Owen, 2009).

In General, studies in Kansas found that Child Restraint violations *do not fit* the types of violations racial minority citizens describe police stopping them as a pre-text because of their race (Birzer, 2013a, 2013b & 2014). In part, these studies found the types of traffic violations racial minority citizens believe police use as pre-text to stop them when race is the underlying reason are *defective taillight, defective brake lights, cracked windshield, and fail to signal 100 feet before turn*. In this citation study, the risk for Black citizens to receive a citation in these situations is 3.7 times more likely (defective taillight), 2.8 times more likely (defective brake lights), 2.4 times more likely (cracked windshield), and 3.8 times more likely (fail to signal 100 feet before turn) than that of White citizens.



4. We have no way of knowing based on citation data alone if an officer harbors implicit biases about racial or ethnic groups, or that officers act on the biases explicitly by writing more citations to racial and ethnic minorities. This cannot be determined based on mere descriptive statistics.

It is important to keep in mind that just because one group has a higher calculated RRI score than another group's does not confirm that bias based policing practices or racial profiling exist. The RRI is a descriptive measure of disparity, not a measure of discrimination.

## Conclusions

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We commend the Wichita Police Department for their continued response to citizen concerns about racial profiling. This analysis will assist the police department in better understanding the characteristics of motorists receiving traffic citations from 2016 through 2018 along with the frequencies and types of traffic citation charges issued to motorists. We present our conclusions and recommendations below:

1. The Wichita Police Department issued 161,108 citations from 2016 through 2018. There was an 18.7 percent reduction in citations written from 2016 to 2018.
2. It is encouraging that all racial groups experienced declines in citations over the three years. It potentially would be a red flag, and warrant further research, if citations increased for Black and Hispanic citizens and decreased for Whites. This was not case.
3. Over the three years, males received more citations (58.5 percent) than females (41.5 percent). This finding is not surprising.
4. Over the three years, White citizens received 59.4 percent, Blacks 20.7 percent, Hispanic 15.6 percent, and Asian, American Indian and Other Race received 4.3 percent of the citations issued.
5. The risk of Black citizens receiving a citation in 46 of the 71 citation charges is two or more times that of White citizens. Additional in-depth research needs to be conducted in order to further evaluate these risk disparities. We are sorely limited in drawing meaningful conclusions based on citation data alone.
6. Wichita Police Department Policy 903 defines racial or other biased-based policing as:

“The unreasonable use of race, ethnicity, national origin, gender or religion by a law enforcement officer in deciding to initiate an enforcement action. It is not racial or other biased-based policing when race, ethnicity, national origin, gender or religion is used in combination with other identifying factors as part of a specific individual description to initiate an enforcement action.”

We cannot determine or conclude based on the analysis of the citation data the presence or extent of racial profiling within the Wichita Police Department. More in-depth analysis is needed using a variety of benchmarking and observational techniques in order to better understand the racial and ethnic disparities observed in the citation data.

## **Recommendations**

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1. The Wichita Police Department is encouraged to consider commissioning a more in-depth analysis of their stop practices using a variety of observational and benchmarking techniques.
2. The results of a more sophisticated study will better equip the police department and community stakeholders in understanding stop practices, and in collaboration, identify and mediate potential differential enforcement practices in affected neighborhoods.
3. Additional studies can also go a long way to minimize perceptions of biased based policing. The mere perception of disparities in citations and/or stops can be just as detrimental to a police agency as the actual disparity itself.

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# Appendix

## Appendix 1 of 1

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### **Establishing Causation in Racial Profiling Research: A Technical Note**

The underlying objective in racial profiling research is in part to determine whether a law enforcement agency or officers' practices (i.e., stops) are discriminatory and single out citizens solely based on their race or ethnicity. As we discussed in the "Preliminary Discussion" section of this report, making this determination from a social science research position is fraught with challenges. Recall that a benchmark is a tool used by researchers in their work to develop a racial and ethnic profile of the people who should be at risk of being stopped by the police. Of course, this assumes no bias is involved in their risk of being stopped by police authorities. In practice, no single benchmarking technique exists that provides a perfect and accurate estimate to compare police stop data which potentially could shed light on the presence of discriminatory police stop practices. All benchmark techniques have some measurement error, some more than others. Researchers try to minimize the error and in many cases control for it. As research in this area has evolved, so too has the research methods.

Some benchmarks (i.e., observational or traffic violator surveys) make it possible to reduce measurement error and more accurately reflect the race and ethnicity of the motoring public in selected geographical areas of interest. Thus, they allow the researcher to develop their own benchmark for comparison of stop data. Professor John Lamberth proposed and carried out this benchmarking technique in several studies in the 1990s. Most notable was his work on the New Jersey Turnpike study in the 1990s (Lamberth, 1996, 2010).

The ideal research situation is when researchers have the appropriate data, meeting the appropriate level of measurement. This allows researchers to measure variables in the data using powerful inferential statistics.

### **Causal Relationships**

Racial profiling researchers when possible test for a causal relationship. Here the research asks the question: Does a motorist's race or ethnicity have an impact on a police officer's decision to stop them? Investigating for causal relationships is highly desired in racial profiling research as with other police research. If data can be analyzed meeting statistical assumptions, with minimal measurement error, researchers produce evidence-based findings, and these findings are highly desired in police operations.

In racial profiling research, researchers ask, does the variable X (the race/ethnicity of a motorist) cause the variable Y (police officer decision to stop motorists)? In order to determine a causal relationship between X and Y, researchers generally require at least three kinds of evidence, (1) temporal sequencing of events, (2) correlation of the cause and effect, and (3) ruling out all other plausible explanations in order to ensure that the other causes do not explain the effect.

- **Rule 1:** The events must show a temporal sequencing (X happens before Y). Temporal sequencing establishes that the cause immediately precedes the effect. For example, being a racial or ethnic minority must precede its effect - stopped by police authorities. This rule easily established. A racial minority citizen is a racial minority before being stopped by police authorities. In some cases, the police officer knows the race of the motorist prior to a stop, but in some cases, particularly under the “veil of darkness” the officer may not know (Grogger & Ridgeway, 2006).
- **Rule 2:** The researcher must establish a correlation of the cause and effect (when X occurs, then Y occurs). For example, a police officer is more likely to stop a motorist because he or she is Black, all other factors weighted equally. That is to say when White, Black, and Hispanic motorists are at risk of being stopped for the same violations and the officer decides to stop only the Black citizens in a consistent pattern. This rule is difficult to meet in racial profiling research due to the multifaceted situational variables in police decision making. Because most racial profiling studies find that racial minorities are overrepresented in stops based on population estimates from the U.S. Census, it may be tempting to claim that this establishes correlation. Responsible social scientists would be a bit more careful in regards to making such a claim. It is important to remember that correlation does not imply causation.
- **Rule 3:** The researcher must rule out other explanations. It must be determined that there are not other variables that eliminate the variation in X’s association with Y. In essence, the researcher needs to rule out that there is nothing else accounting for the relationship between the “police officer’s decision to stop” and a “motorist’s race or ethnicity.” This is especially difficult to do in racial profiling research. Again, because of the situational variables in police work, along with wide discretion officers have, it may be virtually impossible to eliminate all of the all other possible influences.

Causation		
Temporal sequencing X occurs before Y	The events must be correlated X occurs and then Y occurs	All other plausible explanations ruled out