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Increasing Police Accountability to the Citizens it Serves

The Production of High-Quality Public Services
Through Bottom-Up Governance

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Senior Government Honors Thesis

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Abstract: In light of the recent protests against police brutality, we have witnessed overall patterns of dissatisfaction in public opinion with the current state of policing, exacerbated by an inability to produce widespread and substantial police reform. This perplexing issue is the result of increased reliance on top-down regulation, which relies upon the assumption that the users of police services do not directly contribute to the quality of the service produced. As a consequence, there is a general lack of avenues for citizen participation, or bottom-up governance, to effectively channel public opinion towards creating substantive changes within police departments. Constructing a dataset and two variables, bottom-up governance and satisfaction, I run OLS regressions to test whether an increase in bottom-up governance leads to increased citizen satisfaction with the local police department. I find that an increase in bottom-up governance does in fact lead to higher levels of citizen satisfaction. These findings have significant implications that extend far beyond policing and can be applied to the production of all local public goods and services, not only public safety.

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Part I: Motivation

Police Brutality and a Lack of Police Reform in America

On May 25, 2020, George Floyd was murdered over a counterfeit \$20 bill. Derek Chauvin, a Minnesota police officer with previous complaints on use of excessive force, had knelt on Floyd's neck for 8 minutes and 46 seconds, according to a report filed by the Hennepin County District Attorney, the last 2 minutes and 53 seconds of which Floyd was silent and unresponsive (Hill et al., 2021).

The situation surrounding Floyd's murder is not an anomaly in America. On July 17, 2014, Eric Garner died after being placed in a chokehold in police custody; he was arrested for selling cigarettes illegally on the street. On August 9, 2014, eighteen-year-old Michael Brown was shot dead by a white police officer, who claimed to have feared for his life during their encounter, despite the fact that Brown was completely unarmed. On November 22, 2014, following a complaint about a "male sitting on a swing and pointing a gun at people", twelve-year-old Tamir Rice was shot dead by police in a city park while playing with a toy gun (Sparrow, 2016:3-5). There are many other victims of related situations: Breonna Taylor, Trayvon Martin, Walter Scott, and Freddie Carlos Gray Jr. to name a few. Even though such blatantly unjustifiable incidents have repeatedly taken place and have received widespread media shame, adequate changes on how policing is conducted today have not been made. *Essentially, police performance remains sub-par, to say the least, despite clear public desire to improve the priorities of and strategies employed by the police.*

The sheer injustice seen in Floyd's murder, building off of the countless instances of police brutality that black Americans have been, and currently are, subject to, triggered a mass mobilization of protestors immediately following Floyd's death all across America and the

globe. The protests demanded police accountability over police brutality, as well as called for widespread societal changes on the structure of policing itself and its relationship with systemic racism. In light of this wave of activism, there have been varying efforts made to address the situation. On one side, offending officers in Louisville, KY have been placed on administrative leave, and on the other side, Minneapolis has even announced completely dismantling the local police force in favor of other systems of providing for public safety. Somewhere in the middle, New York City's mayor has announced a transfer of funding from the city's police department towards youth and social services, and chokeholds have been banned in a number of cities (Baker, 2020; Herndon, 2021; Rubinstein, 2020). *What is noticeably neglected from the discourse on police reform is the idea of creating an institutional framework that will allow for continued, long term citizen participation in determining what the police's priorities should be.* This goes beyond creating surface level, politically motivated changes that only aim to placate agitated protestors during waves of intense activism.

Insufficient Pathways towards Reform

The answer to why adequate reform in policing has not yet taken place, despite clear public pressure, is top-down regulation. This method of governance has become increasingly normalized in the U.S. over the past few decades. As the federal and state governments make more and more decisions on behalf of the community, the resulting lack of local involvement has led to an environment where people do not feel invested in their communities, as policies and regulations do not truly reflect the desires of the people. This creates space for outside actors to insert their policy preferences into policing, falling into a negative feedback loop where government seems to represent the desires of the people less and less. This move towards mass consolidation and top-down forcing over community-based management is an

important current domestic process to consider when thinking about social controls and the militarization of the police, as it has dire implications on the democratic nature of our society. If decisions continue to be made on a statewide or national scale, there is no need for citizens to actively engage and participate in local self-governance, or “bottom-up” governance”.

This larger pattern of top-down regulation explains why those who directly receive the service of public safety, and have the most at stake in the quality of the service provided, do not seem to be more involved in the process of policy formation and decision making. Simply stated, citizens cannot participate in bottom-up governance because important decisions have now been left to the “top” to make, and they have become increasingly accustomed to having no ability, or desire, to participate in their own governance.

Over/Under-policing and the Importance of Local Public Opinion

Starkly opposing this general pattern of apathy that typically characterizes American politics, Floyd’s murder has temporarily erased this pattern within the field of police reform, although the permanence of such increased levels of mobilization and activism is questionable. Nevertheless, as a result of his death, there has been much debate on determining the path towards police reform. Along with many other ideas, the concept of “defunding the police” has been thrown around with increased frequency as of late. In a survey conducted on June 16-22, 2020, the Pew Research Center found that a decreasing number of Americans gave police forces positive ratings on their use of force, treatment of different racial groups, and level of accountability for individual officers’ actions. However, only a quarter of Americans actually believe in decreased spending on the police. Instead, there seems to be broad support for training officers in nonviolent alternatives to deadly force and increasing individual officers’ accountability for their actions, while keeping overall spending levels constant. They also found

that 74% of Americans support requiring officers to live in the places they police, which advances the idea that officers will most effectively protect and police those they have an inherent connection with (Pew Research Center, 2020).

While there is indisputable merit in looking at national trends of public opinion, and these survey results do provide valuable information about the state of public opinion on policing in the US, there is a dangerous likelihood of oversimplification that occurs when aggregating at a national level. Communities across the US are not identical, and aggregating survey results to determine the “average” American opinion will likely lead to the erasure of incorporating heterogeneous beliefs into the policing system, as the nuances of local communities and their specific desires for their police department are overlooked in favor of a broader, national perspective.

Taking a closer look at policing opinion in the US, it is revealed that certain areas report feeling over-policed, while others feel under-policed (Brunson, 2020). These varying opinions on current levels of police spending highlight a larger pattern: that support for increased police presence varies community to community, unlike what a national concatenation of opinion suggests. I identify this as a weakness in the current literature, as community preferences are more accurately characterized when they are geographically stratified, yet there is still disproportionately substantial emphasis on national trends in opinion on policing.

Even within Minneapolis, where George Floyd was murdered by a member of the local police department, citizens hold a diverse range of opinions on what policing should look like in the community. Liberal members of the Minneapolis City Council supported calls for replacing the police department with “a department of community safety and violence prevention” (Friedman, 2020). On the other end of the spectrum, there is a coalition of community leaders in

Minneapolis who oppose these changes, afraid of the recent surge in gang shootings, lootings, and drug dealing that have filled their neighborhoods in North Minneapolis. They want “*both* a better police force *and* enough officers to protect their kids and their streets – not *either* the present unreformed police *or* a disbanded police department and an uncertain replacement” (Friedman, 2020). This example of such nuanced opinion on the actions and priorities of a local police department leads me to two conclusions:

1. Aggregating public opinion at greater levels of geographic scale will lead to further erasure of specific, experienced information that only the local community has, when there is already difficulty in accommodating the heterogeneous opinions that occur at the local level.
2. Perceptions of both over and under policing are consequences of an unresponsive police department that is unable to adjust to and satisfy the community’s needs. People are currently voicing their opinions on how policing should be conducted today, but there often aren’t adequate, productive avenues for channeling these opinions into real, substantive changes.

With the ideas of bottom-up governance, self-governing, and democracy in mind, what would increased citizen participation in setting their local police department’s agenda look like, and just how significantly would it improve community satisfaction with policing? Since there is already significant heterogeneity in opinion at a local level, shouldn’t decision-making be left at the smallest possible order of governance?

This thesis investigates these questions. Using community surveys on satisfaction with the local police department, I quantitatively model the relationship between bottom-up governance and satisfaction with local policing. To measure police performance, I work off of

Elinor Ostrom's rationale and justification for utilizing satisfaction as an accurate measure for performance, over other traditional measures and statistics. My model for Bottom-Up Governance is also based on Elinor Ostrom's groundbreaking work on the co-production of public goods and services, where an increase in citizen participation in setting the priorities of the police department will lead to increased satisfaction with the performance of the department.

Ultimately, I find that localities with higher levels of bottom-up governance achieve higher levels of citizen satisfaction with the local police department. This finding confirms my hypothesis that citizen participation and the ability to conduct self-governance are key factors in producing high quality public goods and services. Namely, the institutions that allow for bottom-up governance are essential in channeling active citizen engagement towards the production of substantive change.

Part II: Literature Review

Polycentricity and Self-Governance

I begin with a discussion of polycentricity in order to illuminate why the creation of quality police services requires a polycentric system of governance that can accommodate a diverse range of communities and opinions, as opposed to a top-down, centralized form of governance.

Polycentricity refers to an institutional arrangement where there are multiple, semi-autonomous decision-making centers that act independently, but are constrained by a set of norms and rules that create conditions where a “bottom-up, competitive process” can naturally occur (Aligica et al., 2019: 124). Under a polycentric system, a community will choose to address some common problems directly, but they may decide that other issues are best dealt with under larger orders of governance (McGinnis, 1999:3). Under a federalist system, these orders of governance would consist of “neatly nested jurisdictions at the local, state or provincial, and national levels” (McGinnis and Ostrom, 2011; Carlisle and Gruby, 2017). This is distinct from polycentricity, which also includes “crosscutting jurisdictions specializing in particular policy matters... private corporations, voluntary associations, and community-based organizations”, despite the fact that these entities have no officially designated public role in governance (McGinnis and Ostrom, 2011). Polycentricity allows for a unique combination of centralized and fully decentralized or community-based management to govern any given community, solely based on their specific needs and desires (Carlisle and Gruby, 2017; Imperial, 1999). Moreover, political economist Vincent Ostrom explains how

a successful self-governing system provides its members the greatest possible opportunity for living under rules of their own choice, hence leading to complex federalist structures,

while at the same time preserving a broad shared community of understanding such that political stability is not undermined. In other words, a successful self-governing system is polycentric (1997).

There is no single, optimal set of rules that will adequately meet the needs and desires of all the heterogeneous, diverse communities in the US. Even at a local level, it is still fairly difficult to reach an agreement; this can be seen through the widely varying opinions on police reform within the city of Minneapolis, introduced earlier in my motivation. To accommodate for this heterogeneity, instead of a single set of policy prescriptions, “we need to think about the institutional arrangements that facilitate a peaceful and inclusive negotiation process between parties with different values and visions” (Aligica et al., 2019: 127-8). This framework requires a much smaller scale of governance and scope for rulemaking in dealing with matters of public administration, including public safety. Under this theory, adequate pathways for community involvement in rulemaking will allow for a unique set of rules to be determined that fit the needs and desires of the local community. This locally determined set of rules will be independent of any rules developed in other neighboring communities, so long as they are governed under minimal national requirements, where “political stability is not undermined” (V. Ostrom, 1997).

Coming from this background of polycentric orders of governance, Elinor Ostrom contends that polycentric systems are more elastic and able to respond to fulfilling the specific policy preferences of the local community (Boettke et al., 2013). She developed this argument for community-based management in response to the consolidationist assertions of the 1960s. Supporters of mass consolidation argued about its “technical efficiency in the production of local public goods”, claiming that polycentrism was inefficient and wasteful (Boettke et al., 2013). In the realm of public safety, they asserted that specialization and professionalization were

necessary requisites for effective law enforcement, and that consolidated, larger-scale police departments were more efficient than smaller departments at attaining these standards (Ostrom and Whitaker, 1973). Countering such unsubstantiated notions, V. Ostrom also argued that consolidated and centralized governance would, in fact, be “insensitive and clumsy in meeting the demands of the local citizens” (Ostrom et al. 1961:837). They placed particular emphasis on the need for active citizen participation in voicing the demands of the community, in harmony with her Tocquevillian manner of thinking and my hypothesis on bottom-up governance.

Ostrom’s framework for community-based management is founded upon the creation of citizens who are capable of democratic self-governance. Her work not only found that a polycentric system can effectively respond to the needs of diverse local communities, but that the local public goods produced by citizens in these systems of community-based management could be just as effective as consolidated government units (Boettke et al., 2013). Only within this framework of polycentricity, where the ability to independently and elastically respond to the desires of the local community exists, can a true realization of bottom-up governance come into fruition.

Co-production and Bottom-Up Governance

Keeping this idea of polycentricity in mind, my hypothesis on bottom-up governance is also strongly grounded within the concept of co-production, first established by Elinor and Vincent Ostrom in the 1980s. Until the 1980s, the dominant public administration strategy relied on the separation between politics and administration, where “control [was] hierarchical and bureaucratic, based upon rules, formal procedures and norms that legitimize and regulate administrative action” (Sorrentino et al., 2018; Weber, 1968; Wilson, 1887). Under this strategy, the government directly provides services to a “passive” public, where there is little active

participation on the citizen's part and there is a clear, hierarchical order to decision making. Here, it is assumed that the consumers of the services government provides – namely, the citizens – do not directly contribute to the quality of the good that is produced (McGinnis, 1999:7). As the citizens have no say in determining the quality of the good provided by the government, this implies that their input is unnecessary information that should not alter the manner in which public goods and services are provided by the government.

The concept of co-production fully pushes back on this traditional idea with the belief that “the [effective] production and delivery of services is difficult without the active participation of the recipients” (Ostrom, 1996:1079). Citizens are not the passive targets of government activities but are “vital elements in their success or failure”, in such services as education, health, waste management, and public safety. Here, citizen involvement is not superfluous, but it is an essential component of effective service production (Sorrentino et al., 2018; Brudney and England, 1983; Parks et al., 1981; Sharp, 1980). Co-production creates hybrid institutions that involve a mixed set of arrangements with government and citizens working together (Aligica et al., 2019:122). Whitaker (1980) defines coproduction as “the active involvement of the general public and, especially, those who are to be the direct beneficiaries of the service”. Sharp (1980) takes a similar position: “the coproduction concept is based upon the recognition that public services are the joint product of the activities of both citizens and government officials.” Overall, there is a consensus that co-production is a fundamental contradiction to traditional, hierarchical strategies of public administration, where decision making and authority arises from the bottom up, as opposed to the top down.

The connection between the concepts of co-production and democracy is quite clear. Participation is a crucial aspect in the co-production of public services, as the government cannot

effectively provide services that accurately cater to the needs of the local community without active citizen participation (Whitaker, 1980; McGinnis, 1999:22). With this understanding of co-production and its relationship to polycentricity, the idea of bottom-up governance in policing fits in quite seamlessly. Essentially, a “high quality” police department can look completely different in two towns and have completely different sets of priorities. The specific rules that are produced by each town are not important, but the *process* of rule production is what matters in the creation of a “high quality” police department. I prefer to use the term bottom-up governance, as it insinuates a heavier focus on citizen input from the “bottom up”, instead of the joint interaction between the government and citizenry as two distinct but cooperative entities that “co-production” implies. In a self-governing, bottom-up system, citizen input is the key component of the rule-creation process, as the rules that are produced must satisfy the preferences of those who are subject to them (Aligica et al. 2019:128).

Because of the importance of citizen input in the creation of locally satisfactory rules, and since we have established that there is no single, optimal set of rules that will adequately meet the needs and desires of all the heterogeneous, diverse communities in the US, it is important to ask “*what the institutional arrangements are that make it possible for people with different values to peacefully coexist and self-govern*” (Aligica et al. 2019: 124). In understanding that the goal of co-production is not to simply aggregate disparate beliefs into a “single coherent system”, but instead to determine the best way for heterogeneous, diverse values to coexist, it is clear why the Ostroms identify polycentricity as the one solution for dealing with this challenge, and how the concept of self-governance is so closely intertwined to co-production (Aligica et al. 2019: 124). Moreover, the necessity of bottom-up governance in creating a resilient system of

policing that caters to the unique, ever-fluctuating desires of a local community cannot be understated.

Traditional Measures of Police Performance

If we are to take polycentricity and bottom-up governance as prerequisites of democratic self-governance, then our measures for understanding what government does must also be sufficiently democratic. That is, these measures have to be capable of incorporating the widely varying, heterogenous opinions of the people, and they must be able to signal whether the government is acting in harmony with the local citizenry's beliefs, or if the government is working against them. Thus, there is an extensively studied rationale for the use of public opinion to measure satisfaction with local policing, as opposed to other methods of measurement.

Traditional measures of police performance have largely drawn conclusions from crime statistics and other conventionally measured activities (Gorby, 2013). Easily measured empirical outputs make performance seemingly straightforward, allowing for a simple determination of steps to fix whatever inadequacy in performance that might exist (Gorby, 2013). This includes rates of reported crime, number of traffic citations, crimes solved, response time, and arrests made (Ostrom and Whitaker, 1973). However, these traditional measures, such as the FBI Crime Index, have been firmly established as a poor indicator of performance, despite their continued use and existence (Ostrom and Whitaker, 1973). The inaccuracies found in using such measures are overlooked in favor of the belief that policing should be apolitical, relying on a specific set of nationally determined measures, instead of catering to the needs and desires of the community itself. These general measures also only focus on a small aspect of modern policing, as research has shown that only 10-20% of police work involves "traditional police work" (White, 2008).

Therefore, it is clear that utilizing general statistics as a proxy for police performance does not provide an accurate assessment of the police department's true efficacy (Fielding and Innes, 2007).

There are a number of other problematic issues that further delegitimize the use of these traditional measures of police performance. First and foremost, most crime goes unreported; the National Crime Victimization Survey reported that only 39% of all crime in the US is reported to the police, so these crime-based indices are working off of incomplete, inaccurate data (White, 2009). Additionally, focusing on rates of arrests and number of traffic citations given often does not line up with the community's definition of public safety; in fact, a perceived excess of traffic citations has been found to reduce public confidence in the police (Ren et al., 2004).

Departments that focus on these measures tend to have lower perceptions of credibility and legitimacy, along with poor community relations (Gorby, 2013; Ren et al., 2004; White, 2008; Sanders, 2010). Qualitative studies of police performance have also found that high arrest rates and high citation rates were signs of poor performance, which fully contradicts the rationale behind using these measures to estimate performance (Sanders, 2010). Moreover, some police officials "place special emphasis on improving performance as measured by such indicators", so these measures may be artificially inflated to have the appearance of higher performance than reality (Ostrom and Whitaker, 1973). This "distortion" of performance in specific, evaluated measures is not an uncommon pattern in many bureaucracies, and continued reliance on such measures will only increase the incentive for police departments to place disproportionate emphasis on improving performance by these measures (Cahill, 1976:7; Benson, 1981).

To address these apparent failures in traditional measures of police performance, there have also been some attempts to use the individual performance of police officers as a possible

alternative metric. Gorby (2013) discusses performance-based management evaluations, where the performance of each police officers is regularly assessed. The focus on individual officers does have merit, as it can weed out under-performing individuals who do not meet the department's standard. The metric itself that is used to determine the performance of each individual must be accurately constructed, as the argument for "performance-based" management raises the question on what "performance" itself entails. It could potentially amount to the single evaluation by the police chief or department official, but there are inherent biases involved in this type of evaluation, as police chiefs are sometimes politically motivated (by a connection with the town's mayor) and have a personal set of preferences on how the department should be run. I argue that the perception of a police department's performance as a whole is an equally valid and important measure to evaluate, as it simultaneously takes into consideration the performance of individuals, while also broadly questioning whether the overall police department is meeting the expectations of the community.

In another attempt to address the failures of traditional measures of police performance, Moore and Braga (2003) offer a framework for police performance measurement that focuses on a specific set of services provided by the police. They look at the enforcement of the law, feeling of safety, and quality of "customer service" that the police gives as incorporated in the value of "performance". These categories amount in a scorecard that assumes equal value to each category. For example, under the general category of safety, reducing crime and victimization, increasing traffic safety, reducing public disorder, providing emergency medical/social services, and increasing efficiency/cost effectiveness all hold the same weight. The inherent problem with assigning equal values to each factor in "safety" is that it assumes the priorities of the community, so the resulting outcome of "performance", which is a subjective measure itself, is

based on a set of pre-determined factors that may or may not be what the community considers in their perception of the police.

Commonly deemed to be an unavoidable problem in the research of police performance, “data relies on what people believe”, so certain measures of crime may be inversely related to the perception of police performance (Waddington et al., 2017:4). This may seem to undermine the reliability of using surveys to measure police performance, but a number of studies have argued that perception of performance is just as important a measure as traditionally used rates and statistics (Gorby, 2013; Fielding and Innes, 2006; Skolnick and Fife, 1993). For my argument, I believe that perception is more accurate than these traditional measures of police performance, which have already been shown to be a largely inaccurate picture of what modern policing entails, and potentially are inflated for the appearance of increased performance (Ostrom and Whitaker, 1973; White, 2008; Fielding and Innes, 2007; White, 2009; Sanders, 2010). Further justifying the use of perception as a valid measure of police performance, public perceptions of the fairness, respect and legitimacy of what police officers do in encounters has a strong impact on their “compliance and cooperation” with officers (Vila et al., 2016; Mazerolle et al., 2013). Understandably, individuals care just as much about how they are treated by the police than about changes in crime rates (Vila et al., 2016; Tyler and Huo., 2002; Tyler et al., 2015).

Ostrom’s Measure of Satisfaction

Ostrom uses locally self-determined criteria in her studies on public safety. Her framework of community-based management lends itself to the idea that conceptions of public safety vary community to community, so the most accurate method to determine police performance is by asking the individuals themselves who are benefitting from the services provided by the police and who are directly interacting with members of the department. This

use of citizen satisfaction as a measure of police performance has long been supported by many others (Cahill, 1976; Brown and Coulter, 1983; Gill et al. 2017; Hinds, 2008). Tyler (1990) found that public satisfaction with police is significantly linked to “people’s willingness to report crime and suspicious events, obey police decisions and rules, and comply with the law more generally” (Hinds, 2008). Measuring community satisfaction also goes beyond performance-based management, as suggested by Gorby (2013). The cumulative perception of the police department as a whole encompasses the perception of individual actors, therefore acting as a more comprehensive measure of performance than on an individual basis.

Ostrom found that small police departments with a high degree of community involvement were able to leverage important personal knowledge and local ties to improve community satisfaction with police (Boettke et al., 2013). This challenged the popular belief that consolidation and centralization of services is the only way to effectively provide citizens with public goods. She measured police output by respondents’ experience with the police, as well as citizen evaluations of service levels. Speaking to this idea of bottom-up governance, many of the officers in very big departments do not see themselves as responsible to the citizens. They are on duty for very specific hours and with an entirely different mentality, where the input and priorities of the community are rarely considered (Ibid).

In looking at police performance, Ostrom also argued that smaller police forces under community control are not necessarily less effective at meeting citizen’s demands than larger, city-wide consolidated police departments (Ostrom and Whitaker, 1973). She determined that smaller police forces are more likely to have officers that live in the community, are more aware of local needs, and are more likely to have existing relationships with members of the community. This existing relationship between the community and the police allows for officers

to act with more knowledge on the situation, as opposed to officers from rotating precincts that have no investment in the wellbeing of the community in and of itself, instead focusing on the job and the specific tasks it entails. As an interesting note, despite an established literature on the merits of surveys and the use of satisfaction to evaluate police performance, traditional measures of crime rates continue to be widely used. This finding emphasizes the institutionalized nature of current policing methods and practices, as well as the relative stiffness that characterizes our current system of governance.

Factors Associated with Police Performance and Bottom-up Governance

Now that I have established the validity of using satisfaction to measure the quality of a local police department's performance, I look into a number of known factors that have a known effect on satisfaction. In determining these confounding variables, I will be able to take them into consideration and control for them in my quantitative model testing the relationship between bottom-up governance and satisfaction.

There is a well-established school of literature looking into the factors that affect legitimacy, confidence, support, and satisfaction with the police (and similar descriptors that all essentially refer to police performance). Demographic variables have received particularly high levels of attention, and there are a number of significant findings with these variables, considering them both individually and collectively. Undermining an equitable perception of public safety, variables like age, race/ethnicity, and socio-economic status are strongly associated with confidence in the police (Brown and Coulter, 1983). Moreover, these demographics variables seem to inform how individuals feel they are welcome and able to participate in bottom-up governance.

Race

I begin by highlighting general trends in the relationship between race, satisfaction with the police, and likelihood of political participation in hopes to clarify the connection between an individual's racial identity and capacity for bottom-up governance. People of color, black people in particular, are significantly less satisfied with police performance than white people (Waddington et al. 2017:3; Weitzer and Tuch 2005a:288; Weitzer and Tuch 1999;2005b). This may be linked to the fact that the quality of police-citizen encounters is significantly associated with police satisfaction (Hinds, 2008), and victimization experiences tend to increase negative attitudes toward the police (Cao et al., 1996; Apple and O'Brien, 1983; Homant et al., 1984; Koenig, 1980; Parks, 1984; Smith and Hawkins, 1973). There are many nuances to satisfaction in policing, as two groups of people who are both exposed to the same level of crime and disorder in the community, but are subject to different levels of aggressive enforcement, will have significantly different ratings of the police (Weitzer and Tuch 2006; 2004). Surveys have consistently revealed that black Americans believe they receive inferior police protection and disproportionately suffer from police abuse, so a decrease in satisfaction with the police highlights the low-quality nature of black Americans' encounters with the police (Ostrom and Whitaker, 1974; McGinnis, 1999:203). Overall, younger, male, and poorer racial/ethnic minorities living in urban environments are more likely to be involved in a police stop and some type of use-of-force incident (Boylstein, 2018). This can partially be attributed to the fact that police have a great deal of discretion in determining how to handle problems on the job; Black (1971) found that the police made arrests on only half the occasions they had legal grounds to (Weitzer and Tuch, 2006:3).

As black Americans and people of color are disproportionately targeted by the police and have overall lower quality interactions with the police, this rationalizes their lower satisfaction in

police performance and their fundamental inability to have similar experiences/satisfaction levels as white people in America (Weitzer and Tuch, 2006). Coupled with the low-quality nature of police encounters, these feelings of alienation discourage partnership with the police and their involvement in bottom-up governance at a local level. Further intensifying the issue of dissatisfaction and low participation, this leads to a negative reinforcement feedback loop, where black people and POC are continually disappointed by police performance, as they lack the ability and/or desire to participate in dictating the rules of an agency they feel both alienated from and antagonized by.

Socio-economic Status

I move on to discuss the relationship between socio-economic status and police satisfaction, in order to illuminate the barriers towards participating in bottom-up governance that lower income individuals face. First and foremost, it is important to note that there is a strong relationship between race and socio-economic status in America, as we see people of color disproportionately occupy lower social strata (Waddington et al., 2017:7). Moreover, socio-economic status has an established relationship with public attitudes on the police, where lower support is associated with lower socio-economic status (Waddington et al. 2017:7; Bayley and Mendelsohn 1969; Belson 1975; Brown and Benedict 2002; Schuck et al. 2008; Weitzer and Tuch 1999; 2002; 2005a; Taylor et al. 2010; Frank et al. 2005; Wu et al. 2009). Evidently, race and class have a complex, intersectional relationship, and although they seem to confound each other, both are equally valid and important characteristics to consider when measuring perceptions of police performance. There is also evidence that increased socio-economic status is associated with increases political participation (Verba and Nie, 1972; Scott and Acock, 1979). Regarding satisfaction with the police, people of lower socioeconomic status will be less likely

to participate in bottom-up governance for the co-production of public safety, as they face more barriers towards participation, including higher opportunity costs of lost wages. Therefore, these individuals will be less satisfied with the local police department's performance, as they are unlikely to insert their opinions in shaping the department's strategies, rules, and priorities. Additionally, as people of color disproportionately occupy lower social strata and maintain lower levels of political participation, the relationship holds that these marginalized individuals will have participate in lower levels of bottom-up governance than their white, wealthy counterparts.

Age

Next, I look at the relationship between age, police satisfaction, and likelihood of political participation, in order to clarify the relationship between an individual's age and likelihood of participating in bottom-up governance. In a review of the existing American literature, Brown and Bennet found that younger individuals tend to view the police less favorably than older individuals (Waddington et al., 2017:8; Brown and Benedict 2002:554). There is some disagreement on this finding, as Stewart et al. determined that people stay fairly consistent in their beliefs, where those with high support as a youth maintain similar views as they age, and vice versa (2014; Waddington et al., 2017:8). When examined together, age and race have more readily revealed an association with attitude towards the police, as younger people of color hold more negative views than older white individuals (Waddington et al. 2017:8; Decker 1981; Bridenball and Jesilow 2008; Reisig and Parks 2002; Ren et al. 2004).

More importantly, age has been found to be strongly associated with political participation (Goldstein and Morin, 2002; Gimpel et al., 2004), so I predict that those who are older will likely be more satisfied with the performance of their local police department, as they

will be more inclined to participate in shaping the supposed needs of their community, if those avenues of participation do, in fact, exist.

Gender

Lastly, I look at the relationship between gender, police satisfaction, and levels of political participation, in hopes to illuminate the relationship between gender and an individual's likelihood of participating in bottom-up governance. Although there is a general belief that men hold less favorable views towards the police than women, the statistical significance of gender is unclear (Waddington et al., 2017:8; Brown and Benedict, 2002). A number of studies were unable to find any gender differences (Reisig and Parks, 2002; Decker, 1981), while in some cases, women were actually found to have less favorable views of the police than men (Waddington et al., 2017:9; Brown and Coulter, 1983). The influence of gender is most visible when combined with the factors of age, race, and 'community context' (Cao et al. 1996) so that most unfavorable attitudes against the police are held by young black men living in disadvantaged conditions, while the most favorable attitudes are held by older white middle class women (Waddington et al. 2017:9; Lasley 1994; Weitzer et al. 2008).

Women have also been found to have consistently lower levels of political participation than men (Inglehart and Norris, 2003; Beauregard 2014). This has negative implications for their ability to participate in bottom-governance and to achieve similar levels of satisfaction as their male counterparts, who are more likely to insert their opinions and preferences on how the police department should be run. This means that women are more likely to experience lower levels of satisfaction, as they are less likely to participate in local bottom-up governance affect change in their local police department.

It is quite evident that there has been a remarkable amount of research done on demographic variables and individual characteristics that are associated with police satisfaction. My attention on bottom-up governance shifts away from this individualistic lens in hopes of clarifying the underlying mechanism that is associated with a citizen's ability to input their beliefs in the agenda-setting process of a local police department (or any governing structure, for that matter). The key factor that associates these demographic variables with satisfaction is not the demographic variable itself, but the ability and likelihood of meaningful political participation that accompanies each demographic identity. This leads me to propose my main hypothesis in the next section.

Part III: Methods

Bottom-Up Governance Hypothesis: Increased bottom-up governance in local policing will lead to increased community satisfaction.

Testing the Hypothesis

Dependent Variable: Satisfaction with Police Performance

As previously stated, the decision to use satisfaction as the primary measure of police performance originates from Elinor Ostrom's metric of satisfaction and use of citizen surveys in rating the quality of police services, but this method has also been widely used among others within this school of literature (Gill et al., 2014; Dean, 1980; Ren et al., 2004; Hinds, 2008; Lytle and Randa, 2015). The perception of performance by citizens matter, just as much as the traditional crime rates and statistics police departments choose to define their performance (Ostrom, 1976). The police office performs more roles than simply "crime fighter", and the outcome of the accumulation of their individual roles is seen through outsider perception on how well they do their job (Gorby, 2013).

No compiled database on police satisfaction surveys currently exists, so I made multiple web searches on Google's search engine, using the words "police satisfaction survey" and other similar terms, to track all potential surveys. Approximately 30 pages of results, or 300 possible web links, were available for review, and every survey link was examined to determine if the appropriate police satisfaction variable was measured in the survey. In total, 72 surveys were found to be compatible with my requirements and were included in this study. The survey sizes varied widely; the smallest survey was n=30 (Richmond Heights, MO), and the largest survey was n=5064 (Seattle, WA), with a mean survey size of n=974.77 and a standard deviation of 954.42. Generally, the survey response rates were fairly low (relative to the total voting age

population). The lowest response rate was 0.037%, and the highest was 5.5%, with a mean of 0.77% and a standard deviation of 0.97%. Given these low values, it is important to note that these survey results may not be a completely accurate characterization of the opinions of the entire community. However, there is no other available survey data asking these questions on community satisfaction with the police, so these low values will simply act as a caveat in the reliability of any findings determined from this study.

If multiple years of survey data were available for a police department, the data from the most recent year was included for this study; 69 surveys were conducted within the last 5 years (2016-2020), and 3 were conducted between 2012-2015 (Table 1). Using the Census Bureau’s Region and Division codes to depict the geographic extent of the included surveys, the breakdown indicates that all four regions are included, although region 3 is over-represented and region 1 is under-represented (Table 2). All nine Census Bureau-designated divisions are also included in this study, although these divisions are represented at varying frequencies (Table 3).

Table 1. Year in which the satisfaction survey was performed.

Year	Frequency	Percent (%)
2012	1	1.39
2013	1	1.39
2015	1	1.39
2016	6	8.33
2017	10	13.89
2018	15	20.83
2019	26	36.11
2020	12	16.67
Total	72	100

Table 2. Breakdown of regions included in the study, using Census Bureau region codes.

Region	Frequency	Percent (%)
1: Northeast	7	9.72
2: Midwest	18	25
3: South	32	44
4: West	15	20.83
Total	72	100

Table 3. Breakdown of divisions included in the study, using Census Bureau division codes.

Division	Frequency	Percent (%)
1: New England	4	5.56
2: Middle Atlantic	3	4.17
3: East North Central	11	15.28
4: West North Central	7	9.72
5: South Atlantic	21	29.17
6: East South Central	2	2.78
7: West South Central	9	12.5
8: Mountain	7	9.72
9: Pacific	8	11.11
Total	72	100

In order to be included in this study, surveys were required to include a question asking about the respondent's level of satisfaction with their local police department. Terms that were deemed equivalent to satisfaction with the police include police performance, quality of service delivery, and police competence, although a majority of the surveys did specifically use the term "satisfaction". Common survey questions included the phrases: "rate your satisfaction with the police department", "rate the performance of the police", "rate the quality of service delivery", and "rate the competence of the police department". The majority of police surveys that were included were targeted towards assessing citizen satisfaction at the town/city level, which works very well with testing my hypothesis of bottom-up governance in community policing, as opposed to surveys determining public opinion on the state police. However, three county-wide satisfaction surveys were included in this study (Brown County, WI; Prince William County, VA; Fairfax County, VA), as well as the District of Columbia. Consequently, I use the all-encompassing term "localities" to refer to these levels of community organization in this paper.

Surveys were only included in this study if the satisfaction question referred to the performance of the police department as a whole. Of the ~228 web links that were assessed but ultimately not included, one fourth did not yield surveys with any satisfaction question; one

fourth only inquired about respondent's satisfaction with specific interactions with police officers; one eighth yielded links to actual surveys, but I was unable to obtain their results after emailing/reaching out to the locality's government, either because they no longer had access to the survey results, or I received no response; one eighth were survey results for state or foreign police departments; and one eighth of the web links were not surveys or surveys results, but police-related websites and research articles. The remaining eighth of evaluated, but ultimately excluded, web links were surveys targeted only towards people who have had recent interactions with the police, as these surveys only collected responses from an uncharacteristic sub-section of the locality's population (namely, those who have had recent, direct interactions with the police). All surveys included in this study either had to be available for any citizen of the locality to respond, or the surveyors had to have randomly sampled their locality for respondents.

It is important to note that the quality of these police satisfaction surveys widely varied. A number of localities hired outside research firms to conduct methodologically-sound citizen surveys, while others simply posted survey links on the police department's website, making news and social media posts to encourage individuals to fill out the survey; the majority of surveys included in this study lie somewhere in between these two extremes. Additionally, in most cases, the groups conducting the satisfaction surveys were the police departments themselves, but in other cases, the surveyors were the locality's government itself or hired, external research organizations. I did not think it was appropriate to cherry pick data, simply based on my perception of the quality of the survey, so I included all surveys that answered my specific question in hopes of preventing any potential bias in this regard. I would expect that excluding seemingly lower quality surveys would produce an upwards bias in satisfaction. This is because higher quality satisfaction surveys may indicate a higher level of community

investment in determining the opinions and values of the citizens. Essentially, these surveys would qualify as higher quality of avenues for bottom-up governance.

Although there is no way to adjust for this bias, it is important to recognize that there is likely an upward bias in the localities that carry out these satisfaction surveys. Conducting citizen satisfaction surveys in itself is a form of bottom-up governance, as citizens are able to signal to the police departments what their preferences and opinions on the department's performance is. More specifically, these satisfaction surveys are an avenue for citizen participation and voicing their opinion. Therefore, police departments with perceivably low performance are disincentivized from conducting these surveys, making this data publicly available, and officially recognizing their poor performance.

I chose to record satisfaction on a 0-3 scale (a 4-point scale), as this was the most commonly used scale in the surveys. These surveys would only give four possible answers to choose from (0, 1, 2, 3) after asking the appropriate "police performance rating" question. A score of 0 would mean the respondent was unsatisfied with police performance, 1 would indicate not very satisfied, 2 would indicate somewhat satisfied, and 3 would indicate very satisfied. Essentially, a lower score refers to lower satisfaction with police performance. The results to these surveys would either provide an already calculated average satisfaction score for the locality, or they would give the frequencies of each answer that respondents selected, and I would calculate the average score myself.

When a 0-3 scale was not used in a particular survey, a weighted average calculator was used to proportionately rescale the satisfaction values. With these recalculations, the lowest possible value was kept constant at 0, the highest possible value was kept constant at 3, and any intermediate values were kept at equal intervals to ensure consistency with the 4-point scale I

have chosen for this analysis (0-3). For example, a 3-point scale with the possible answers of (0, 1, 2) was recalculated as (0, 1.5, 3) to fit within my chosen (0-3) scale. This means that the lowest possible score of 0 would remain 0, the “average” score of 1 would become the “average” score of 1.5, and the highest possible score of 2 would become the highest possible score of 3. Note that the intervals between values in each scale remains equal. As another example, a 5-point scale (0, 1, 2, 3, 4) was recalculated as (0, 0.75, 1.5, 2.25, 3), and so on. Again, the lowest possible score of 0 remains 0, the “average” score of 2 becomes the “average” score of 1.5, and the highest possible score of 4 would become the highest possible score of 3. These conversions were relatively simple to make, as the magnitude of the scale does not change the fact that a higher score means higher satisfaction.

Table 4. Overview of the dependent variable fitted on a 4-pt scale (0-3): respondent’s satisfaction in the local police department.

Score	Frequency	Percent (%)
0-0.49	0	0
0.5-0.99	0	0
1-1.49	2	2.78
1.5-1.99	19	26.4
2-2.49	37	51.4
2.5-3	14	19.4
Total	72	100

Independent Variable: Bottom-Up Governance

As previously stated, my novel measure of bottom-up governance is based on Elinor Ostrom’s model of co-production of public goods and services. This refers to how citizens and government structures may work together to produce public goods; in this case, the good is public safety. The dimensions of bottom-up governance that I have determined are: level of dependence on internal funding, likelihood of citizen participation, avenues for citizen participation, and ease of citizen participation (% internet access and % English speaking) (Table 5). To summarize my model:

Bottom up Governance

$$= \text{Internal Funding Dependence} + \text{Likelihood of Citizen Participation} \\ + \text{Avenues of Citizen Participation} + \text{Ease of Citizen Participation}$$

Table 5. Summary statistics of the independent variable: dimensions of bottom-up governance in local community policing.

Variable	Mean	Std. Dev.	Min	Max
Dependence on Internal Funding (%)	97.5	3.28	80.1	100
% Voting in Local Elections	26.5	17.5	5.90	86.6
Avenues of Citizen Participation	2.23	1.12	0	4
% Internet Access	86.3	6.38	66.3	97.7
% English Speaking	77.6	15.6	32.8	95.9

Note: n = 72

In the following sections, I will provide my rationale and justifications for including each of the four dimensions in my model for Bottom-Up Governance.

Relative Dependence on Internal vs. External Funding

While studying the relationship between bottom-up governance and the police, Boettke et al. (2016:3) found that federal policy over the last thirty years has subsidized local police involvement in federally based anti-drug and anti-terrorism initiatives, “resulting in a set of perverse incentives that has directed the efforts of local police agencies away from community safety and toward a different set of objectives”. They argue that such federal incentives are inherently incompatible with the objectives of community-based policing, where the goals and priorities of the police are determined by the community from the bottom-up. Federal funding can pull the local police department’s priorities away from what the community truly values and instead towards federal initiatives. Extending on Boettke et al. (2016)’s argument from only considering federal funding, I have chosen to include all external sources of funding in my variable of external funding dependence, as I believe this outside monetary influence will direct

local police efforts away from the community and towards an externally determined set of policing priorities.

The level of external funding of local police departments in this study was determined through a systematic review of each locality's Comprehensive Annual Financial Report or Annual Budget Report. Preference was given to using the locality's Annual Budget Report, which was more likely to have the precise amounts and descriptions of grants acquired from outside sources. In these annual budget reports, a monetary value for total dependence on external funding was rarely given. Therefore, this value was calculated for each locality through a careful, methodical summation of all external grants and aid projects listed in the annual budget. The variable "external funding" includes federal and state categorical aid to local police departments, as well as categorical aid from outside organizations to the police. Common external sources of funding seen in the budget reports include the Edward Byrnes Justice Assistance Grant (JAG), Community Oriented Policing Services (COPS) grants, and Drug Enforcement Agency (DEA) federal grants. Other external sources of funding include High Intensity Drug Trafficking Area grants (HIDTA, a specific DEA grant), Safe Neighborhoods grants, grants for mobile data computers, and asset forfeiture funds.

To ensure consistency, the police budget for the year of the police satisfaction survey was recorded, not the most recently available budget. If a budget was not available for the year of the survey, the closest available year was used instead. Additionally, in the rare instances that the annual budget did not provide "actual values" (<5 cases), the listed "projected budget estimate" values were used instead.

Once the total monetary value of external funding was determined for each locality, the level of external dependence was calculated by dividing the total external funding value by the local police department's total budget:

$$\text{External Funding Dependence (\%)} = \frac{\text{Total External Grants (\$)}}{\text{Total Police Budget (\$)}} * 100$$

Logically, internal funding dependence was calculated by subtracting the above noted value from 100:

$$\text{Internal Funding Dependence (\%)} = 100 - \text{External Funding Dependence (\%)}$$

This re-calculation was done for ease of considering the effect of increasing bottom-up governance on satisfaction. An increase in internal funding dependence will likely lead to more satisfaction, as these police departments will be more amenable towards incorporating the opinions of the citizens in their agenda, due to a relative lack of external funding influencing their priorities.

Likelihood of Citizen Participation

Neatly coalescing with the concept of bottom-up governance, Sharp (1980) emphasizes the participatory attitude that the term co-production conveys, as “citizens of a democratic society... need to actively engage in their own governance” in order for the resulting priorities of local public safety to truly reflect their own beliefs and opinions (McGinnis, 1999:22). Following this line of reasoning, I used voter turnout at general mayoral elections as an indicator for likelihood of citizen participation in bottom-up governance of policing, as localities with higher voter participation will likely have more engaged citizens who will participate in local decision making.

In 13 localities, including the three counties, mayoral election data was either unavailable or did not exist. In cases where the locality did not have a mayor, the data for the next most

contested local seat were collected instead: selectman, board supervisor, city/town council member, or county board member. These were at-large offices and positions, where citizens of the entire locality could vote, not only a specific ward or district. For the three counties included in this study, each county was addressed differently given their unique political arrangements. For Prince William County, election data was taken for their most contested position: chairman of the board of supervisor's seat. For Brown County, election data was collected for the most contested county-wide position: county district attorney. For Fairfax County, the total number of votes cast for mayors of each town within the county were added together. In one instance (Burbank, CA), the mayor was appointed by the city council, so city council member election data were used instead.

Similarly to the external funding measure, the election that took place in the year closest to the survey was used. The primary sources of data on voter turnout were Ballotpedia and the local government's official website. However, in many of the smaller towns, data were unavailable on these sites, so other sources were used to determine this information, primarily the local newspapers. Once raw data on the number of ballots cast was collected, voter turnout was calculated by dividing the total number of ballots cast by the locality's voting age population:

$$\text{Voter Turnout (\%)} = \frac{\text{\# of Ballots Cast}}{\text{Voting Age Population}} * 100$$

Data to determine the voting age population were collected from the U.S. Census Bureau's website. In order to ensure the most accurate voter turnout estimate for the time of the survey and election, if the election took place between 2015-2020, the 2019 population estimate was used, and if the election took place between 2010-2014, the 2010 population estimate was

used. Voting age population was calculated by multiplying the locality's total population size by the proportion of the population over the age of 18 (0-1):

$$\text{Voting Age Population} = \text{Total Population Size} * (\text{Proportion over 18 years})$$

Avenues of Citizen Participation

Moore and Braga argue that the community should determine the police department's values, and these organizations should be able to adapt to how citizens define them (2003). Although they do not explicitly use the term, it is clear that this philosophy closely aligns with the concept of bottom-up governance. In order to effectively incorporate community values into the values of the police, the local department "need[s] to see [its] role as creating circumstances that encourage citizen participation and not just providing public services... [the department] need[s] to nurture citizen's capacity for self-governance..." (Sharp, 1980; McGinnis, 1999:22). Following this line of reasoning, avenues of citizen participation in the local police department were included in the measure of bottom-up governance to estimate the relative ease by which citizens are able to insert their concerns and opinions on the local police department's performance, and to provide feedback if they are truly prioritizing issues that align with the community's.

Avenues of participation was measured on a 5-pt scale (0-4): 0 being no avenues for participation, 1 being 1 avenue, 2 being 2, and so on. This translates to a score of 2 meaning average quality avenues and a score of 4 being high quality avenues. The available avenues for citizen participation were determined by assessing each police department's official web page, as well as local news articles posted about the department. Often, departments would have a page dedicated to community outreach and engagement efforts, and those with proper avenues would heavily advertise/promote their existence on the web page. This made it relatively simple to

determine the total number and types of avenues for citizen participation. These avenues most notably include citizen councils, advisory committees, public meetings and hearings, public workshops, and citizen complaint review boards. The table below shows an exhaustive list of all possible avenues for participation I found (6). If high quality avenues existed in a locality (namely, citizen’s councils and public meetings/hearings whose primary purpose is to learn about citizen’s priorities and take them into consideration), the score would increase by an additional 1. Otherwise, the remaining avenues were weighted equally for lack of any exceptional reason to increase/decrease their weights, as was the case for citizen’s councils and public meetings/hearings.

Table 6. Overview of possible avenues for citizen participation, a dimension of bottom-up governance.

Avenue	Score
Citizen councils	2 (high quality)
Public meetings/hearings	2 (high quality)
Advisory committees	1
Resident councils	1
Neighborhood meetings	1
Public workshops	1
Steering committees	1
Citizens’ academies	1
Commission boards	1
Citizen complaint review boards	1
Community outreach teams	1
Community liaisons	1
Coffee with a Cop programs	1

It is important to note that the mere existence of avenues for citizen participation does not mean that these avenues are actually being used. This measure is only one dimension of the bottom-up governance puzzle, working closely in conjunction with voter turnout, or likelihood of citizen participation. Without active citizen engagement, the existence of avenues for citizen participation is pointless; without avenues for citizen participation, any active citizen

engagement cannot be effectively channeled towards creating substantive change in the local police department's priorities. Both these dimensions are crucial aspects of bottom-up governance, and it is clear that one cannot be considered without the other.

Ease of Citizen Participation

Closely related to the aforementioned dimension of bottom-up governance, ease of participation more precisely illuminates the barriers towards accessing and utilizing such avenues for citizen participation. Ease of citizen participation is broken down into two quantitative measures: internet access and language barriers to participation.

Internet Access

As previously mentioned, Sharp (1980) emphasizes the participatory attitude that the term co-production conveys (and by extension, bottom-up governance). "Citizens of a democratic society need access to information that enables them to evaluate the performance of public officials" (McGinnis, 1999:22). With the "access to information" that the internet provides, learning about opportunities to engage with avenues for citizen participation is much simpler, news articles about local police-related events are quickly available for citizens, and citizens are generally much more capable of staying informed about their local community. If citizens lack the information on *how* to participate in local governance, it is much more difficult for them to determine how to voice any opinions they do hold. If citizens lack the information on *what* is actually happening in their locality, it is unlikely that they will feel invested in participating in local self-determination about a topic they feel so unfamiliar with. Essentially, a lack of internet access is a barrier to citizen participation. Moreover, "if citizens are uninformed about what is happening in their community, their subjective perception of public safety may not necessarily be related to actual public safety outcomes", making access to information *that* much

more important to take into consideration, especially in this study measuring citizen satisfaction with local public safety (Ho and Cho, 2017).

Thus, the level of internet access within each locality was included in the measure of bottom-up governance to estimate the relative ease by which citizens are able to stay informed and connected to opportunities for citizen participation in the local police department. Data on each locality's internet access were collected from the U.S. Census Bureau, measured through the percent of houses with a broadband internet subscription between 2015-2019.

Language Barrier to Participation

A language barrier works in conjunction with internet access to reduce the ease of citizen participation in determining the local police department's rules, priorities, and agenda. Those who are less comfortable reading and speaking English will have greater difficulty with:

1. understanding how to access relevant information on the avenues of citizen participations,
2. finding out what current events are occurring that are related to local policing,
3. comprehending any information they do learn about the local police department, and
4. determining how to effectively participate and voice their opinions on the local police department in a language they are not completely comfortable with.

Therefore, the proportion of citizens who speak languages other than English at home was included in the measure of bottom-up governance to estimate the relative ease of citizen participation, as those who are primarily non-English speaking will likely have a more difficult time actively participating and voicing their opinions on the local police department. I collected these data from the U.S. Census Bureau, which measured the percent of people over the age of 5 who speak a language other than English at home between 2015-2019 in each locality.

Logically, the proportion of citizens who speak English at home was calculated by subtracting the non-English speaking percentage from 100:

$$\% \text{ English Speaking} = 100 - \% \text{ NonEnglish Speaking}$$

This re-calculation was done for ease of considering the effect of increasing bottom-up governance on satisfaction. An increase in the proportion of English-speaking individuals will likely lead to more satisfaction, as these individuals are more able to voice their opinion and “construct” a police department that represents their personal preferences.

Confounding Variables and Controls

As noted in the literature review, the study of the effect of demographic variables on citizen satisfaction with the police, as well as citizen participation in politics, is well documented. Therefore, it is important to control for these variables when assessing the specific effect of bottom-up governance on satisfaction, so as to separate this effect from the factors that themselves affect the ability to participate in bottom-up governance. To briefly elucidate these relationships:

1. **Age:** Older age leads to increased likelihood of political participation. This indicates increased bottom-up governance and, consequently, increased satisfaction.

Younger age will lead to decreased likelihood of political participation. This indicates decreased bottom-up governance and, consequently, decreased satisfaction.

2. **Gender:** Males have higher rates of political participation. This indicates increased bottom-up governance and, consequently, increased satisfaction.

Females have lower rates of political participation. This indicates decreased bottom-up governance and, consequently, decreased satisfaction.

3. **Race:** White people have higher rates of political participation. This indicates increased bottom-up governance and, consequently, increased satisfaction.

Black people have lower rates of political participation. This indicates decreased bottom-up governance and, consequently, decreased satisfaction.
4. **Education:** Higher levels of education are associated with increased rates of political participation. This indicates increased bottom-up governance, and consequently, increased satisfaction.

Lower levels of education are associated with decreased rates of political participation. This indicates decreased bottom-up governance and, consequently, decreased satisfaction.
5. **Income:** Higher income levels are associated with increased rates of political participation. This indicates increased bottom-up governance and, consequently, increased satisfaction.

Lower income levels are associated with decreased rates of political participation. This indicates decreased bottom-up governance and, consequently, decreased satisfaction.
6. **Poverty:** Higher levels of poverty are associated with decreased rates of political participation. This indicates decreased bottom-up governance and, consequently, decreased satisfaction.

Lower levels of poverty are associated with increased rates of political participation. This indicated increased bottom-up governance and, consequently, increased satisfaction.

Additionally, in looking at police performance, Ostrom found that smaller police forces that patrol smaller jurisdictions are just as effective at satisfying citizen's demands as larger, city-wide consolidated police departments with larger populations under its jurisdiction, if not achieving higher levels of satisfaction (Ostrom and Whitaker, 1973). She determined that smaller police forces are more likely to have officers that live in the community, are more aware of local needs, and are more likely to have existing relationships with members of the community, allowing for increased levels of communication. As population size may have an impact on citizen satisfaction, it is important to also control for this variable when assessing the effect of bottom-up governance on satisfaction.

These data on the general demographic information of each locality were collected from the U.S. Census Bureau's website (Table 7). For age, the percent of people under 18 years and over 65 years old were recorded, estimated as of July 1, 2019. For gender, the percent of female persons in the locality was recorded, estimated as of July 1, 2019. For race and origin, the following percentages were recorded using estimates as of July 1, 2019: white alone, not Hispanic or Latino; black or African American alone; Asian alone; and Hispanic or Latino. For education, the percent of people, ages 25+, who have graduated high school or higher was recorded, as well as those with a bachelor's degree or higher, estimated between 2015-2019. For income, the median household income (in 2019 dollars) was recorded, estimated between 2015-2019. For poverty, the percent of the population in poverty was recorded, estimated between 2015-2019. The "Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty" (2021). For population size, the 2019 population estimate was used for localities with a satisfaction

survey that took place between 2015-2020, and if the survey took place between 2010-2014, the 2010 population estimate was used to ensure consistency between the various measures.

Table 7. Demographic variables recorded for each locality in the study from U.S. Census Bureau and summary statistics.

Variable	Breakdown	Mean	Std. Dev.	Min	Max
Age	% 65+	21.9	4.33	12.8	33.6
	% <18	13.5	3.33	6.4	22.7
Gender	% Female	51.0	1.32	46.8	54.7
Race	% White alone, not Hispanic or Latino	56.7	19.8	11.1	91.2
	% Black or African American alone	15.8	15.4	0.5	59.5
	% Asian alone	8.88	11.2	0.1	66.9
	% Hispanic or Latino	15.5	12.3	2.1	45.0
Education	% Highschool graduate or higher, persons age 25+	90.7	5.64	66.8	98.5
	% Bachelor’s degree or higher, persons age 25+	43.3	15.0	16.9	83.5
Income	Median household income (\$)	73,373	24,793	30,907	135,565
Poverty	% Population in poverty	13.0	7.1	0.5	32.7
Population	Estimation of population size	324,684	485,503	8,006	2,693,976

To summarize, in addition to these seven confounding variables, I constructed two variables to measure community satisfaction with the local police department and to measure bottom-up governance, taking into consideration its four dimensions. For my Bottom-Up Governance Model, I have chosen to weigh each of the four dimensions equally, as each dimension is important in its own right and contributes significantly to the general outcome of “bottom-up governance”:

$$\begin{aligned}
 & \textit{Bottom up Governance} (0 - 10) \\
 & = 0.25 * \textit{Internal Funding Dependence} + 0.25 * \textit{Local Voter Turnout} \\
 & + 0.25 * \textit{Avenues of CP} + 0.25 * \textit{Ease of CP}
 \end{aligned}$$

I will proceed to use these variables to test my hypothesis on the relationship between bottom-up governance and citizen satisfaction with the local police department.

Part IV: Results

In the following section, I present the results of the Bottom-Up Governance model I have constructed on predicting citizen satisfaction with local policing. The four dimensions of bottom-up governance that I include in my model are: internal funding dependence, likelihood of citizen participation, avenues for citizen participation, and ease of citizen participation. To test this model, I ran an Ordinary Least Squares (OLS) regression on the dataset that I have constructed. Including the relevant controls in my model will account for their influence on satisfaction, ensuring that the outcome we see can truly be attributed to bottom-up governance. I expect to see a positive relationship, where an increase in bottom-up governance leads to increased citizen satisfaction with their local police department. The coefficient of the modeled relationship should be positive and statistically significant. Additionally, to provide support for the robustness of my Bottom-Up Governance model, I will create four supplementary models, changing the relative weights of each dimension of bottom-up governance that I include. This will show that the outcome I expect – that increased bottom-up governance leads to increased satisfaction with local policing – is not contingent upon the model I originally chose to use.

Data Visualization

To preface my data analysis, I first undertook a number of general data visualization measures to become familiar with the dataset that I have constructed and to assess whether the data follow a normal distribution.

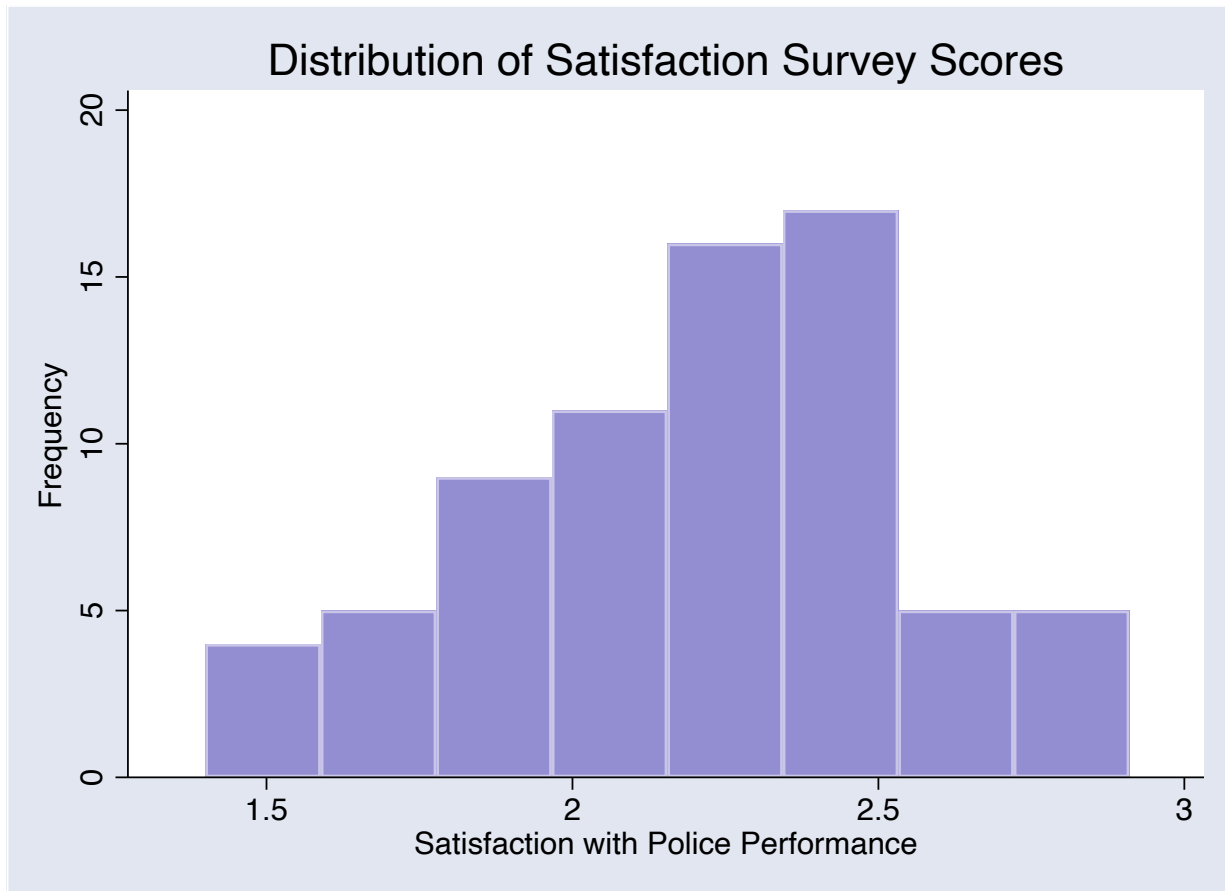


Figure 1. A histogram displaying the distribution of satisfaction scores from the 72 total localities included in this study. The minimum satisfaction score was 1.4, the maximum score was 2.91, the mean score was 2.2, and the standard deviation was 0.346.

Seen in Figure 1 above, the distribution of satisfaction scores is skewed slightly to the left, but overall, it does generally follow a normal distribution. It is important to note that no locality scored below a 1.4, despite the fact that the range of theoretical scores was between 0-3. On the other hand, the highest score seen in this dataset (2.91) was only 0.09 points away from a “perfect” satisfaction score of 3.

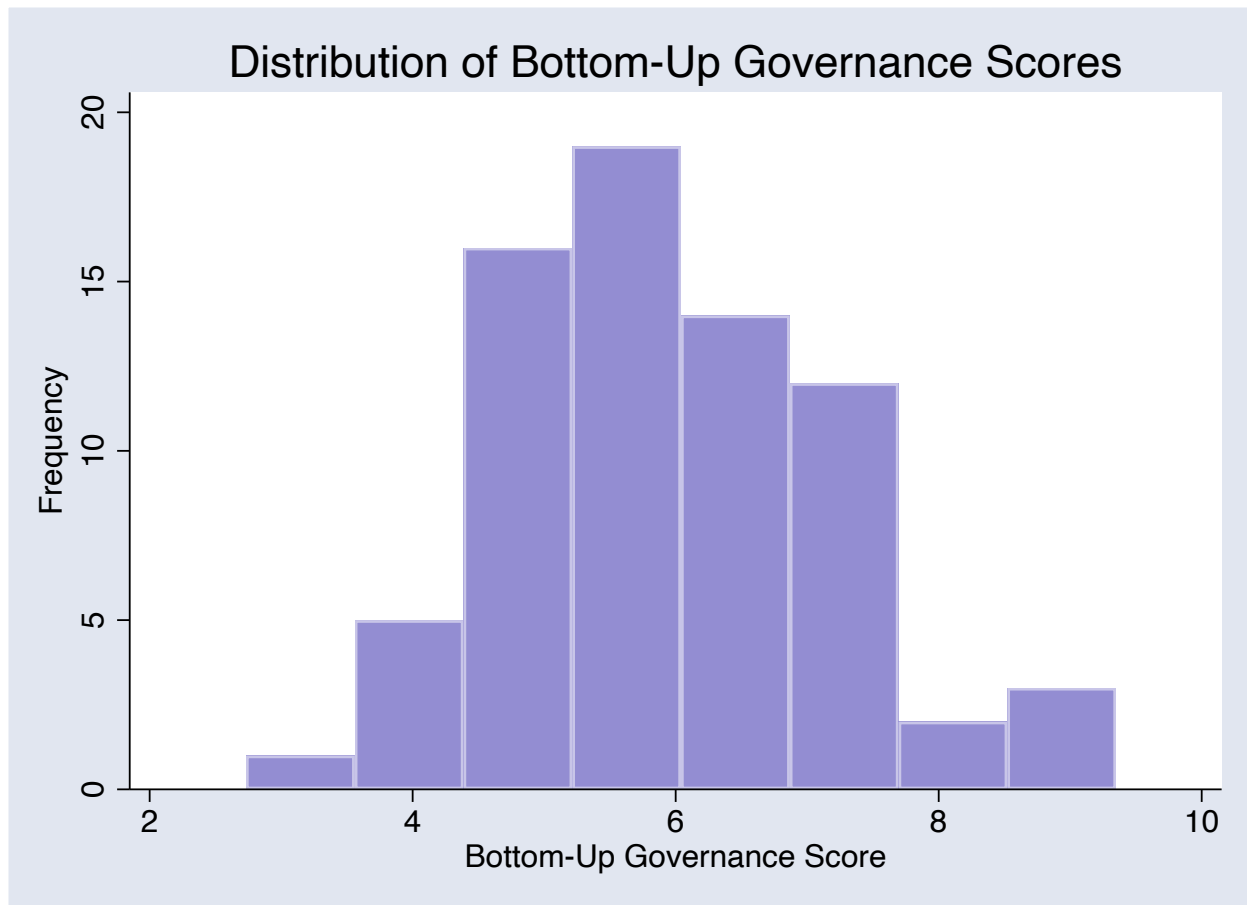


Figure 2. A histogram displaying the distribution of bottom-up governance scores from the 72 total localities included in this study. The minimum bottom-up governance score was 2.73, the maximum score was 9.35, the mean score was 5.93, and the standard deviation was 1.29.

Seen in Figure 2 above, the distribution of bottom-up governance scores is roughly normal, with a small, uncharacteristic peak occurring towards the higher scores. Similarly to the satisfaction scores, there is an overall upwards bias in bottom-up governance scores. The lowest score was 2.73, despite the fact that the theoretical range of possible scores was 0-10. The highest score was 9.35, only 0.65 points away from a “perfect” bottom-up governance score. Seeing that both my independent and dependent variables roughly follow a normal distribution, I feel comfortable using an OLS regression to test for the relationship, as the assumption of normality is fulfilled by these variables.

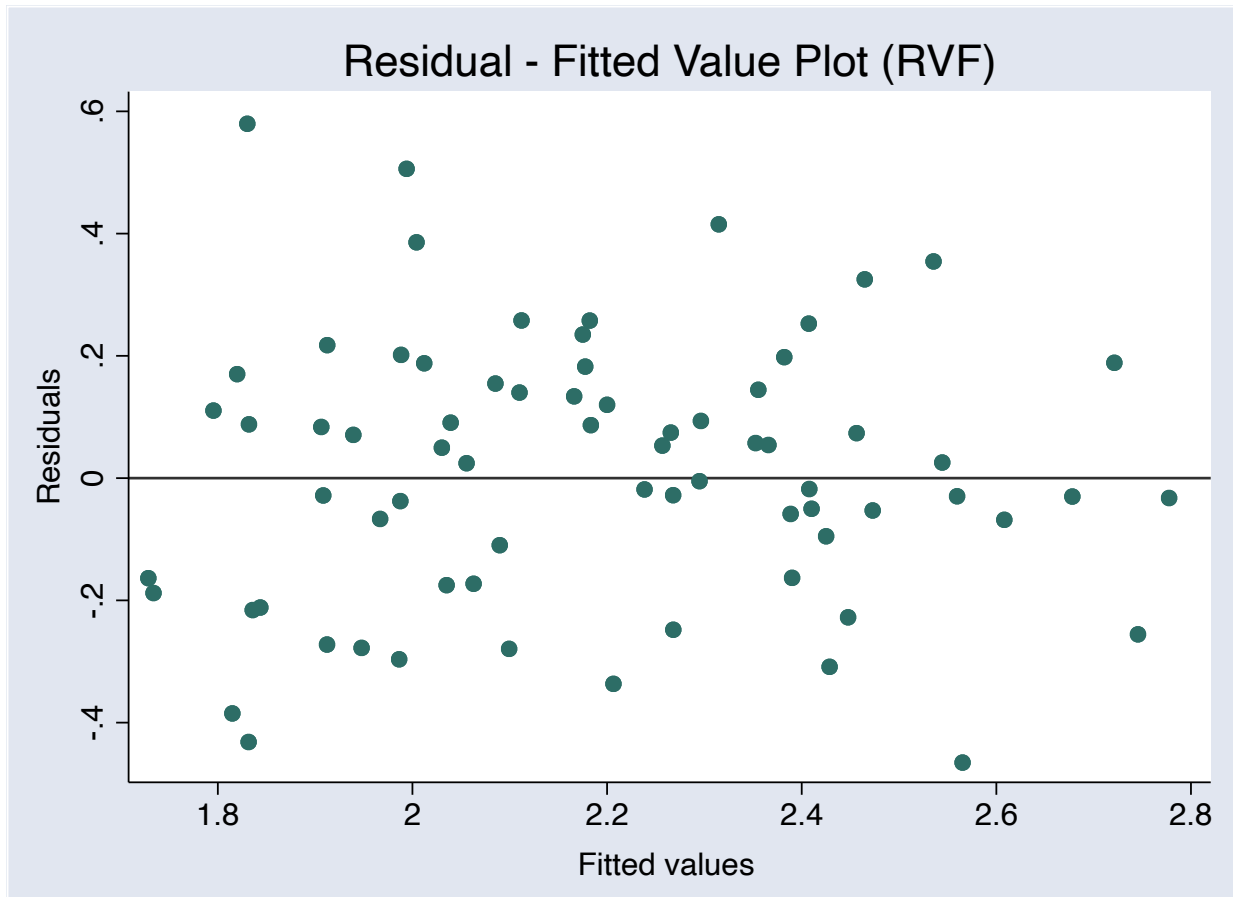


Figure 3. A residual-fitted value plot of bottom-up governance and citizen satisfaction with the local police department. Each point represents an individual locality (n=72).

Another main assumption for using an OLS regression to model a given relationship is the homogeneity of variance of the residuals. If the model is well-fitted to the variables, then no pattern should exist. Figure 3 depicts no discernable pattern in the plotted residuals. Therefore, I again feel justified in my use of an OLS regression to model the relationship between bottom-up governance and satisfaction in my analysis.

Feeling confident in my decision to use an OLS regression, I next constructed a scatterplot to visualize the general relationship between bottom-up governance and satisfaction with the local police department.

Relationship between Bottom-Up Governance and Satisfaction

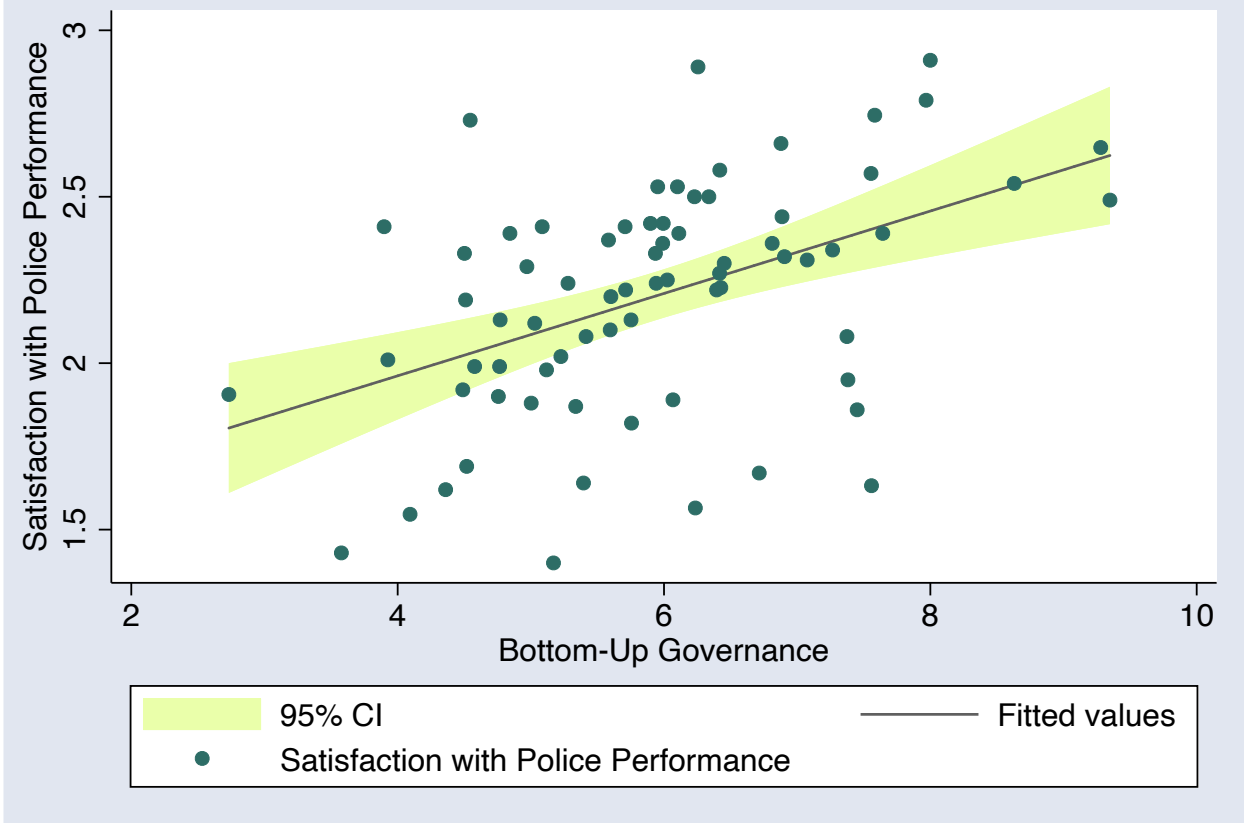


Figure 4. A scatterplot displaying the relationship between bottom-up governance and satisfaction scores. A line of best fit and 95% confidence interval were included to highlight the general trends between increased bottom-up governance and satisfaction. Each point represents a different locality.

As seen above, there is a subtle but discernible positive trend in citizen satisfaction with the police as bottom-up governance increases (Figure 4). The linear fit that is overlaid on the figure indicates that a one unit increase in a locality's bottom-up governance score leads to a 0.124 increase in the satisfaction score. Given the small scale used for my satisfaction variable (0-3), a 0.124 increase in satisfaction is not trivial; this is roughly equivalent to a 4% increase in satisfaction with every unit increase in the bottom-up governance score. Nevertheless, this apparent relationship does not control for the confounding variables that I have taken into consideration. Therefore, I cannot confidently attribute this increase in satisfaction to bottom-up governance at this point.

Linear Regression Analysis

Now, I present the core finding of my research: an ordinary least squares regression model on my constructed bottom-up governance independent variable, the citizen satisfaction dependent variable, and the seven controls I have chosen to include in this analysis. I expect to find a positive relationship between bottom-up governance and satisfaction; the coefficient of the modeled relationship should be positive and statistically significant.

Table 8. Regression analysis of the relationship between Bottom-Up Governance and Satisfaction with Police Performance.

Variable	Model 1 (w/ controls)	Model 2 (no controls)	
<i>Independent Variable</i>			
Bottom-Up Governance	0.0647* (0.0295)	0.124*** (0.0283)	
<i>Control Variables</i>			
Age	Age under 18	0.0271* (0.0113)	--
	Age over 65	0.0134 (0.0138)	--
Gender	-0.0636* (0.0301)	--	
Race	Black alone	0.0853** (0.024)	--
	Asian alone	0.0943** (0.0256)	--
	Hispanic or Latino	0.0912*** (0.0245)	--
Education	White alone	0.089*** (0.024)	--
	HS Graduate +	0.0244* (0.012)	--
Income	BS Degree +	-0.0019 (0.0044)	--
		-0.00000394 (0.00000333)	--
Poverty	-0.00577 (0.00999)	--	
Population Size	-0.000000181* (0.0000000745)	--	
Constant	-6.068 (2.996)	1.467 (0.172)	

Note: *** p < .001, ** p < .01, * p < .05, n = 72

Table 8 lays out the coefficients and standard deviations (in parentheses) for satisfaction, the dependent variable, and all of my previously justified controls. I find the expected positive relationship between bottom-up governance and satisfaction; more specifically, a one unit increase in a locality's bottom-up governance score leads to a 0.0647 increase of its satisfaction score, after controlling for all other variables in the model ($p = 0.032$). The 95% confidence interval for the model (0.0056, 0.124) does not cross zero. Therefore, using a 5% significance level, I have evidence to support the hypothesis that there is a statistically significant impact of bottom-up governance on the level of satisfaction citizens experience for their local police departments.

Additional Testing

As previously stated, I weighed each of the four dimensions equally for my main Bottom-Up Governance model:

Bottom up Governance (0 – 10)

$$\begin{aligned} &= 0.25 * \textit{Internal Funding Dependence} + 0.25 * \textit{Local Voter Turnout} \\ &+ 0.25 * \textit{Avenues of CP} + 0.25 * \textit{Ease of CP} \end{aligned}$$

To provide further support for the robustness of my model, I have changed the relative weights of each dimension of bottom-up governance that I chose to include. This will show that the outcome I have found – that increased bottom-up governance leads to increased satisfaction with local policing – is not contingent on the proportions I originally decided upon.

Internal Funding Dependence

First, I have chosen to increase the relative weight of internal funding dependence in my model:

Bottom up Governance

$$= 0.4 * \text{Internal Funding Dependence} + 0.2 * \text{Local Voter Turnout} \\ + 0.2 * \text{Avenues of CP} + 0.2 * \text{Ease of CP}$$

Table 9. Regression analysis of the relationship between Bottom-Up Governance and Satisfaction with Police Performance, heavily weighing internal funding dependence.

Variable	Model 1 (w/ controls)	Model 2 (no controls)
<i>Independent Variable</i>		
Bottom-Up Governance	0.0526* (0.0303)	0.128*** (0.0301)
<i>Control Variables</i>		
Age		
Age under 18	0.0261* (0.0115)	--
Age over 65	0.0124 (0.014)	--
Gender	-0.0644* (0.0305)	--
Race		
Black alone	0.0847** (0.0244)	--
Asian alone	0.0928** (0.0256)	--
Hispanic or Latino	0.0897** (0.0248)	--
White alone	0.0884** (0.0243)	--
Education		
HS Graduate +	0.0257* (0.0122)	--
BS Degree +	-0.00247 (0.00444)	--
Income	-0.0000033 (0.00000335)	--
Poverty	-0.00593 (0.0101)	--
Population Size	-0.000000163* (0.0000000745)	--
Constant	-6.013 (3.04)	1.37 (0.199)

Note: *** p <.001, ** p <.01, * p <.1, n = 72

Table 9 lays out the coefficients and standard deviations for satisfaction and my previously justified controls within this newly adjusted Bottom-Up Governance model. I find the expected positive relationship between bottom-up governance and satisfaction; we see that a one unit increase in a locality's bottom-up governance score leads to a 0.0526 increase of its satisfaction score, after controlling for all other variables in the model ($p = 0.088$). With the adjusted model, the p-value increased by 0.056 (from 0.032). Nevertheless, using a 10% significance level, I have evidence to support the hypothesis that there is a statistically significant impact of bottom-up governance on the level of satisfaction citizens experience for their local police departments.

Likelihood of Citizen Participation

Next, I increased the relative weight of likelihood of citizen participation in my model:

Bottom up Governance

$$= 0.2 * \textit{Internal Funding Dependence} + 0.4 * \textit{Local Voter Turnout} \\ + 0.2 * \textit{Avenues of CP} + 0.2 * \textit{Ease of CP}$$

Table 10 shows the coefficients and standard deviations for satisfaction and my previously justified controls within this adjusted Bottom-Up Governance model. Again, I find the expected positive relationship between bottom-up governance and satisfaction; more specifically, a one unit increase in a locality's bottom-up governance score leads to a 0.0494 increase of its satisfaction score, after controlling for all other variables in the model ($p = 0.096$). With the adjusted model, the p-value increased by 0.064 (from 0.032). Nevertheless, using a 10% significance level, I continue to have evidence supporting the hypothesis that there is a statistically significant impact of bottom-up governance on citizen satisfaction with local police departments.

Table 10. Regression analysis of the relationship between Bottom-Up Governance and Satisfaction with Police Performance, heavily weighing internal funding dependence.

Variable		Model 1 (w/ controls)	Model 2 (no controls)
<i>Independent Variable</i>			
Bottom-Up Governance		0.0494* (0.0292)	0.101** (0.028)
<i>Control Variables</i>			
Age	Age under 18	0.0282* (0.0115)	--
	Age over 65	0.0127 (0.0141)	--
Gender		-0.0627* (0.0306)	--
Race	Black alone	0.0877** (0.0245)	--
	Asian alone	0.0972*** (0.0262)	--
	Hispanic or Latino	0.094*** (0.0251)	--
	White alone	0.0918*** (0.0244)	--
Education	HS Graduate +	0.0266* (0.0121)	--
	BS Degree +	-0.0016 (0.0045)	--
Income		-0.0000044 (0.00000345)	--
Poverty		-0.00662 (0.0101)	--
Population Size		-0.000000177* (0.0000000761)	--
Constant		-6.44 (3.07)	1.67 (0.152)

Note: *** p <.001, ** p < .01, * p <.1, n = 72

Avenues for Citizen Participation

Next, I increased the relative weight of avenues for citizen participation in my model:

Bottom up Governance

$$= 0.2 * \text{Internal Funding Dependence} + 0.2 * \text{Local Voter Turnout} \\ + 0.4 * \text{Avenues of CP} + 0.2 * \text{Ease of CP}$$

Table 11. Regression analysis of the relationship between Bottom-Up Governance and Satisfaction with Police Performance, heavily weighing avenues for citizen participation.

Variable	Model 1 (w/ controls)	Model 2 (no controls)
<i>Independent Variable</i>		
Bottom-Up Governance	0.0648** (0.0223)	0.105*** (0.0243)
<i>Control Variables</i>		
Age		
Age under 18	0.027* (0.011)	--
Age over 65	0.0142 (0.0135)	--
Gender	-0.0663* (0.0292)	--
Race		
Black alone	0.0818** (0.0233)	--
Asian alone	0.0904*** (0.0249)	--
Hispanic or Latino	0.0874*** (0.0237)	--
White alone	0.0857*** (0.0233)	--
Education		
HS Graduate +	0.0231* (0.0117)	--
BS Degree +	-0.00195 (0.00426)	--
Income	-0.00000374 (0.00000322)	--
Poverty	-0.00497 (0.00972)	--
Population Size	-0.000000198* (0.0000000729)	--
Constant	-5.5 (2.91)	1.58 (0.148)

Note: *** p <.001, ** p <.01, * p <.1, n = 72

From this (thrice) adjusted model for Bottom-Up Governance, I again find the expected positive relationship between bottom-up governance and satisfaction (Table 11). A one unit increase in bottom-up governance leads to a 0.0648 increase in satisfaction, after controlling for all other variables in the model ($p = 0.005$). With the adjusted model, the p-value has decreased by 0.027 (relative to 0.032). This is only case where the p-value of the supplementary model is lower than the primary model's p-value. Using a 5% significance level, I have strong evidence supporting the hypothesis that there is a statistically significant impact of bottom-up governance on citizen satisfaction with local police departments.

Ease of Citizen Participation

Finally, I increased the relative weight of ease of citizen participation in my model:

Bottom up Governance

$$= 0.2 * \textit{Internal Funding Dependence} + 0.2 * \textit{Local Voter Turnout} \\ + 0.2 * \textit{Avenues of CP} + 0.4 * \textit{Ease of CP}$$

From this adjusted model for Bottom-Up Governance, I find the expected positive relationship between bottom-up governance and satisfaction, meaning that all four supplementary models agree with the results of my primary Bottom-Up Governance model (Table 12). A one unit increase in a locality's bottom-up governance score leads to a 0.0722 increase of its satisfaction score, after controlling for all other variables in the model ($p = 0.053$). With the adjusted model, the p-value has increased by 0.021 (from 0.032). Using a 10% significance level, I continue to have strong evidence supporting the hypothesis that there is a statistically significant impact of bottom-up governance on citizen satisfaction with local police departments.

Table 12. Regression analysis of the relationship between Bottom-Up Governance and Satisfaction with Police Performance, heavily weighing ease of citizen participation.

Variable		Model 1 (w/ controls)	Model 2 (no controls)
<i>Independent Variable</i>			
Bottom-Up Governance		0.0722* (0.365)	0.137*** (0.0291)
<i>Control Variables</i>			
Age	Age under 18	0.0266* (0.0114)	--
	Age over 65	0.0135 (0.014)	--
Gender		-0.0625* (0.0304)	--
Race	Black alone	0.0854** (0.0242)	--
	Asian alone	0.0953** (0.0258)	--
	Hispanic or Latino	0.0916*** (0.0247)	--
	White alone	0.0893*** (0.0241)	--
Education	HS Graduate +	0.0224* (0.0123)	--
	BS Degree +	-0.00191 (0.00443)	--
Income		-0.00000395 (0.00000335)	--
Poverty		-0.00541 (0.0101)	--
Population Size		-0.000000176* (0.0000000748)	--
Constant		-6.03 (3.02)	1.36 (0.181)

Note: *** p <.001, ** p < .01, * p <.1, n = 72

Part V: Discussion

Bottom-Up Governance Model

My hypothesis tested whether increased bottom-up governance in localities is associated with increased citizen satisfaction with local police departments. Using an OLS model to assess this relationship, I regressed citizen satisfaction over my constructed bottom-up governance measure. Additionally, to provide support for the robustness of my Bottom-Up Governance model, I created four supplementary models with varying weights of each dimension of bottom-up governance. I found that across all five models, an increase in the bottom-up governance score of a locality leads to a statistically significant increase in citizen satisfaction with the local police department. To clarify what this means, increased internal funding dependence, likelihood of citizen participation (measured through local voter turnout), avenues for citizen participation, and ease of citizen participation (measured by level of English speaking and internet access) will lead to greater citizen satisfaction. Bottom-up governance is an independent contributor to the level of citizen satisfaction achieved in a locality, even after controlling for important variables like age, gender, race, socio-economic status, and population size that have previously been established as indicators of satisfaction with policing (Weitzer and Tuch, 2005a:288; Ostrom and Whitaker, 1974; Brown and Benedict, 2002:554; Ren et al., 2004; Boettke et al., 2016).

Two Case Studies

In order to more concretely depict the impact that bottom-up governance has on citizen satisfaction with local police departments, I will briefly describe two localities that were included in my study: Durham, NC and Andover, KS. I chose these two cases because they are clear examples of the low bottom-up governance, low satisfaction model (Durham, NC), and the high bottom-up governance, high satisfaction model (Andover, KS) that I predicted in my hypothesis.

Durham, NC

In Durham, NC, I found one avenue of citizen participation associated with the police department: a community engagement unit, nominally dedicated towards improving community relations and acting as a pathway towards local engagement (Table 13). Partnered with the relatively low levels of voter turnout that characterizes this community (14%), I predict within my Bottom-Up Governance model that this one avenue is not being used to its full potential, as Durham citizens are unlikely to be politically active and participate in affecting change within the police department. Additionally, 6.75% of Durham's annual police budget is derived from external funding sources, and I argue that this dependence pulls the local police department's priorities away from what the community truly values and instead towards an externally determined set of initiatives (Boettke et al. 2016). Lastly, the two measures that comprise the "Ease of Citizen Participation" dimension of my Bottom-Up Governance model indicate increased levels of non-English speakers in Durham, as well as slightly lower levels of internet access within the community, when compared to Andover, KS. The effect of internet access does not have as compelling an impact upon ease of citizen participation in this comparison, but the proportion of non-English speakers in Durham, NC is nearly double that of Andover, KS, neatly coalescing with my hypothesis that higher barriers towards participation will decrease the occurrence of bottom-up governance within a community, leading to decreased citizen satisfaction with the local police department.

Andover, KS

In Andover, KS, I found four avenues of citizen participation carried out by the police department: a community alert system, National Night Out engagement events, a neighborhood association program, and regularly programmed police/fire festivals (Table 13). To briefly

describe these avenues, the community alert system is a mass notification program that sends out information to all community members about emergencies and community engagement events; National Night Out is an annual community-building event where community members and police officers have the opportunity to establish and grow relationships, with a special focus on promoting police-community partnerships; the neighborhood association program is a program where each homeowner's association within Andover has a specifically assigned police officer to act as a liaison to address any concerns in the neighborhood and to relay them to the department itself; and the Police/Fire Festival, which takes place three times a year, has consistently high attendance rates, acts as another point of interaction between the community and local police department, and further establishes/promotes relationship-building.

In conjunction with the relatively high rates of local voter turnout that characterizes this community (37.6%), I predict within my Bottom-Up Governance model that these avenues of participation are being actively used by Andover citizens, as they are more likely to be politically active and will participate in shaping a police department that suits their needs. Additionally, 0% of the Andover police budget is derived from external funding source, so the opinions and ideas that citizens hold can truly be implemented without outside funding dictating the fundamental rules, priorities, and methods used by the police department. Lastly, the two measures that comprise the "Ease of Citizen Participation" dimension of my Bottom-Up Governance model indicate lower levels of non-English speakers in Andover, as well as slightly higher levels of internet access within the community, when compared to Durham, NC. As I've already mentioned, the effect of internet access does not have as compelling an impact upon ease of citizen participation in this comparison, but the proportion of non-English speakers in Andover, KS is approximately half that of Durham, NC, supporting my hypothesis that lower barriers

towards participation will increase the occurrence of bottom-up governance within a community, leading to increased citizen satisfaction with the local police department.

Table 13. A comparison of findings from two specific localities in this study: Durham, NC and Andover, KS.

Locality	Durham, NC	Andover, KS
<i>Independent Variable</i>		
Avenues for CP (0-4)	1	4
Outside Funding Dependence (%)	6.75	0
Local Voter Turnout (%)	14.0	37.6
% Non-English	19.6	9.7
% Internet Access	86.8	88.4
<i>Dependent Variable</i>		
Satisfaction Score	1.62	2.91

Limitations

It is important to recognize that there are a number of limitations with my study. As previously stated, the quality of the police satisfaction surveys included in this study widely varied and could not be controlled for. A number of localities hired outside research firms to conduct methodologically-sound citizen surveys, while others simply posted survey links on the police department’s website, making news and social media posts to encourage individuals to fill out the survey; the majority of surveys included in this study lie somewhere in between these two extremes. I did not think it was appropriate to exclude any data, simply based on my perception of the quality of the survey, so I included all surveys that answered my specific satisfaction question in hopes of preventing any potential bias in this regard. Although there is no way to adjust for this bias, it is also important to recognize that there is likely an upward bias in the localities that carry out these satisfaction surveys. Conducting citizen satisfaction surveys in itself is a form of bottom-up governance, as citizens are able to signal to the police departments what their preferences and opinions on the department’s performance is. More specifically, these satisfaction surveys are an avenue for citizen participation and voicing their opinion. Therefore,

police departments with perceivably low performance are disincentivized from conducting these surveys, making this data publicly available, and officially recognizing their poor performance. I hypothesize that there are a number of localities that have low satisfaction with their police department due to a lack of bottom-up governance, but we have no way of seeing where these localities are if they do not provide an avenue for citizen feedback.

Part VI: Conclusion

To round out my thesis, I begin with a story about my second reader, Professor Tony Corrado, who worked at the Department of Justice his senior year of college in the now defunct Law Enforcement Assistance Administration. Professor Corrado served as a grants administrator, closing out federal grants to local police departments (interestingly enough, federal money for riot gear was “all the rage” back then). I wholly believe that Professor Corrado had nothing but altruistic intentions with his work in this administration; however, I have demonstrated with my findings that such use of federal funding to shape the priorities of local departments may not be as effective and beneficial as we once believed.

Overall, this research set out to examine how the level of bottom-up governance in a locality can affect citizen satisfaction in the performance of their local police departments. Using empirical methods, I tested and quantified the relationship between bottom-up governance and satisfaction. From my analysis, I found that bottom-up governance increases the satisfaction citizens have for their local police department. These findings are part of a marginalized, yet established literature on the importance of “active participation” of citizens in improving the quality of public goods and services produced (Ostrom, 1996:1079; McGinnis, 1999:7, Aligica et al., 2019:122). In the terms of political economy, this interaction is referred to as co-production. In my terms, I refer to this interaction as bottom-up governance, in hopes to emphasize the role of citizens and to verbally counter the already strong influence of government in establishing rules and priorities at the local level. The government does not need more encouragement in shaping institutions, but the active role of citizens must continue to be emphasized if the desired outcome of increased satisfaction will be achieved.

As previously explained, much of the existing literature on police satisfaction heavily focuses on demographic variables, the impact of the quality of specific interactions, and performance-based management (Gorby, 2013; Moore and Braga, 2003). Gill et al. (2014) found that increased collaboration between the police and local citizens “for the purpose of defining, prioritizing, and/or solving problems” increases satisfaction, which is wholly compatible with the findings of my research (Gill et al., 2014). However, this study only took into consideration one grant (the COPS grant) and excluded all other sources of external funding from their analysis. As supported by my findings, all outside monetary influence will direct local police efforts away from the community and towards an externally determined set of policing priorities (Boettke et al., 2016). Apart from the existing literature on co-production, my research is the first to use a variable that considers four concrete aspects of bottom-up governance to predict the quality of services produced, which include external funding dependence, avenues for citizen participation, likelihood of participation, and ease of participation.

More broadly, I set out to examine the ways in which citizens can engage with local governance and affect change. The protests against police brutality that motivated the topic of my thesis, while extremely important in their own right, made me realize and question the general pattern of inelasticity that characterizes local governance today. Why, despite all these protests and repeats of similar, unjustifiable events, don’t we see widespread, substantive reform in the methods of policing currently used? With my research, I have created a better understanding of how bottom-up governance, or citizen participation, can contribute to increased satisfaction with local policing. Moreover, these findings on bottom-up governance are generalizable far beyond the police department and can be applied to the production of all public goods and services. This is closely in line with assertions from the Ostroms’ school of political

economy, arguing that democratic participation in producing local services will lead to more satisfactory public goods that truly cater to the needs and desires of the community. Essentially, these findings strongly incentivize a widespread transition towards increased bottom-up governance and directly challenge the current norms of policing, suggesting that top-down regulation and mass consolidation are contrary to achieving the production of quality goods and services.

More specifically, I have determined a number of concrete, practical policy recommendations that can be derived from this study:

- 1) Bring the power of rule-setting back to the people and decrease external funding. Outside actors should not hold precedence in setting the priorities of a local police department; citizens *themselves* should be given the space and opportunity to self-govern and create policies that most accurately cater to their needs. External funding sources that may interfere with self-governance include federal and state grants that subsidize paramilitary equipment, incentivize the seizure of narcotics, or generally dictate the priorities of local police departments that citizens might not agree with.
- 2) Create avenues for citizen participation in rule and agenda setting of local police departments. What is noticeably neglected from the current discourse on police reform is the idea of creating an institutional framework that will allow for continued, long term citizen participation in determining what the police's priorities should be. This goes beyond creating surface level, politically motivated changes that only aim to pacify agitated protestors during waves of intense activism. From my research, I found that the highest quality avenues of participation include citizen advisory councils, public

meetings and hearings, and citizen complaint review boards, so I heavily support the implementation of these particular avenues.

- 3) Create an equitable plan that allows for diverse citizen participation in the agenda-setting of local police departments. It is important to note that barriers towards participating in political agenda-setting and feelings of alienation are disproportionately experienced by black Americans and people of color. BIPOC face significantly higher rates of disenfranchisement, lowering their ability to meaningfully participate in politics, they are more likely to face a language barrier in participation, and they are more likely to feel discouraged from participating in reforming an institution that inflicts disproportionate, undue, and unjust harm on them, simply based on the color of their skin (Cao et al., 1996; Apple and O'Brien, 1983; Homant et al., 1984; Koenig, 1980; Parks, 1984; Smith and Hawkins, 1973; Ostrom and Whitaker, 1974; McGinnis, 1999:203). Avenues for participation will more frequently be used by individuals with lower barriers and feelings of alienation (namely, white Americans). To address this issue, I propose the use of liaisons, who will work closely with marginalized communities, bridge this gap in participation, and will personally advocate for the priorities and desires of the communities they represent. In my research, liaisons were included as a potential avenue for participation that increased citizen satisfaction. Lastly, information on how to use the different avenues for participation must be made easily accessible for all members of the community, including those who lack internet access and those who are not fluent in English.

This proposal for bottom-up governance does not come without its fair share of caveats.

For one, the mere existence of avenues for citizen participation does not mean that these avenues

will actually be used. This is only one dimension of the bottom-up governance puzzle and must work closely in conjunction with active citizen participation. Without active citizen engagement, the existence of avenues for citizen participation is pointless, and without avenues for citizen participation, any active citizen engagement that does exist cannot be effectively channeled towards creating substantive change in the local institution's priorities. All these dimensions are crucial aspects of bottom-up governance, so one cannot be considered without the others. Active citizen engagement is the key to a (minimally) functioning, if not happy, democracy, and reaching this must be the first goal if there will be any hope towards achieving bottom-up governance and the creation of a satisfactory institution that truly reflects the desires of the people.

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