The Broken Speedometer Phenomenon:

Consequence Avoidance and Arbitrary Outcomes

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A Thesis submitted to the faculty
of the University of North Carolina in
partial fulfillment of the requirements
of a degree with Honors in
Political Science

2019

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Adviser

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Introduction

When an individual receives a speeding ticket, they have two options: pay the ticket or fight it in court. To pay the ticket would mean accepting the financial costs, as well as the corresponding points on a license that a speeding ticket generates. However, if an individual decides to fight the citation in court, they have an opportunity to reduce their speeding citation to a lesser charge, or acquit the charge altogether. While going to court does have its costs, potentially including making time to go to court, paying court fees, or hiring legal counsel, it can also protect an individual from having to deal with long-term insurance increases or license suspensions. If a defendant can convince the judge to reduce their speeding ticket to a lower charge, such as an equipment violation, the defendant ultimately receives no points on their license and avoids a harsher consequence.

In North Carolina speeding citations that were resolved between January 1, 2013 and December 31, 2017, over 40% of individuals who took their tickets to court received a lesser charge of a broken speedometer. This broken equipment charge was given to 94% of all defendants in this time period who were deemed "responsible for lesser" or guilty of a reduced charge. The sheer number of rulings consistently affirming a defendant had a broken speedometer brings the practice of reducing speeding citations into question. Not only is it important to question the accuracy of this many broken speedometers rulings, but it is also necessary to question who is able to reduce their speeding ticket in this way.

Using data from a North Carolina Courts database, the present study analyzes over 1,200,000 cases of resolved speeding citations, with an emphasis on speeding citations being reduced to a lower charge. This paper focuses on defendants who took their speeding ticket to court, because in the case of speeding citations, individuals only go to court in hopes of

achieving a better outcome. The harshness of outcome in a speeding ticket case, compared to the outcome an individual would have received without fighting the ticket, is the primary variable of interest. By looking at the influence of individual case characteristics, such as demographics, attorney type, and the courtroom the case is heard in, I analyze factors that alter a defendant's outcome in the courtroom. This thesis serves to document the presence of a broken speedometer phenomenon, which leads thousands of defendants, and hundreds of judges, to accept fictitious legal outcomes in speeding ticket cases. Ultimately, the broken speedometer phenomenon and the evidence displayed in this thesis provide support for the idea that judges and judicial districts across North Carolina sentence speeding ticket defendants in arbitrary and capricious ways.

Literature Review

Speeding Tickets in the Courtroom

In the range of literature that exists surrounding punishments and sentencing in U.S. courtrooms, analyses typically focus on measuring the harshness of outcome (Doerner and Demuth 2010; Mitchell 2005; Novak and Chamlin 2008; Petrocelli, Piquero, and Smith 2003; Steffensmeier, Kramer, and Ulmer 1995). This refers to how harsh a defendant's outcome is in comparison to what charge they came to court with. In speeding citation cases, there are generally four outcomes that vary in levels of harshness. A defendant can be found guilty of a worse charge, guilty as charged, guilty of a lesser charge, or not guilty. In the present study, 40% of defendants were found guilty of a lesser charge, meaning their speeding citation had a reduced outcome. Of those who received a reduced outcome in court, 94% were cited as having a broken speedometer.

The phenomenon of the broken speedometer is the single most used speeding citation reduction, but it is rarely documented in literature. The book *Beat Your Ticket: Go to Court &*

Win illustrates ways in which a defendant could utilize the argument of a broken speedometer to win a speeding ticket case (Brown 2013). Brown highlights the fact that speedometers must be checked once a year and if they have not been checked recently, there might be an opportunity to argue for a broken speedometer instead of a speeding citation. While a speedometer should be recalibrated once a year, tire wear and pressure can impact the way a speedometer operates and its effectiveness (Brown 2013). If a defendant proposes that their speedometer was broken when they were caught speeding, the court may accept a broken equipment violation in place of a moving violation.

One key aspect of the court system highlighted here is the idea of consequences and consequence avoidance. The main consequences a defendant faces when receiving a speeding ticket are the points on the license, associated court fines, as well as a potential subsequent hike in insurance rates ("North Carolina Traffic" 2018). A basic speeding ticket will result in a $25 fine, court costs, and 2 points on a defendant's license. When a defendant gets their speeding citation reduced to a broken speedometer charge, they still have to pay the fines and fees, but do not receive any points on their license that they would have otherwise ("North Carolina DMV" 2019). Speeding citations have a relatively high possibility of consequence avoidance, with over 50% of cases resulting in a reduced or acquitted charge. While arguing for a broken speedometer ruling is one way to reduce a citation, there are a variety of other factors that can affect how a speeding citation case is resolved in the courtroom. The present study focuses on how the following factors influence the overall harshness of outcome in speeding citation cases.

Demographics

Conflict theory indicates that the law, law enforcement, and the court system are operated by dominant groups in society that utilize these systems to support their own interests (Petrocelli,

Piquero, and Smith 2003). This results in the dominant groups using their power to restrict the power of minority groups that they view as a threat. Individuals may or may not be perceived as a threat based on their race, gender, and age, which are ultimately uncontrollable factors. The influence of these factors on sentencing is widely covered in existing research. Petrocelli, Piquero, and Smith (2003) applied conflict theory to their study of traffic stops occurring over a three-month period in Richmond, Virginia in 2000. Looking at how traffic stops and resulting outcomes are altered by racial factors, Petrocelli, Piquero, and Smith (2003) found that relatively powerless people, such as minorities, are more likely to be viewed as criminal by people in positions of power. Racial minorities were seen as a threat, particularly in white-majority neighborhoods. The study concluded that the perception of threat is a motivating factor in the actions taken by dominant groups, leading black individuals to be judged more harshly than whites.

Novak and Chamlin (2008) look at conflict theory from a racial perspective, synthesizing conflict theory and the idea of racial threat into the threat hypothesis. The threat hypothesis dictates that when whites discern a threat of crime from non-whites, it prompts them to take an active role in pushing the legal system to mediate that threat by controlling the non-white population. In theory, this should result in black people being systemically punished harsher than white people. Ojmarrh Mitchell's (2005) meta-analysis of sentencing bias research supports this claim, proposing that there is a statistically significant race effect in sentencing. Mitchell explores the racial impacts of sentencing, independent of legal factors that could also influence harshness of outcome, such as the type of attorney a defendant had or how serious their offense was. His analysis concludes that independent of both legal and extralegal factors, blacks are consistently sentenced slightly more harshly than whites. There was also significant support for a

cumulative disadvantage, where blacks cycling through the criminal justice system may experience even more racial disparities. Supporting literature reiterates these claims, showing significant support that race influences not only the decision to sentence a defendant, but also the harshness of the sentence, even when controlling for all other legal and extralegal factors (Everett and Wojtkiewicz 2002; Pruitt and Wilson 1983; Spohn, Gruhl, and Welch 1981; Steffensmeier and Demuth 2001; Uhlman 1977).

Jill K. Doerner and Stephen Demuth (2010) expand on racial sentencing research by considering other demographic variables as influences in the court system. Doerner and Demuth look at the joint effects of race, ethnicity, gender, and age, when looking at the outcomes in the sentencing stage in U.S. Federal Courts. In Doerner and Demuth's (2010) theoretical framework, they rely on the judge's focus on blameworthiness, the community, and practical constraints and consequences. They compiled data from the U.S. Sentencing Commission, looking at how extralegal variables impact the decision to incarcerate and the resulting sentence length. Their research suggests that males, blacks, and younger individuals receive the harshest sentences. When looking further at interactions of race and gender, Doerner and Demuth found that racial differences in sentencing are greater among men than among women. This interaction of race and gender is consistent with the findings of other sentencing literature, suggesting that race and gender should be looked at in conjunction with one another (Steffensmeier and Demuth 2001; Steffensmeier and Demuth 2006).

Age is another important factor in sentencing, with Doerner and Demuth's (2010) study showing that younger defendants tend to receive harsher sentences than older defendants. This finding was consistent with Doerner and Demuth's review of prior literature, which dictated that older defendants tend to be viewed in a more favorable light, and with less severity, when

compared to younger defendants. Steffensmeier, Kramer, and Ulmer's research (1995) supports Doerner and Demuth's findings for age differences in sentencing in their analysis of Pennsylvania sentencing data. In their theoretical exploration of the topic, they suggest that judges should sentence only based on legal variables, but the differential severity of punishment may be caused by personal opinions of the judge on the age and experience of defendants. Themes such as future criminality, relative dangerousness, and responsibility emerge as potential considerations of the judge. In this study, they defined "young" as ages 21-29, grouping later ages by ten-year increments (Steffensmeier, Kramer, and Ulmer 1995). Their findings suggest that younger offenders are somewhat more likely to be imprisoned, with longer resulting prison terms. However, offenders under the age of 21 receive leniency in sentencing due to their young age (Steffensmeier, Kramer, and Ulmer 1995). In an additional study expanding on previous research, Steffensmeier, Kramer, and Ulmer (1998) confirm their initial findings and emphasize the importance of looking at race, gender, and age in conjunction with one another.

Attorney type

The type of representation a defendant receives in the courtroom is an influential factor to consider when analyzing how a defendant will be sentenced. In the present study, almost all cases either hired an attorney or chose to self-represent, with less than .05% of cases being assigned a public defender or court appointed attorney. Often times defendants cannot afford to hire an attorney, choosing to represent themselves. Alternatively, defendants might also want to represent themselves because they believe the case will be heard fairly regardless of whether or not the defendant is professionally represented. Swank (2005) looks at the increase in pro se representation in recent years, which he calls the pro se phenomenon. In what Swank calls "poor people courts," traffic cases tend to have at least one side representing pro se compared to

criminal courts (Swank 2005, 376). There is a lack of accessible low- or no-cost legal services for individuals who need those services. As part of the judicial process, defendants also need the time and funds to be able to attend court hearings even if they do not hire an attorney. Some defendants need the services of an attorney that they cannot afford while others simply choose to represent themselves. When looking at traffic courts where individuals are not typically offered the opportunity to receive a public defender, defendants who cannot afford an attorney are forced to represent themselves if they want to bring their ticket to court (Swank 2005).

In an analysis of the type of plea a defendant enters based on the type of attorney representing the defendant, Henry E. Kelly (1976) connects to these issues by hypothesizing that the quality of defense counsel will directly influence the sentence length and type of plea a defendant entered. Controlling for demographic variables, Kelly found that the influence of the type of defense a defendant had varied significantly amongst types of crimes committed. For example, when looking at burglaries, the defense type explained 16.5% of variance in sentence length, but when looking at homicides only 3% of the variance is explained (Kelly 1976). An article written by Sales, Beck, and Haan (1992) also fails to determine what type of representation is most effective, and instead attempts to understand the position of defendants who self-represent. Sales, Beck, and Haan (1992) argued that income, age, education, and occupation play key roles in determining whether a defendant will self-represent in court. In terms of who is capable of effectively self-representing, the researchers consider prior legal training, prior self-representation, and self-reported reasons for representation. Self-representing defendants face difficulties and disadvantages in the courtroom, including fully understanding the legal process at hand, as well as the legal forms necessary to proceed during trials.

Judicial Influences

As previously stated, the United States legal system displays examples of both consequences being given and consequences being avoided. The individual who ultimately determines what consequences a defendant receives is the judge on the bench. Judges are assigned to one of forty-four judicial districts in North Carolina, with each district being comprised of one to seven counties. When analyzing influences on harshness of outcome, it is necessary to consider the impact of different judicial districts because district location and makeup are outside of a defendant's control. Differences in sentencing between judicial districts can occur due to district-wide policy differences, county-specific differences, or even differences in individual judging.

There are a number of county-level and district-level differences that are unaccounted for in the present study, but can significantly impact a defendant's harshness of outcome in the courtroom. When studying county and district-level influence on sentencing within various court systems, researchers have implemented legal, extralegal, and situational variables in order to study the contexts under which defendants are sentenced. Thomas L. Austin (1981) used data from convicted Iowa felony offenders to study the differences in sentencing between rural, suburban, and urban courts. By looking at both legal and extralegal variables, Austin concluded that urban courts follow a legalistic model of sentencing when compared to suburban and rural courts. His findings imply that offenders in rural and suburban courts are more likely to receive harsher sentences than defendants in urban courts. In a similar and supporting study, John Hagan (1977) illustrates what he calls the "Bureaucratization of Justice," which creates linkages between urbanization, bureaucratization, and sentencing. Hagan (1977) found that court location could significantly impact the severity of sentencing of minority offenders, so much so that

influences such as prior record, number of charges, and offense seriousness had little to no impact on the sentencing outcome.

Other studies provide support for more external factors that can make a specific district or county sentence individuals in a systematically different way than another county or district. Some studies suggest local political and social influences can create environments that support or push against law and order sentencing tactics (Helms and Jacobs 2002). In a study done by Jeffery T. Ulmer and Brian Johnson (2006), researchers found that county location, size, and political makeup all have direct impacts on sentencing severity. Their study suggests that individual case features influence whether or not a defendant will be sentenced, but local contextual features directly influence the severity of sentencing (Ulmer and Johnson 2006). The most important local contextual features were local jail capacity and judge caseload size, which had considerable influences on the severity of sentencing. While some local factors, such as political makeup and urbanicity, are not being measured in the present study, it is important to consider ways they may lead to significant county and district-level disparities.

While there is evidence indicating judicial districts may differ from one another in terms of sentencing severity, individual judges should also be considered as actors who may have drastically different sentencing practices. Prior research suggests that judicial workload has a strong influence on the ways judges proceed with court cases (Ulmer and Johnson 2006). As judicial workload increases and courts over-crowd, there are a high number of cases coming through the court systems on all levels. Specifically looking at state and county courts, there has been a recent reduction in overall budgeting for court systems, resulting in an increase in workload per judge (Kleiman, Lee, and Ostrom 2013). This increased workload particularly affects lower level offenses, which speeding tickets could be seen as a big part of. When judges

are overcrowded with cases, this has significant impacts in the ways they judge and their ability to delineate time to all cases evenly. According to Lauren K. Robel (1990), an increase in judicial workload leads to judges feeling over-pressured and ultimately unable to appropriately handle all cases in a just and fair way. While Robel studied the influence of large caseloads on federal judges, the implications of her findings can be applied to lower courts as well. She argues that increasing judicial workload inhibits procedural fairness, as well as a judge's ability to fairly determine the outcome of all cases that are pressed through the system (Robel 1990). An alternative study done by Brian Johnson (2006) suggests that caseload pressure had little impact on sentencing outcomes, and that jail capacity was more influential to judges.

Studies suggest that sentencing severity may differ for judges who are in different districts, but it is also important to consider how judges may even differ in sentencing within a judicial district. It is common to hear of "bias" in the courtroom, often stemming from stereotypes about demographic or socioeconomic factors, but there can also be "capriciousness" or "arbitrariness" in the court system on an individual level. If judges are acting in arbitrary or capricious ways, this would result in random fluctuation in sentencing. Even if this arbitrariness is not targeted at a specific group, the existence of arbitrariness in what is supposed to be an equal justice system is still not constitutionally acceptable. David W. Neubauer (2008) argues that arbitrariness in the court system delegitimizes the ability of judges and law enforcement to make decisions impacting citizens who are exposed to these systems.

There are financial consequences to capriciousness and arbitrariness that leads to thousands of individuals receiving disparate outcomes based on arbitrary factors. This results in thousands of people receiving better treatment than others for no reason. One high-cost example of this occurring in the court system is through the United States' death penalty. Mitzi Dorland

and Daniel Krauss (2005), look at the arbitrary and capricious application of the death penalty across states, finding that the physical structure of the court system and the methods by which jurors are asked to convict people results in an arbitrary and capricious application of the death penalty. Dorland and Krauss (2005) argue that researchers should be critical of the court system and the way it operates, bringing awareness to the presence of arbitrariness and capriciousness in the courtroom and how it can unfairly impact different individuals.

Theory

The purpose of this paper is to determine what legal and extralegal factors influence the harshness of outcome a defendant receives when taking a speeding ticket to court in North Carolina. Over 80% of the cases that resulted in a positive outcome were speeding citations that were reduced to lower, non-moving violations. While this category can include a variety of traffic citations, 94% of all reduced speeding tickets in North Carolina from 2013 to 2017 were attributed to a broken speedometer. I hypothesize that the frequency with which broken speedometer rulings are given in North Carolina reflects a legally-accepted fiction across the state based on convenience. This positive outcome has advantages for almost every actor in the courtroom, suggesting that this is the easiest ruling on a speeding citation. The individual who received the speeding ticket ultimately achieves a more positive outcome, the attorney wins and gets paid, and the judge quickly moves through a case with the court still making money. If all parties involved in the case will achieve a more positive outcome with a broken speedometer ruling, it makes sense to continue to reduce speeding tickets in this way.

Consistent with prior literature, a variety of variables will influence the harshness of outcome an defendant receives in a speeding ticket case, including demographics, attorney type, and judicial factors. However, if the decision to reduce a case to a broken speedometer is a

matter of convenience, it should lead to significant disparities in the ways tickets are ruled on across judges and judicial districts. Some judges may refuse to participate in this court-accepted fiction, while others may take advantage of it due to either personal preference or high caseload. There may also be district norms that have developed over time, creating contrasts between how different judicial districts and even different counties in North Carolina tend to rule on speeding tickets. Overall, I theorize there will be significant disparities in speeding ticket outcomes in North Carolina, driven by the consistent arbitrary and capricious action of reducing speeding tickets to broken speedometer charges.

Hypotheses

As evidenced by the literature reviewed in this paper, I expect a number of patterns to surface across my dataset. The dependent variable in my study is harshness of outcome, or how harshly a defendant is sentenced in comparison to their original charge. Existing literature suggests there are demographic factors that can lead to individuals being perceived as more criminal, blameworthy, and deserving of punishment. Being a male, being black, and being younger have consistently been shown to result in harsher outcomes. These characteristics have stereotypes attached to them that in turn alter how judges perceive defendants. Another influential factor is the type of an attorney a defendant has, whether they hired their own counsel or choose to self-represent. Prior research is inconclusive regarding the influence of attorney type on harshness of sentencing, but suggests that hiring an attorney can give an advantage to defendants who are not very knowledgeable of how the criminal justice system operates. Finally, judicial districts and individual judges appear to have an influence on the harshness of sentencing, with caseload, personal opinion, and county-level differences all having an influence on the ways judges decide their cases. Based on my findings in the extant literature and the

variables I am going to be using in my study, I have constructed the following testable hypotheses:

H1. In North Carolina speeding citation outcomes decided between 2013 and 2017, females will be more likely to have their speeding citations reduced than males.

H2. In North Carolina speeding citation outcomes decided between 2013 and 2017, white defendants will be more likely to have their speeding citations reduced than black defendants.

H3. In North Carolina speeding citation outcomes decided between 2013 and 2017, older defendants will be more likely to have their speeding citations reduced than younger defendants.

H4. In North Carolina speeding citation outcomes decided between 2013 and 2017, defendants who hire attorneys will be more likely to have their speeding citations reduced than defendants who self-represent or are provided a court-appointed attorney.

H5. In North Carolina speeding citation outcomes decided between 2013 and 2017, judicial district-level differences will create significant disparities across judicial districts in terms of how likely it is that a speeding citation will be reduced.

H6. In North Carolina speeding citation outcomes decided between 2013 and 2017, individual-level differences between judges will create significant disparities across courtrooms in terms of how likely it is that a speeding citation will be reduced.

Data and Methods

In all 100 counties in North Carolina, court clerks systematically record criminal and infraction case information into a database, stored in the North Carolina Administrative Office of the Court's Data Center. Using this database, I selected all observations of speeding citations that

were ruled on during the years 2013 to 2017. To limit the influence of confounding factors, I only included observations of defendants who were charged with a single speeding citation, offense code 4450, and no additional charges. I also dropped approximately 20,000 cases of speeding citations where the outcome and punishment of the case was unclear or unspecified. My final dataset includes 1,211,988 observations that reflect cases that can capture and isolate the effect of my independent variables on the outcomes of speeding citations.

The dependent variable in the present study is a measure of harshness of outcome when a defendant receives a court ruling on their speeding ticket. If a defendant were to be convicted of offense code 4450, speeding, they would receive two points on their license, a minimum fine of $25, plus court fees. My measure of harshness indicates how harsh the outcome of the case is compared to the original charge, coded into four categories. The first possible outcome is being acquitted of all charges, with no fines or points on the license. The second possible outcome is receiving a conviction that has a lesser punishment than a speeding ticket would have received. Common examples in my dataset include a broken speedometer or broken muffler, which both count as improper equipment violations that result in a $25 fine, court costs, and zero points on one's license. The third possible outcome is receiving a conviction that has a punishment equal to the minimum $25 fine and 2 points on the license that an individual would have to pay for a speeding ticket. Examples of charges that would be equal to a speeding ticket citation include driving left of center and unlawful use of highways. The fourth possible outcome is receiving a conviction with a punishment greater than a speeding ticket would have received. In the analysis that follows, "acquitted" represents having charges dropped, "reduced" represents a conviction with a lesser punishment, and "guilty" represents a conviction with equal or greater punishment.

Looking at the extant literature, there is a range of studies that indicate what factors matter in sentencing outcomes in the courtroom. Based on findings of other studies, the present study will focus on six potential variables that influence outcomes in speeding ticket citations: gender, race, age, attorney type, the judicial district a case was in, and the judge who ruled on the case. The first demographic variable I look at is gender, which is coded as 0 for female and 1 for male. When analyzing my second variable, race, I narrowed the dataset to only individuals who identify as white or black, because over 90% of my observations were defendants who were black or white. I coded white as 0 and black as 1. The third demographic variable in my analysis is age, which I broke into 6 categories: under 20 is coded as 0, 20-29 years old as 1, 30-39 years old as 2, 40-49 years old as 3, 50-59 years old as 4, and older than 60 as 5. Attorney type is included in my dataset, but was only specified for 663,434 observations. For these observations, I coded representing oneself as 0, hiring an attorney as 1, and receiving a court-appointed attorney as 2.

The literature provides evidence that uncontrollable aspects of the courtroom environment, such as the judge on the bench and the county location of the courtroom, can influence speeding citation outcomes. All 100 counties in North Carolina are included in my dataset, with only 3 counties having less than 1,000 observations. Each observation in my dataset also indicates what judge ruled on the case, providing the judge's initials. It is important to note that 874,319 of my cases did not list the judge in the case. Because the available data was limited in this way, I decided to focus on general trends in ruling across judges who frequently see traffic tickets. To do so, I focus only on judges who have ruled on 100 or more speeding citations, which includes 271 total judges. For both judges and counties, my analysis focuses on the similarities and differences in the percent of speeding citations that were reduced.

Results

Overall, 10% of all speeding citations in North Carolina from 2013-2017 were acquitted, 39% were reduced, and 51% were either guilty as charged or received a worse punishment. In this study, I constructed three models that give insight to what a defendant's outcome will be in the courtroom in a speeding ticket case. Because a reduced ticket is the most common positive outcome a defendant can achieve in court, the following results highlight a defendant's chances of having their speeding ticket reduced under different circumstances. Table One summarizes the likelihood that defendants with varying characteristics will have their speeding ticket reduced. Model One focuses on demographic variables and controls for the type of attorney a defendant had. Model Two adds an additional control, judicial district, which strengthens the explanatory value of the model.

Table 1: Odds of Having a Speeding Citation Reduced

Variable	**Model 1**		**Model 2**	
	Odds-Ratio (SE)	Prob.	Odds-Ratio (SE)	Prob.
White Male	.869 (.005)	.000	.888 (.006)	.000
Black Female	1.021 (.009)	.023	.905 (.009)	.000
Black Male	.904 (.008)	.000	.821 (.008)	.000
Younger than 20 years old	1.563 (.021)	.000	1.428 (.021)	.000
20-29 years old	.748 (.007)	.616	.684 (.021)	.000
30-39 years old	.830 (.009)	.000	.791 (.009)	.000
40-49 years old	1.005 (.010)	.000	.978 (.011)	.052
50-59 years old	1.051 (.012)	.000	1.029 (.012)	.017

Retained an Attorney	2.819 (.015)	.000	3.213 (.020)	.020
Court-Appointed Attorney	1.239 (.084)	.001	1.650 (.120)	.120
District 2			.449 (.011)	.000
District 3A			.678 (.024)	.000
District 3B			1.366 (.028)	.000
District 4			1.641 (.027)	.000
District 5			4.985 (.120)	.000
District 6A			1.167 (.056)	.001
District 6B			2.061 (.062)	.000
District 7			6.859 (.192)	.000
District 8			1.136 (.029)	.000
District 9			1.610 (.039)	.000
District 9A			1.881 (.054)	.000
District 10			.491 (.009)	.000
District 11A			3.724 (.089)	.000
District 11B			3.142 (.068)	.000
District 12			.845 (.028)	.000
District 13			2.138 (.037)	.000
District 14			.510 (.019)	.000
District 15A			.547 (.015)	.000
District 15B			3.221 (.063)	.000
District 16A			4.116 (.170)	.000

District 16B			1.147 (.032)	.000
District 17A			2.762 (.066)	.000
District 17B			.913 (.025)	.001
District 18			2.826 (.047)	.000
District 19A			1.492 (.031)	.000
District 19B			3.352 (.065)	.000
District 19C			1.103 (.031)	.000
District 19D			4.010 (.115)	.000
District 20A			3.320 (.090)	.000
District 20B			2.531 (.065)	.000
District 21			5.965 (.099)	.000
District 22A			2.246 (.046)	.000
District 22B			4.798 (.123)	.000
District 23			3.774 (.082)	.000
District 24			1.812 (.040)	.000
District 25			2.992 (.054)	.000
District 26			.675 (.017)	.000
District 27A			.776 (.027)	.000
District 27B			1.214 (.034)	.000
District 28			.003 (.001)	.000
District 29A			.231 (.012)	.000
District 29B			.302 (.010)	.000

District 30			.339 (.008)	.000
Constant	.374 (.004)	.000	.220 (.004)	.000
N Log Likelihood LR Chi-2 Pseudo R-2		663,433 -416,526.6 44,033.82 .0502		663,433 -368,109.7 140,867.8 .1606

Note: Omitted categories, or baselines, are: Race and Gender, "White Female"; Age Categories, "Over 60 Years Old"; Judicial District, "1."

Demographics

When looking at the influence of race, gender, and age of defendants in the courtroom, these models show that demographic factors can strongly influence the harshness of outcome for a speeding citation. Looking across Table One, it is clear that race and gender are significant predictors of whether or not a speeding citation will be reduced. In Model One, white women serve as the baseline category, with all other gender and race combinations being compared to white women. White men are the least likely to see a citation reduction, being 13.1% less likely than white women. Black women actually receive a more favorable outcome than white women, being 2.1% more likely to have their speeding citation reduced. Comparatively, black men are 8.6% less likely than white women to have their citations reduced.

In Model Two, the strength of the model is significantly increased by controlling for the judicial district a defendant went to court in, which triples my pseudo R^2 value, serving as a better predictor of whether defendants will have their speeding citation reduced. Controlling for judicial district decreases the likelihood that black people will receive a reduced outcome. While a white man and black man's likelihood of reduction remains about the same in both models, the odds ratio for black women was significantly impacted when the model controlled for judicial district. Black women receive the worst likelihood of reduction, being 17.9% less likely to have

their tickets reduced than white women. The comparison of these two models not only shows the influence that controlling for judicial district can have on how race and gender interact in the courtroom, but also the ways in which race plays a crucial role in how defendants are likely to be convicted. I thus confirm Hypotheses 1 and 2.

In the analysis of the influence of a defendant's age on their citation outcome, it appears that there are some fairly consistent trends in how speeding citations are decided in relation to age. In my analysis, I define my youngest group of defendants as younger than twenty, which points to over 78,000 cases in my dataset. Although prior literature suggests that the younger defendants are, the more likely they are to receive harsher outcomes, Models One and Two show otherwise. The youngest group of defendants in my study are actually the least likely to be found guilty and the most likely to have their tickets reduced compared to any other age group. This supports the findings of Steffensmeier, Kramer, and Ulmer (1995), who found that the youngest group of defendants receive additional leniency in sentencing. The youngest group is 56.3% more likely to have a speeding ticket reduced than the baseline category, individuals over 60 years old. Defendants in their twenties and thirties are the least likely age categories to see speeding citation reductions, with them being 25.2% and 17% less likely respectively. For defendants 40 and above, they all have about the same likelihood of seeing a speeding citation reduced. Controlling for the judicial district an individual went to court in does not distinctly modify the effects of age on speeding citation reductions. The largest change that occurs is a negative 13% change for the youngest age group, which is still the most likely to see a citation reduction. These results do not confirm my third hypothesis, because the youngest defendants are the most likely to receive a reduction. However, if the youngest age category is excluded, the younger defendants are, the less likely they are to have their speeding citation reduced.

Type of Attorney

When looking at the type of defense a defendant had in their speeding ticket case, there are several options an individual can have for representation. A defendant can self represent, retain a hired attorney, or be assigned a court appointed attorney or public defender. Both of my models control for the type of attorney a defendant has, which is ultimately one of the largest predictors of whether or not a defendant will have their citation reduced. In Model One, a defendant who hires their own attorney is 2.82 times more likely to have their speeding citation reduced compared to defendants who self represent in court. Defendants who are provided an attorney by the government, either a court-appointed lawyer or a public defender, are 1.24 times more likely to see a reduction, although it is important to note that only 1,232 defendants in my dataset received counsel provided by the government.

Model Two significantly amplifies the effect that attorney type has on a defendant's speeding citation outcome. When controlling for judicial district, defendants who hire their own attorney are now 3.21 times more likely to have their ticket reduced, and defendants with a government-provided lawyer are 1.65 times more likely to see a reduction. These results confirm Hypothesis 4.

Figures One and Two give further insight to the ways different types of legal counsel can impact the outcomes defendants receive in the courtroom. Figure One shows a summary of the overall outcomes defendants had based on their attorney type, while Figure Two shows what defendants plea based on the type of attorney they have. Figures One and Two look very similar, showing how the attorney type a defendant has may influence what defendants decide to plea, and ultimately how their case is decided.

Figure 1: Speeding Citation Outcomes by Attorney Type

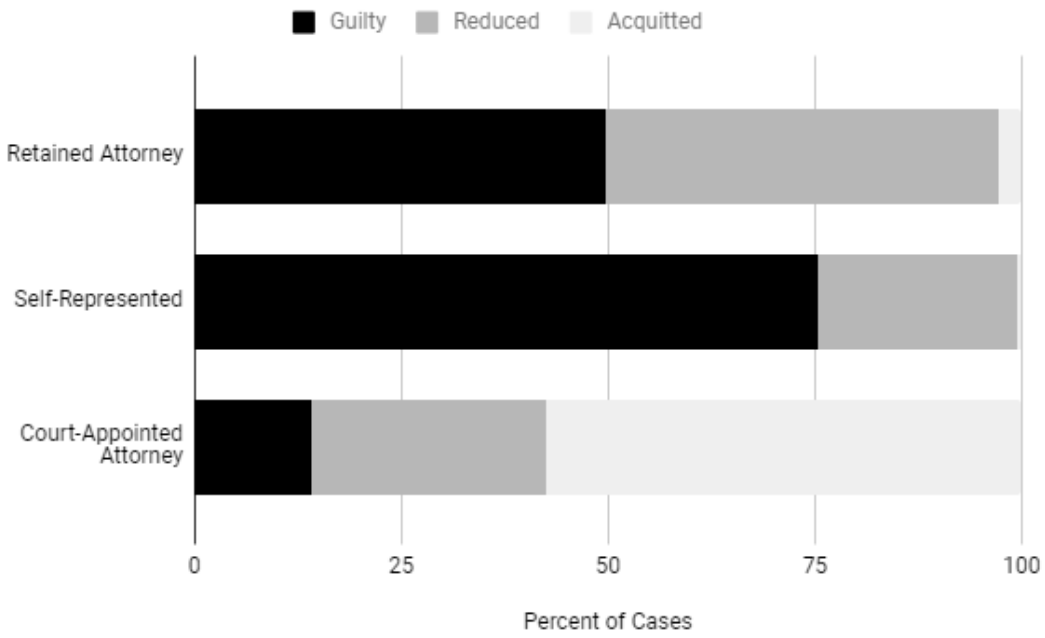
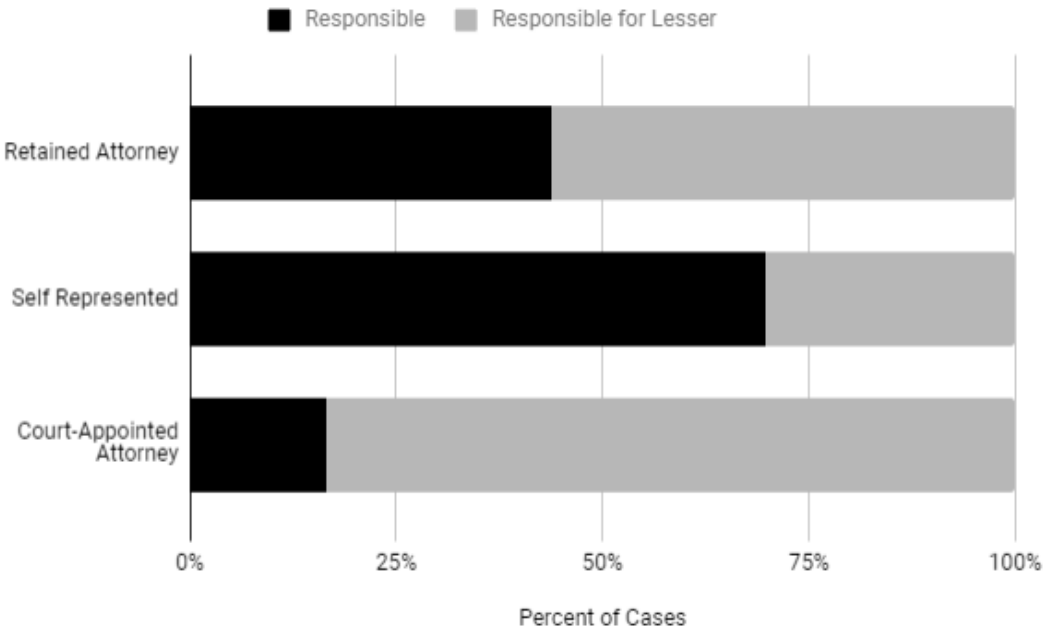


Figure 2: Plea by Attorney Type



Another component to consider in regards to the type of attorney a defendant has is whether or not their demographic factors influence their decision to hire an attorney or self represent. Table Two reflects the likelihood that defendants of different demographic groups will hire an attorney.

Table 2: Odds of Hiring an Attorney

Variable	**Model 3**	
	Odds-Ratio (SE)	Prob.
White Male	.978 (.006)	.000
Black Female	.929 (.008)	.008
Black Male	.969 (.008)	.008
20-29 Years Old	.810 (.009)	.000
30-39 Years Old	.822 (.010)	.000
40-49 Years Old	.833 (.010)	.000
50-59 Years Old	.781 (.010)	.000
Constant	1.671 (.018)	.000
N Log Likelihood LR Chi-2 Pseudo R-2		663,434 -452,049.2 518.57 .0006

Note: Omitted categories, or baselines, are: Race and Gender, “White Female”; Age Categories, “Under 20 Years Old.”

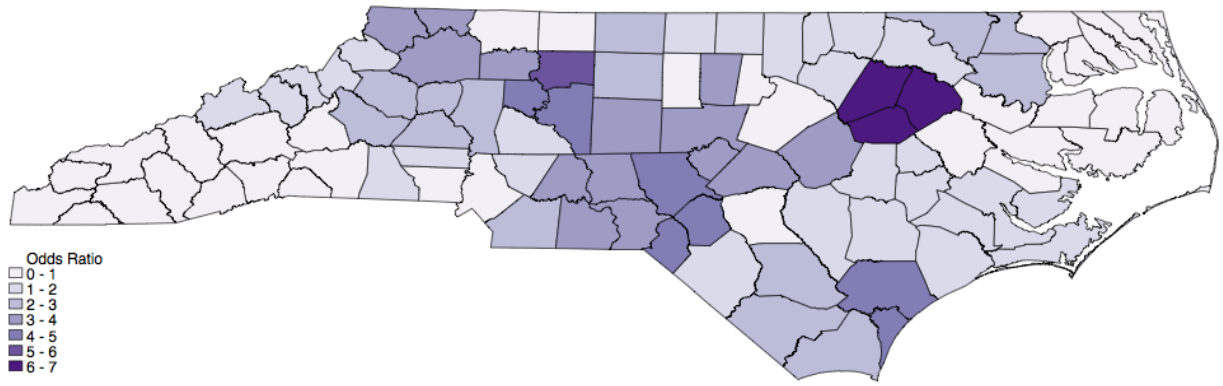
Table Two shows that demographic factors can have an influence on whether or not a defendant is going to hire an attorney. Race and gender do not have a strong influence on attorney type, with black men being the least likely to hire an attorney, 7% less likely than white women. On the other hand, age has a stronger influence, with all age groups being at least 15%

less likely to hire an attorney than the youngest age group, under 20. Aside from the youngest age group, there is not much variation in hiring an attorney between age categories. Defendants who are under 20 years old are significantly more likely to hire an attorney than defendants of any other demographic descriptor.

Judicial Districts

In the two models that I have presented in this paper, judicial district is the most influential predictor of whether or not a defendant will have their speeding ticket reduced. The baseline district in my model is District 1, which contains North Carolina Counties Gates, Chowan, Perquimans, Pasquotank, Camden, and Currituck. Figure Three is a map of North Carolina that displays the odds ratios of every judicial district, signifying how likely defendants are to receive a speeding citation reduction in the corresponding district.

Figure 3: Odds of Having a Speeding Citation Reduced by Judicial District

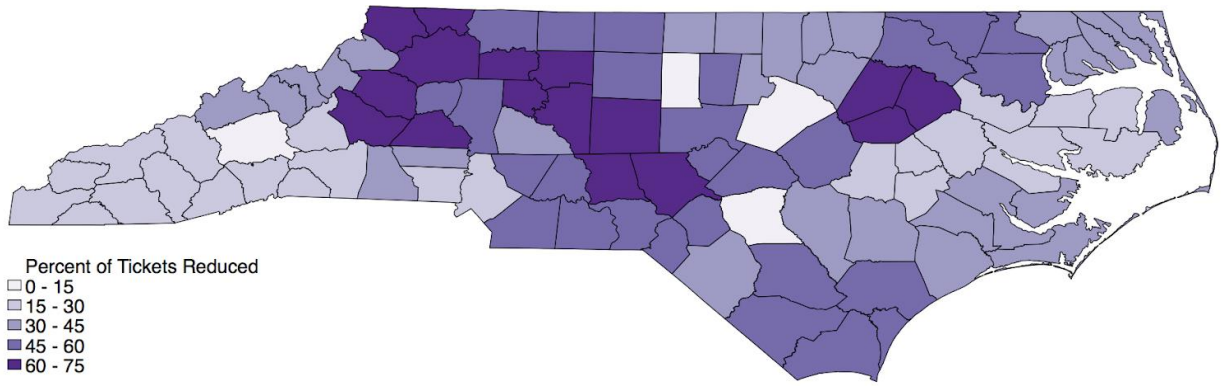


There are several notable outlying districts where the odds of having a speeding citation reduced are drastically impacted based on the judicial district a defendant is in. Table One in the Appendix provides a comprehensive list of what counties are in each judicial district. Table Two in the Appendix expands on the district-level analysis by displaying the odds of having a

speeding citation reduced in each county in North Carolina. On the lower end, Districts 28 and 29A are the least likely to see speeding tickets reduced. District 28 is 99.7% less likely to reduce speeding tickets compared to District 1, and District 29A is 76.9% less likely to reduce. On the higher end, District 7 is the most likely to reduce a speeding ticket, being 6.86 times more likely than District 1. District 21 also stands out with high rates of reductions, being 5.97 times more likely to reduce a speeding ticket.

The results in Model 2 provide significant support for Hypothesis 5, showing the high levels of variation in sentencing that can be seen between judicial districts in North Carolina. Figure Four further emphasizes this point, highlighting the percent of all tickets per judicial district that were reduced to a lower charge.

Figure 4: Percent of Speeding Citations Reduced by Judicial District



This map provides further visual evidence of the disparities between judicial districts in terms of reducing speeding citations to charges with less harsh punishments. There is a clustering of outliers in central North Carolina, with both the highest and the lowest rates of reduction. Districts 10, 12, 15A, and 28 have the lowest reductions, with less than 15% of their tickets being reduced over the course of five years. Alternatively, there are other districts (Districts 7,

19B, 19D, 21, 22B, 23, and 25) that are reducing over 60% of all speeding tickets. This visualization reflects the strong variation in judicial districts across North Carolina that significantly influences the odds of a speeding citation receiving a less harsh outcome.

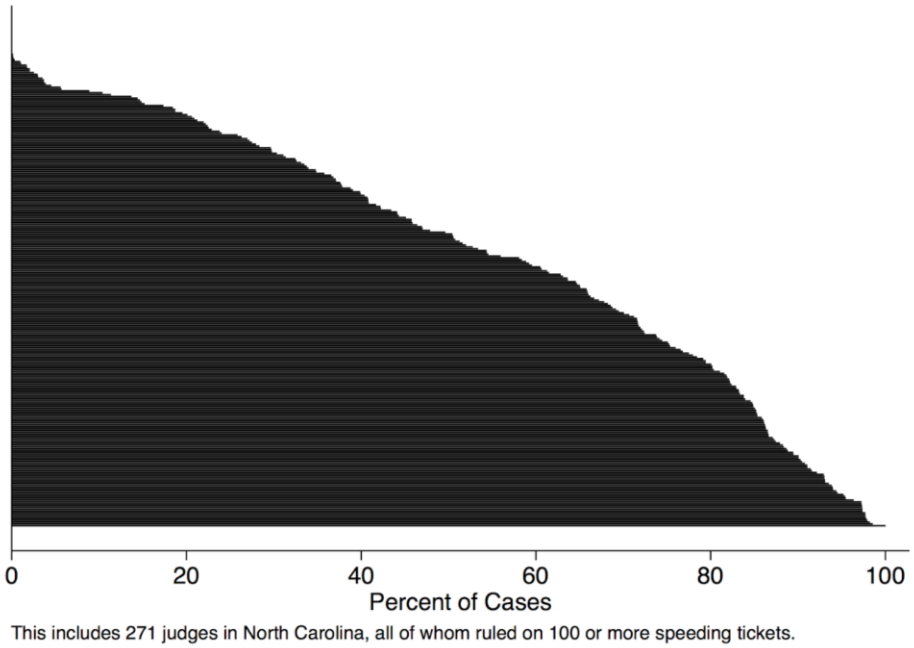
Influences Within Districts

Judicial district proved to be the most influential predictor of speeding citation reductions in Model Two, but there are other factors existing within judicial districts that can influence how a defendant is treated in court. Two other alternative factors to consider include what judge you were assigned within a judicial district and what county your case was held in. Judges are an extremely important variable to consider because even if a district follows an official or unofficial policy regarding speeding citation reductions, judges still have their own discretion to decide cases. To effectively analyze the influence different judges have, I restricted my dataset to only judges who have ruled on 100 or more speeding ticket cases, to eliminate any outliers who are not typically involved in traffic court. This resulted in a total of 271 judges, who have completed 285,140 cases in North Carolina from 2013 to 2017. Figure Five shows the percent of tickets every judge has reduced, with every horizontal line representing one judge's cases.

Figure Five shows the extremely high range of variation between judges ruling on over 100 speeding tickets in North Carolina. There are several judges who have not reduced a single speeding ticket, with 13 total judges reducing 0 speeding tickets over the course of five years. Alternatively, there are also judges who are reducing citations in over 90% of their cases. This variation provides support for Hypothesis 6, showing that judges do have a lot of discretion in deciding how they will rule on speeding ticket cases. Table Three in the Appendix further supports this idea, showing the odds ratios for the 100 judges in North Carolina with the most

speeding ticket cases. Every one of the judges in Table Three in the Appendix has ruled on 730 or more cases over the five-year period. The judges are listed by their initials and the reference

Figure 5: Percent of Total Cases Reduced Per Judge



judge is the first one to appear alphabetically, with the initials "ABP." According to Table Three in the Appendix, there are several judges who are over 95% less likely than the reference category to reduce a speeding citation. Those judges include JHC, HLR, DVB, DJN, CPB, and CDR. On the high end of reductions, there are also judges who are significantly more likely to reduce a speeding citation, including BRA (7 times more), LMG (6 times more), and TTA (8.8 times more).

While there are significant disparities in the ways judges are ruling on cases, existing literature indicates that judicial workload may lead to judges working through cases more quickly, which may result in arbitrary and capricious decisions made in haste to end a case. To measure judicial workload, I determined how many speeding ticket cases each judge ruled on per

1,000 people in the county the judge was on the bench in. Figure Six represents a comparison of the workload judges have with the percent of speeding ticket cases they reduced.

Figure 6: Percent of Speeding Tickets Reduced Based on Judicial Workload

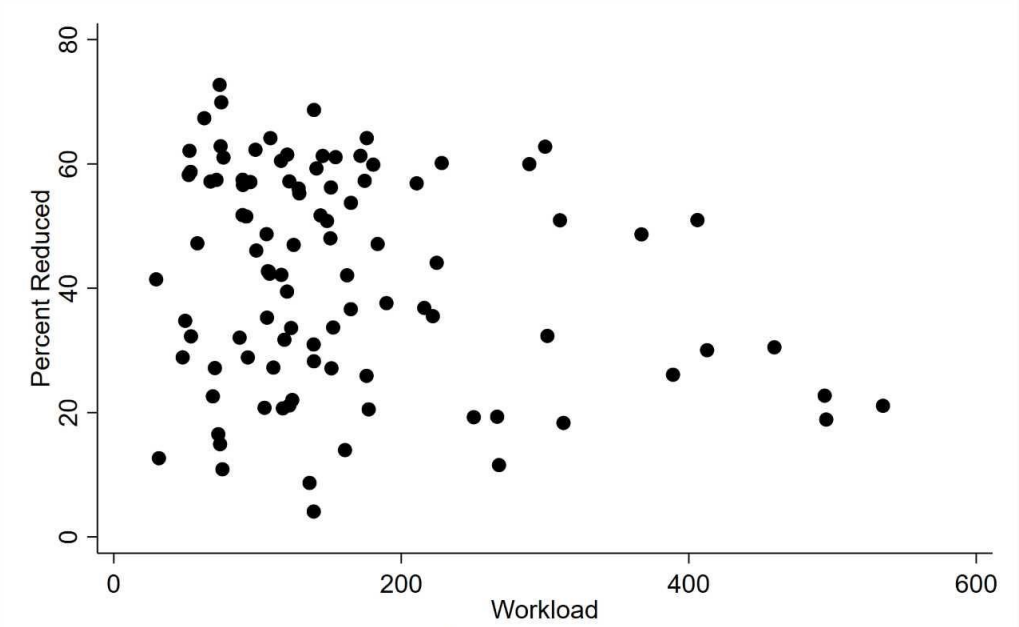


Figure Six shows there is no significant correlation between judicial workload and the percent of cases that a judge is going to reduce. There is one outlier excluded in the above graph, a judge whose workload was 1,300 and who only reduced 20% of their cases. With workload having such an insignificant impact on how judges are reducing speeding tickets in North Carolina, Figure Six further supports Hypothesis 6 and the overarching idea that speeding citation reductions in North Carolina are arbitrary.

Discussion

In speeding citation rulings in North Carolina from 2013 to 2017, 94% of all speeding citations that were reduced to a lesser charge were convicted of a broken speedometer. While it is definitely possible for a speedometer to stop working for a variety of reasons (i.e. gears break, water damage, loss of calibration over time), it is highly unlikely that over 450,000 people in this

dataset had a broken speedometer. Furthermore, in comparison to a speeding ticket, having a broken speedometer still requires a defendant to pay fines to the court, but they do not receive any points on their license. Reducing a speeding ticket to a broken speedometer conviction gives advantages to almost every individual immediately involved in this court process. For the individual who received the ticket, they will not receive the points on their license that would have the potential to significantly increase insurance rates. For the judge, there is potential for the case to go more quickly if the ticket is reduced, and the defendant still receives some form of punishment for their speeding. For the lawyer, they are considered to have won the case and are providing their client with a better outcome. While broken speedometer reductions could be viewed as an effective solution to large caseloads and overwhelmed judges, this thesis provides support for ways in which speeding ticket rulings in North Carolina are both arbitrary and capricious.

It is clear that broken speedometer reductions are common in the North Carolina court system, but the question to be answered is what leads to individuals receiving this outcome? An individual's gender, race, age, type of attorney, judge, and judicial district the case was held in all have the potential to impact the severity of a punishment following a speeding ticket citation. Through this study, I have analyzed the effects of each of those factors on the harshness of outcome in a speeding citation challenge in court. My data shows there are variations in not only the ways demographic factors impact individual sentencing, but there is also a significant variation in the ways defendants are sentenced in different courtroom locations, under different judges.

When an individual receives a speeding citation and chooses to take it to court, some of the first factors coming into play in their case are demographic characteristics, which are far

beyond a defendant's control. The results in this study show that race, gender, and age can all influence how an individual is sentenced. In North Carolina speeding citation cases from 2013 to 2017, females were slightly more likely to see a reduced ticket than men. The race effect between defendants was greater than the gender effect, with black defendants being more likely to receive a harsher outcome than white defendants. Finally, age also had a significant impact on harshness of outcome, with the youngest defendants (under 20) receiving the most lenient speeding ticket outcomes. Outside of this group, the younger individuals were, the harsher the outcome they received.

While an individual cannot control their demographic characteristics, defendants are able to decide whether or not to hire an attorney. This decision is made before a defendant even steps into a courtroom, but has an even stronger impact on a defendant's outcome. For defendants who hired their own attorney, they were almost three times as likely to see their speeding citation reduced. Defendants who received a court-appointed attorney or public defender had even better overall outcomes, although this representation is particularly rare in speeding ticket cases. Individuals who chose to self-represent had the least favorable outcomes, only seeing a reduction about 25% of the time. Hiring an attorney can significantly increase the likelihood of a favorable outcome in a speeding ticket case, but there is an implicit socioeconomic effect here. Court costs are expensive and hiring an attorney ultimately increases the overall costs of going to court. Even if an attorney gives a defendant a more favorable outcome, the defendant still has to pay the costs of an attorney. If an individual cannot afford an attorney in the first place, their odds of defending their case to a reduced outcome significantly drop, simply because they cannot afford representation. Hiring an attorney is the only variable in my study that a defendant can control, and even then, individuals may not have access to an attorney because they cannot afford it.

While demographic variables and attorney type may alter how a judge perceives a speeding ticket case, the most influential variables in my study were factors that the North Carolina Court System ultimately controls: judicial district and the judge on the bench. The largest disparities in how individuals were judged in court exist between judicial districts and between individual judges. When I controlled for district location, there were some judicial districts that were as much as 6.8 times more likely to reduce speeding tickets, showing how the location the case is heard in can have a significant impact on the outcome of the case. The variance seen here was not only between districts, but also between judges within districts. My results focused on judges who ruled on over 100 speeding tickets in North Carolina, showing that some judges were reducing speeding tickets 0% of the time, while others were reducing tickets for over 95% of the cases they saw in their courtroom. In some districts there are judges who all have similar averages for how they decide cases, but in other districts it almost appears that judges are following completely different ideologies in sentencing, because their sentencing outcomes are strikingly different. Furthermore, there was no correlation between workload and speeding citation reductions, eliminating the possibility that judges use reductions to move quickly through a high caseload.

Based on the results in the present study, there is significant support for the idea that speeding citation rulings in the North Carolina court system are both arbitrary and capricious. "Arbitrary" sentencing means that a judge is making random decisions in sentencing, and "capricious" sentencing means that these decisions fluctuate and change randomly. The results above support both of these ideas, due to the large disparities that can be seen across courtrooms in North Carolina. If broken speedometers were consistently broken, at a rate high enough to produce 40% of speeding tickets, there would be at least some level of consistency across the

state in how speeding tickets are reduced. However, as displayed above, there are some judges and judicial districts that essentially refuse to engage in speeding ticket reductions, while other judges and districts reduce to a broken speedometer 90% of the time.

The extreme variation in speeding citation reductions across judicial districts, and even individual judges, in North Carolina supports the idea that the broken speedometer phenomenon is a court-accepted falsehood that is applied across the state in arbitrary and capricious ways. By accepting this falsehood as legally factual, all parties involved in the courtroom ultimately reach a more positive outcome. As stated in my theory, the defendant receives a lesser charge, the attorney wins and gets paid, and the judge quickly rules on the case. For all parties, having the defendant plea to a lesser charge, or a broken speedometer violation, is ultimately the easiest path to take. It is clear that actors in the courtroom are aware of this method of reducing a speeding ticket. For individuals who hire an attorney, they likely receive advice from that attorney to plea to a lesser charge, leading to the significant disparities in speeding ticket outcomes based on attorney type. Furthermore, judges are clearly aware of this method of reducing tickets, as it has become common practice in some judicial districts, and for some individual judges, to almost always reduce speeding tickets in this way. For those judges who do engage in this practice of reductions, they not only frequently reduce speeding tickets, but also almost abandon the option of finding a defendant guilty.

These assertions have relevant implications for the North Carolina legal system, and provide evidence that questions the fairness, consistency, and legal validity of speeding citation rulings. Speeding citations are given as a way for law enforcement to deter dangerous behavior. A speeding ticket comes with consequences, and those consequences are designed to stop an individual from speeding again. If that attempt to deter behavior is frequently met with judges,

other enforcers of the law, arbitrarily and capriciously deciding to not fully punish individuals, the law enforcement system is not effectively or cohesively working as intended. While speeding tickets serve as consequences, the practices of the North Carolina judicial system also drive high levels of consequence avoidance. Reducing a speeding citation to a broken speedometer equipment violation is a court-accepted form of consequence avoidance that judges and judicial districts in North Carolina use in disparate ways.

Conclusion

When thinking of the core tenets of the United States Court System, several words come to mind: fairness, equality before the law, and due process. Each of these ideas stems from the founding principle of our justice system that every individual should be treated equally when they step into the courtroom. The idea of "disparities in sentencing" has become a popularized and well-understood subject in the academic world as studies have consistently shown there are disparities in sentencing based on both legal and extralegal factors. Extant literature suggests that race, gender, attorney type, judicial district, and judge all play a role in determining the outcome of a court case. However, the extent of those disparities in sentencing varies under specific circumstances and across different types of crimes.

The results of this paper provide strong support that disparities in sentencing exist in North Carolina speeding ticket cases. While demographic characteristics do have an influence on the ways defendants are sentenced, these effects pale in comparison to other courtroom factors such as the type of attorney a defendant has or the judge on their bench. Across judicial districts and individual judges in North Carolina, there is strong evidence of statewide disparate, arbitrary, and capricious speeding citation rulings. These rulings result in individuals being

randomly given broken speedometer reductions, which allows the defendant to easily escape the penalties of a speeding ticket.

When an individual receives a speeding ticket and chooses to take it to court, they are choosing to enter a system that promises equal treatment by the law and equal opportunity of outcome. However, the findings in this paper indicate otherwise. This thesis serves to document the broken speedometer phenomenon in North Carolina, showing the pervasive influence it has in some courtrooms across the state, while simultaneously being completely rejected by other judges and judicial districts. A defendant's harshness of outcome in a speeding ticket case is largely determined by factors outside their control, primarily the courtroom location and the judge on the bench.

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Appendix

Table 1: Judicial Districts and Corresponding Counties

Judicial District	Counties
1	Gates, Chowan, Perquimans, Pasquotank, Camden, Currituck, Dare
2	Hyde, Tyrrell, Washington, Beaufort, Martin
3A	Pitt
3B	Craven, Pamlico, Carteret
4	Sampson, Duplin, Jones, Onslow
5	Pender, New Hanover
6A	Halifax
6B	Northampton, Bertie, Hertford
7	Nash, Edgecombe, Wilson
8	Wayne, Greene, Lenoir
9	Granville, Vance, Franklin, Warren
9A	Caswell, Person
10	Wake
11A	Harnett, Lee
11B	Johnston
12	Cumberland
13	Bladen, Columbus, Brunswick
14	Durham
15A	Alamance
15B	Chatham, Orange
16A	Hoke, Scotland
16B	Robeson
17A	Rockingham
17B	Surry, Stokes
18	Guilford
19A	Cabarrus
19B	Randolph, Montgomery
19C	Rowan
19D	Moore
20A	Stanly, Anson, Richmond
20B	Union
21	Forsyth
22A	Iredell, Alexander
22B	Davidson, Davie
23	Wilkes, Alleghany, Ashe, Yadkin
24	Madison, Yancey, Mitchell, Avery, Watauga
25	Burke, Caldwell, Catawba

26	Mecklenburg
27A	Gaston
27B	Cleveland, Lincoln
28	Buncombe
29A	Rutherford, McDowell
29B	Polk, Henderson, Transylvania
30	Cherokee, Graham, Clay, Macon, Jackson, Haywood, Swain

Table 2: Odds Ratios of Having a Speeding Citation Reduced in All North Carolina Counties

County	**Odds Ratio (SE)**	**Prob.**
Alexander	.894 (.079)	.204
Alleghany	6.612 (.431)	.000
Anson	5.850 (.248)	.000
Ashe	8.586 (.485)	.000
Avery	8.320 (.445)	.000
Beaufort	1.476 (.042)	.000
Bertie	6.396 (.199)	.000
Bladen	9.230 (.250)	.000
Brunswick	8.967 (.208)	.000
Buncombe	.262 (.008)	.000
Burke	9.295 (.212)	.000
Cabarrus	5.694 (.120)	.000
Caldwell	9.759 (.241)	.000
Camden	2.645 (.100)	.000
Carteret	4.860 (.116)	.000

Caswell	2.943 (.092)	.000
Catawba	11.0253 (.263)	.000
Chatham	8.037 (.246)	.000
Cherokee	1.470 (.051)	.000
Chowan	4.358 (.439)	.000
Clay	1.591 (.092)	.000
Cleveland	3.118 (.082)	.000
Columbus	5.841 (.131)	.000
Craven	3.561 (.085)	.000
Cumberland	1.080 (.027)	.002
Currituck	1.646 (.045)	.000
Dare	3.062 (.070)	.000
Davidson	12.712 (.348)	.000
Davie	14.310 (.608)	.000
Duplin	5.490 (.143)	.000
Durham	2.935 (.072)	.000
Edgecombe	13.507 (.415)	.000
Forsyth	9.670 (.191)	.000
Franklin	3.357 (.103)	.000
Gaston	1.800 (.047)	.000
Gates	3.391 (.150)	.000
Graham	2.306 (.171)	.000

Granville	3.283 (.139)	.000
Greene	3.130 (.129)	.000
Guilford	5.458 (.106)	.000
Halifax	5.262 (.174)	.000
Harnett	8.195 (.208)	.000
Haywood	.805 (.024)	.000
Henderson	1.615 (.046)	.000
Hertford	6.368 (.242)	.000
Hoke	8.221 (.313)	.000
Hyde	1.607 (.159)	.000
Iredell	7.610 (.169)	.000
Jackson	1.652 (.063)	.000
Johnston	6.552 (.152)	.000
Jones	6.403 (.230)	.000
Lee	10.100 (.412)	.000
Lenoir	2.2923 (.069)	.000
Lincoln	4.489 (.122)	.000
Macon	3.713 (.114)	.000
Madison	1.433 (.043)	.00
Martin	1.812 (.052)	.000
McDowell	.586 (.028)	.000
Mecklenburg	2.502 (.051)	.000

Mitchell	10.420 (.667)	.000
Montgomery	8.126 (.258)	.000
Moore	10.172 (.280)	.000
Nash	16.422 (.529)	.000
New Hanover	9.650 (.228)	.000
Northampton	11.028 (.427)	.000
Onslow	3.592 (.073)	.000
Orange	6.598 (.149)	.000
Pamlico	4.598 (.259)	.000
Pasquotank	4.588 (.163)	.000
Pender	7.907 (.218)	.000
Perquimans	2.704 (.088)	.000
Person	4.016 (.138)	.000
Pitt	1.219 (.036)	.000
Polk	2.175 (.067)	.000
Randolph	9.753 (.222)	.000
Richmond	4.524 (.154)	.000
Robeson	2.861 (.071)	.000
Rockingham	9.194 (.219)	.000
Rowan	2.906 (.076)	.000
Rutherford	2.501 (.082)	.000
Sampson	7.855 (.224)	.000

Scotland	8.311 (.364)	.000
Stanly	8.229 (.240)	.000
Stokes	7.155 (.207)	.000
Surry	4.477 (.115)	.000
Swain	1.384 (.058)	.000
Transylvania	2.426 (.089)	.000
Tyrrell	1.469 (.057)	.000
Union	5.513 (.137)	.000
Vance	2.762 (.090)	.000
Wake	.752 (.016)	.000
Warren	2.155 (.091)	.000
Washington	1.740 (.112)	.000
Watauga	8.261 (.223)	.000
Wayne	2.298 (.069)	.000
Wilkes	10.388 (.237)	.000
Wilson	8.762 (.311)	.000
Yadkin	9.436 (.335)	.000
Yancey	9.839 (.464)	.000
Constant	.162 (.003)	.000
N Log Likelihood LR Chi-2 Pseudo R-2		1,211,986 -719,503.68 186,846.48 .1149

Note: The Omitted county, or baseline, is Alamance County.

Table 3: Odds of 100 Judges with Most Cases Reducing a Speeding Citation

Judge Initials	Odds Ratio (SE)	Prob.
ACW	1.700 (.277)	.001
AMH	.715 (.095)	.012
ASW	1.082 (.164)	.603
BAS	.464 (.058)	.000
BCT	1.183 (.179)	.266
BRA	.146 (.016)	.000
CAG	7.033 (.195)	.000
CDR	.195 (.024)	.000
CHG	.002 (.000)	.000
CHS	.596 (.071)	.000
CMN	.638 (.077)	.000
CPB	.390 (.044)	.000
CPG	.022 (.003)	.000
DBC	.108 (.013)	.000
DF	.071 (.008)	.000
DGD	.247 (.033)	.000
DJN	.005 (.001	.000
DLW	.044 (.005)	.000
DN	1 (omitted)	(omitted)
DVB	.484 (.059)	.000

DW	.000 (.000)	.000
DWC	.819 (.106)	.123
FBW	1.297 (.167)	.044
HLR	.188 (.023)	.000
HLS	.049 (.007)	.000
JAG	.960 (.112)	.724
JAJ	1.986 (.241)	.000
JBC	.223 (.029)	.000
JCD	5.501 (1.104)	.000
JFW	.388 (.052)	.000
JHC	1.845 (.256)	.000
JKR	.012 (.002)	.000
JL	.875 (.130)	.372
JLL	1.157 (.160)	.292
JLM	.327 (.038)	.000
JMB	.709 (.082)	.003
JMD	.218 (.026)	.000
JPH	.825 (.099)	.109
JPR	.075 (.008)	.000
JRM	.659 (.079)	.001
JRN	.512 (.070)	.000
JRP	1.365 (.191)	.026

JTB	.440 (.051)	.000
KG	1 (omitted)	(omitted)
KLE	.078 (.009)	.000
KR	.384 (.049)	.000
KRW	.108 (.012)	.000
LFF	.037 (.005)	.000
LL	.452 (.054)	.000
LM	1 (omitted)	(omitted)
LMG	.321 (.039)	.000
LVM	6.07 (.898)	.000
LWG	.827 (.097)	.106
LWM	.197 (.024)	.000
MEG	.335 (.040)	.000
MFC	1.498 (.234)	.010
MHL	.075 (.009)	.000
MHW	.717 (.089)	.007
MLK	1.714 (.302)	.002
MRW	3.38 (.607)	.000
NHG	.261 (.029)	.000
OHW	.742 (.092)	.018
PAH	.223 (.026)	.000
PH	4.686 (.677)	.000

PM	.202 (.025)	.000
PMQ	.179 (.022)	.000
RDS	.789 (.097)	.053
RKW	.108 (.013)	.000
RMW	.742 (.090)	.014
ROF	.889 (.115)	.361
RT	.085 (.011)	.000
RW	.068 (.008)	.000
RWB	.574 (.073)	.000
SAB	.819 (.105)	.118
SCE	.699 (.084)	.003
SGK	.632 (.083)	.001
SLU	2.640 (.394)	.000
SRS	.442 (.049)	.000
STM	.330 (.043)	.000
SVH	.634 (.081)	.000
TGC	.113 (.013)	.000
TLB	2.694 (.338)	.000
TRW	.281 (.033)	.000
TSS	.131 (.016)	.000
TTA	.058 (.008)	.000
TVA	8.786 (2.198)	.000

WCT	.360 (.043)	.000
WDM	.183 (.022)	.000
WFF	5.446 (1.013)	.000
WFG	4.544 (.976)	.000
WFS	.969 (.130)	.815
WGH	.153 (.019)	.000
WGW	4.74 (.569)	.000
WHH	.782 (.111)	.082
WJM	.237 (.028)	.000
WLM	1.209 (.176)	.192
WMC	.048 (.007)	.000
WTM	.323 (.041)	.000
X	.585 (.074)	.000
Constant	7.842 (.854)	.000
N Log Likelihood LR Chi-2 Pseudo R-2		228,935 -100071.7 65710.87 .2472

Note: This table contains only the top 100 judges in North Carolina with the most speeding ticket cases (over 730 cases each). The Omitted judge, or baseline, is judge ABP.