Professionalism in Policing: Do Increased Education Requirements Improve Police Performance and Procedural Justice?

Kelsey Peyton McMahon

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James E. Hawdon

Donna A. Sedgwick

Jose A. Torres

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Abstract

With the increased attention to police brutality against people of color in recent years, the credibility of police departments is being called into question. Prior research suggests that a police force can improve their trustworthiness in the eyes of the public through prioritizing procedural and outcome justice. However, less is known about how to achieve these goals. Can education requirements play a role in increasing levels of procedural and outcome justice in police departments? By using rates of use of force rates as a measure for procedural justice and clearance rates as a measure for outcome justice, I investigate whether increasing the education requirements of police departments is associated with greater procedural and outcome justice. Data for this comparative quantitative analysis of police departments are drawn from the Law Enforcement Management and Administrative Statistics survey (LEMAS), the Uniform Crime Reporting survey (UCR), and the US Census. Through multivariate analyses, I find that raising education requirements increases use of force and decreases clearance rates, and community policing training for police recruits increases clearance rates but also increases use of force. Community training was more likely to exist at departments with increased education requirements. These findings suggest that departments with evidence-based policing methods have higher clearance rates. Careerism from increased education requirements may cause use of force to increase, however, this situation may be improved by switching the department style from legalistic to service policing. I argue that police departments should implement higher education requirements while also altering the organizational goals of police departments to be service-oriented and requiring community policing training for all police recruits.

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General Audience Abstract

With the increased attention to police brutality against people of color in recent years, the credibility of police departments is being called into question. Prior research suggests that a police force can improve their trustworthiness in the eyes of the public through prioritizing respectful interactions with citizens and effectiveness in crime-solving. However, less is known about how to achieve these goals. Can education requirements play a role in increasing the fairness and effectiveness of a department? By using a department's amount of force used on citizens as a measure for fairness and the amount of crimes solved out of the number of crimes committed as a measure for effectiveness, I investigate whether increasing the education requirements of police departments is associated with greater police fairness and effectiveness. Data for this study are drawn from the Law Enforcement Management and Administrative Statistics survey (LEMAS), the Uniform Crime Reporting survey (UCR), and the US Census. Through my analyses, I find that raising education requirements increases use of force and decreases the amount of crimes solved, and community policing training for police recruits increases crimes solved but also increases use of force. Community training was more likely to exist at departments with increased education requirements. These findings suggest that departments that use scientific approaches in their policing policies can typically solve more crimes. College-educated officers are more likely to try and advance their career no matter what, so increased education requirements may cause use of force to increase. However, this situation may be improved by making the priorities of a department geared towards helping the community rather than making arrests. I argue that police departments should implement higher education requirements while also altering the goals of police departments to be geared towards public service and requiring community policing training for all police recruits.

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Introduction

The legitimacy and trustworthiness of police departments is under increased scrutiny due to heightened attention to police brutality in recent years, especially toward people of color. Like many other policing scholars, I argue that increasing educational requirements and community policing training will improve the ability of law enforcement to effectively and respectfully serve the public. Prior research varies widely when analyzing if a college education improves quality of policing. The purpose of this study is to clarify this point by testing the hypotheses that higher education requirements of US police departments will decrease use of force incidents and increase clearance rates. This study uses educational requirements to determine how professional a police department is and clearance rates and use of force statistics as measures of outcome and procedural justice, respectively. A higher clearance rate indicates the success rate of a police department to effectively solve crimes and represents outcome justice. Decreased use of force implies a fair, community-minded department, and represents procedural justice. It may be necessary to increase the educational requirement of police officers to widely adopt community policing and post-9/11 policing tactics, characterized by an emphasis on technical skills, like intelligence processing. Community policing training is necessary to directly teach a specific style of policing that benefits the public. These methods are especially necessary to alter the prevailing policing style that is increasingly criticized by the public as being insufficient.

Policing exists to maintain social control, but it is necessary to have social control that is not repressive; since police use force, it is essential to understand the underlying factors of this use of force. Use of force is seen to decrease with college-educated officers (Paoline & Terrill, 2007; McElvain & Kposowa, 2008), and clearance rates have the potential to increase with an evidence-based police department, arguably the type of department that would require college-educated officers. On the other hand, while more education may result in increased professionalism and better policing, it is possible that increased education requirements are being just taken on for symbolic purposes, or that increased requirements will lead to careerism. Therefore, it is crucial to follow up with organizational changes to see how policing is affected.

For this quantitative study, the data were collected from the Law Enforcement Management and Administrative Statistics Survey (LEMAS), the Uniform Crime Reporting Program (UCR), and the US Census Bureau. The combination of variables from these surveys are studied in order to add to current policing literature in a new way. The quality of policing of a police department was studied using a univariate descriptive statistics model, a correlation matrix model, and two regression models.

Literature Review

Background of Policing in America

Police professionalization practices have been debated for more than a century. In the early 1900s, Police Chief August Vollmer, known as the father of police professionalism, was the first to require all officers under his command to take college courses at the University of California at Berkeley. He advocated for police officers to be trained in psychology and the sociology of crime; this advocacy created the basis for what is now police academy training (Carte, 1973). Vollmer's program was the first of its kind, but other universities introduced police education curricula of their own soon after in the 1920s and 1930s. Despite this early introduction to higher education in policing, a minimum education requirement was not established in major departments until the late 1950s and early 1960s. The educational requirement, which still stands for most law enforcement agencies across the US, was set at a high school diploma or equivalent (GED) (Garner, 1999).

As the expectations of policing have increased over time, so have the expectations of their abilities as professionals. Organizational evolution theory can be used to explain how and why new styles of policing have emerged, and why it may be necessary to instate an entirely new style of policing. Organizational evolution posits that the changes in each policing era are due to tensions between the state and society, created by a crisis that forces the two entities to convene and create policies that change policing requirements (Hawdon, 2019). For example, as a response to the attacks on New York's Twin Towers, the US Pentagon, and an attempted attack on the White House in September 2001, policing adopted new tactics that ushered in the homeland security era of policing. Oliver (2006) defines this era as a post-9/11 style of policing that prioritizes gathering, processing, and spreading intelligence information. This era prioritizes the mitigation of security threats and preparation for the possibility of a domestic terrorist attack (Oliver, 2006). This era has introduced the demand for many new skills, such as counselling and mediation, that police officers would need to learn to do their jobs effectively; thereby reinforcing the need for increased educational requirements. The most productive way to improve the information collecting skills that the homeland security era requires is through more education.

While homeland security policing was best implemented using community policing tactics, additional pressures resulted in police agencies relying more on the centralized aggressive tactics of rapid response policing rather than the community-building tactics associated with community policing (see Hawdon 2019). According to Hawdon (2019), these trends resulted in the current era of policing in the United States, which is the militarized era (see Kraska, 2007). This era is characterized by Broken Windows policing and aggressive tactics. While this style of policing may be effective at controlling crime (and this is debatable), it is certainly at odds with notions of procedural justice. That is, policing roles that are valued in society have shifted to community policing tactics such as facilitating, mediating, and de-escalation, which are not presently a priority for police departments. Thus, police agencies are currently confronting a tension between the style of policing they want to use and the way that citizens want to be policed. An increase in professionalization may allow police to better adapt to these ever-shifting roles.

Professionalization

Professionalization of a workforce is when a profession has the expectation of having a certain set of skills and knowledge through a unique set of education, training, and experience (Evetts, 2006). Sullivan (2004) dubbed professions as a separate entity within the world of work, characterized by quality service, accountability, and mastery of specific knowledge and complex skills. Due to this higher standard, Sullivan (2004) also posits that these professions demand a higher rigor of education and apprenticeship, specifically within formal educational institutions. Therefore, education is used as a proxy measure of professionalism in this study because of its transformative properties in the professionalization process. Since complex knowledge would need to be acquired by police officers in a formal educational institution in order to be professional, educational requirements and training can be used as a comparison between departments to measure professionalism.

However, Carlan and Lewis (2009) foresee a few issues with the professionalization of the police force. First, the commitment of police to engage in a collegiate education remains low and without this focus on education, the professionalization of policing will be difficult. Police personnel are not always ideal students, and the task of professionalizing a person who is forced into the classroom is challenging (Carlan & Lewis, 2009). Incentives and a clear organizational structure are necessary to change this trend in police education standards. Early police departments in the US had flimsy job qualifications; promotions were sold rather than earned, making officers unmotivated to rise in the ranks (Potter, 2013). Strong, well-defined qualifications and a clear chain of command help motivate aspiring police officers by allowing for a visible trajectory of the level and appointment type an officer could expect (Potter, 2013). By incentivizing police education and incorporating well-defined job qualifications, departments can facilitate an increase in participation in collegiate coursework and therefore improve professionalism.

The way that educational attainment shapes police officers' interpretation of their professional role is not well understood. Role theory applied to police departments suggests that police officers will behave according to their understanding of the expectations of the job. According to role theory, by imposing professionalization measures on a police department, role expectations are formed and policing behaviors are either deemed acceptable or unacceptable through the new professional code (White, 1972). Role theory is a micro-level theory that connects to the macro-level, which are the normative expectations of the job. This then connects to the organizational level, which are the policies and trends that reflect the other two levels. Gidden's structuration theory explains this dynamic between organizational standards and the agency of individuals. This theory posits that the agency of individuals is informed by rules that unknowingly influence the agent via the overarching social structure they are within; the agent and the structure simultaneously reproduce one another on both a micro- and macro-level (Giddens, 1971; Turner, 1986). Thus, as departments raise educational attainment requirements, expectations of the job would increase accordingly, and officers would adapt to this new, more complex role by exhibiting the more "professional" policing qualities valued in society. New policing abilities that require increased education requirements, such as counseling, mediation, and information-gathering, are consequences of the post-9/11 policing era. Increased education allows officers to more easily adapt to these new, more technical, skills that align with the growing expectations of a professional police force.

Police Education

The education requirement for most police departments is a high school diploma; however, police officers are increasingly obtaining college degrees. Around 15% of departments require some college experience, with 10% requiring a 2-year degree and 1% requiring a 4-year degree (Reaves, 2015). More Americans are attending college as educational requirements continue to increase for jobs in the United States, but despite an increase in numbers of police officers with college degrees, police departments are slow to increase minimum education requirements (Rydberg & Terrill, 2010). As college educated police officers increase, officers are likely to obtain promotions if they have a college degree (Carlan & Byxbe, 2000). This incentive has the potential to change the dynamics within a police department. Departments are increasingly shifting to incentive programs for officers that earn a degree when they are off duty (Garner, 1999). Education incentives help to increase the percentage of officers with a college degree and could aid in the shift to higher education requirements for police departments.

There have been many other positive findings of college-educated officers when compared to their less-educated peers. Officers with a college education receive higher ratings in citizen satisfaction and from their superiors, and they incur fewer injuries, sick days, and preventable accidents (Paoline and Terrill, 2007). In terms of more personal attributes, college-educated officers are found to be less authoritarian, place a higher value on ethical behavior, have more open belief systems, and have better verbal communication skills than non-college educated officers (Paoline and Terrill, 2007). Using these findings, departments may see college-educated officers as an investment for the department and the community.

However, while there are many studies that tout the beneficial behaviors of college educated police officers, there is also a large body of work citing problematic behaviors too. Increasing education requirements could lead to careerism, typically defined by more emphasis on outcome justice than on procedural justice. College-educated officers *are* found to be more achievement-oriented than their high school educated peers, but rather than being beneficial, this could lead to an increased likelihood to stop, search, and arrest drivers, even when it is unnecessary (Johnson et al., 2020). Johnson et al. (2020) argue that college-educated officers may increase discretionary arrests with the end goal of advancement within their department; especially because stops, searches and arrests are currently one of the most used metrics to determine which officers get promoted. The study from Johnson et al. (2020) actually warns against raising the education requirements to a college degree, especially a four-year degree, citing that increased requirements will further diminish police-community relations. This is due to concerns about continuing to over-police communities that are already targeted heavily by police. The increase of use of force is an indication that college educated officers will likely adhere more strictly to objectives laid out by police departments; thus, college educated officers would more likely focus on legalistic policing goals, such as administering citations and arrests. This would then lead to lower crime rates but an increase in use of force.

Another counter narrative to increasing educational requirements to a four-year college degree is that higher education requirements may limit participation in policing by some key minority groups. Decker & Huckabee (2002) found that 65.3 percent of the successful applicants would be out of the running due to not having the required four-year degree. Successful black female applicants would be the most negatively impacted; 90% of black female candidates would not meet the raised educational requirements (Decker & Huckabee, 2002). Decreasing the eligible applicant pool could put more strain on police departments that are already stretched thin in many cases.

Therefore, there is contradictory evidence regarding the benefits of requiring more education for police officers. Considerations of professionalism and educational requirements are also important in understanding how the policing profession has transitioned over time. However, the possible ways that differences in educational requirements affect outcome and procedural justice remain an important question for understanding police performance.

Procedural and Outcome Justice

While policing tactics have changed over time for departments, the overall goal for policing has been far more stable (Hawdon 2019). Police are expected to control crime, but in a manner that respects the rights of citizens. Therefore, we must evaluate police effectiveness in terms of outcome justice (how well they control crime) and procedural justice (how respectful they are toward citizens) in order to understand the qualifications for a good police force.

Procedural justice is about integrity in interactions; it is the extent to which police act with kindness and fairness in their treatment of citizens and in their decisions (Mazerolle et al., 2013; Stoutland, 2001). The proxy measure of procedural justice for this study is use of force. The measure assumes that the more instances of force used by a department, the less procedural justice there is. Citizens are more likely to cooperate with the police if they see police authority as legitimate and one way police achieve this legitimacy is by being procedurally just (Mazerolle et al., 2013). Procedural justice is characterized by treating citizens with respect; the use of force by police violates this principle, all else being equal. The International Association of Chiefs of Police has defined use of force as the "amount of effort required by police to compel compliance by an unwilling subject." The National Institute of Justice says that use of force is permissible only in self-defense or in defense of another person or group. Using these guidelines, use of force should be used sparingly; an officer who is able to deescalate a situation without the use of force is an asset and simultaneously legitimizes the police force through procedural justice.

Outcome justice is about police competency; it is the extent to which police effectively solve and control crime (Stoutland, 2001). The proxy measure of outcome justice for this study is clearance rate. A higher clearance rate of a department would indicate a higher amount of outcome justice. Assessing clearance rate is one of the most widely-used methods to record the accomplishments of a police department (Nicholson-Crotty & O'Toole, 2004). A clearance rate indicates the performance of a department by specifying the number of crimes reported to the department that were solved. This, in turn, indicates a high level of outcome justice, showing that the department is serving the needs of the community well. In general deterrence theory, crime rates will drop if there is a higher chance of arrest and subsequent punishment upon apprehension (Choi & Choi, 2012). The previous year's clearance rate has been found to have a negative effect on crime (Corman et al., 1987). There is a strong basis that suggests that prior clearance rates determine if crime rates are decreasing due to the efforts of the police. This would indicate that the police are competent and dependable; two properties of outcome justice (Stoutland, 2001).

Good policing is achieved through a balance of procedural and outcome justice. Trust and legitimacy are key to this equilibrium. Using Ferguson's "four trust questions" framework, the dimensions of trust are: priorities ("Do the police share citizens' priorities and concerns?"), competency ("Can they effectively control crime and accomplish the other requirements of their jobs?"), dependability ("Are they dependable?"), and respect ("Do they treat residents with respect?") (Stoutland, 2001, p. 233). Priorities and respect are markers of procedural justice, whereas competency and dependability indicate outcome justice. These key components of procedural and outcomes justice can tend to be in conflict with one another. Certain types of policing are better equipped for some of these trust questions above others. Community policing goes with priorities and respect, markers of procedural justice, due to the emphasis on positive interactions between police and citizens (Hawdon et al., 2003). Traditional patrol policing goes with competency and dependability, markers of outcome justice, because this policing style is consistent with a reduction of crime in "hot spots" (Sherman, 1997; Sherman & Weisburd, 1995) and the increased police visibility makes citizens believe that police are effective (Hawdon et al., 2003). Both policing styles benefit citizens in different ways; a combination of both styles could be the most appropriate way to strike a balance between procedural and outcome justice. In order to fulfill both justices, citizens require some contact with the police to feel protected, but the interaction must be high-quality. High quality police-citizen interactions are key to improving perceptions of police legitimacy and reducing any tensions (Kessler, 1999). By combining the maintenance of a respectful police-citizen relationship with visibility in the protection of communities, police will achieve a legitimate status in the eyes of citizens. Therefore, a balance of procedural and outcome justice will produce a good police force; increased education requirements may help police get there.

Connecting Education with Procedural and Outcome Justice

College education does influence certain aspects of police performance and behavior. A study on use of force by Paoline and Terrill (2007) found that officers with a college education, especially those who receive a 4-year degree, are able to perform their daily activities with less use of coercive techniques, such as verbal and physical force, than officers with a high school education. A college education could be seen as a necessary safety measure; officers with a college degree are 41% less likely to discharge their firearm when compared to officers with a high school diploma or some college but no degree (McElvain & Kposowa, 2008). While the literature is varied in many aspects of police performance, recent studies have become increasingly regular in recognizing that use of force declines when officers have a college degree.

Since outcome justice is connected to police performance in controlling crime, the use of evidence-based policing is a tactic to promote increased outcome justice. Increased educational requirements promote the use of more evidence-based practices. Sherman (2013) finds that departments with higher educational requirements are more science and data friendly, and use more up-to-date approaches to solving crimes. In terms of effectively solving crimes, Sherman (2013) found that the use of science enhanced the performance of departments to solve crimes; this was done by informing departments of areas they could improve in and hone in order to best perform their jobs. For example, evidence-based policing science helped to create a checklist on the solvability of a case to speed up the process of crimes that can be easily solved, therefore streamlining the crime-solving process and allowing for police resources to be allocated more effectively (Sherman, 2013). Policing scholars were also able to train departments on how to proactively police by examining trends in crime hot spots (Sherman, 2013). In sum, departments that hire college-educated officers are more likely to rely on scientific evidence to inform, and potentially improve, their policing practices.

Based on earlier findings, I hypothesize that increased education requirements can increase procedural and outcome justice through two main avenues: (1) evidence of a college education leading to less use of force in citizen interactions, and (2) a greater likelihood for a department with higher educational requirements to have higher departmental clearance rates. While I am mostly interested in formal education as a general reflection of professionalization, I recognize that role-specific education, such as training in community policing, can also lead to more peaceful interactions with citizens through the use of evidence-based policing.

Previous studies do not look at a combination of LEMAS, UCR, and Census data to answer the police educational requirement debate, this study also uniquely uses both departmental use of force and clearance rate to measure procedural and outcome justice. This study aims to determine if differences between departments with higher education requirements and those that remain at a high school attainment level; do higher education requirements translate to an increase in procedural and outcome justice?

Methods

Data

To answer this question, "do increased educational requirements improve outcome and procedural justice," I used secondary data from three primary sources: the Law Enforcement Management and Administrative Statistics survey (LEMAS), the Uniform Crime Reporting survey (UCR), and the US Census. The 2013 LEMAS survey was chosen because it was the most recent survey fully released to the public at the time this study was being completed. The LEMAS collects data using random sampling of law enforcement agencies in the United States. This sample is weighted; the base weight is departments that have 100 or more officers, this was adjusted so that the departments that reported less than 100 officers are given weights to be equally represented. The US Department of Justice (2015) describes the sampling design for the 2013 LEMAS as including all police departments with 100 or more sworn personnel and for smaller departments to be sampled from strata based on the number of officers employed. The LEMAS asks police agencies a wide variety of department-level questions, including: the minimum educational requirement, the number of use of force incidents, and the amount of community policing training measures. The UCR survey is administered by the FBI; the US Department of Justice (2015) reports that the UCR receives crime data from monthly law enforcement reports or individual crime incident records that are sent to the FBI. The LEMAS and UCR datasets were connected using a unique ID associated with each police department. The Census data was used to connect demographic controls with a department's jurisdiction, including population density, median income, percent minority, and percent of educational attainment.

Measures

Proxy measures of use of force and clearance rates were used for the dependent variables. Clearance rates were a measure of outcome justice and rates of use of force were a measure of procedural justice. Use of force was obtained from the LEMAS survey. The wording of this variable as reported by the LEMAS is, "How many total use of force incidents did your agency record? If none, enter '0'". The second dependent variable is clearance rate, which is obtained from UCR variables and is determined with an equation used by Choi and Choi (2012); the number of arrests in a given year divided by the number of reported index crimes in that year, multiplied by 100. Index crimes include murder, rape, robbery, aggravated assault, burglary, larceny, motor vehicle theft, and arson (Choi & Choi, 2012).

The independent variable in this study is educational requirements of a police department, which is sourced from a question in the LEMAS dataset. The education requirements question was worded in the LEMAS as, "As of January 1, 2013, what was your agency's minimum education requirement for sworn new hires?" Agencies indicated that their requirements were one of the following: no minimum education requirement, high school diploma requirement, some college requirement, Associate's degree requirement, and Bachelor's degree requirement. In order to see how different levels of education would affect the dependent variables, the educational requirements were combined into one variable. The Associate's degree requirement, Bachelor's degree requirement, and some college requirement variables were coded as 1 and the no minimum education requirement and high school diploma requirement were coded as 0. Combining these education levels allowed me to compare educational requirements that required a college degree with those that did not. In addition, training in community policing is a form of job-specific, professional education. Therefore, another variable I looked at is community policing training of a department, sourced from the LEMAS dataset question that states, "E2. During the 12-month period ending December 31, 2012, what proportion of full-time sworn personnel received at least 8 hours of training on community policing issues (e.g., problem solving, SARA, and community partnerships)? Check one for both 'a' and 'b.': a. Recruit Training, b. In-Service Training." Recruit training and in-service training remained two separate variables for statistical analyses.

Controls for this study include crime rate, agency size, population density, median income, percent minority, and percent of educational attainment levels of the area under the jurisdiction of a given department. The zip code associated with a police department in the LEMAS was used alongside a Census Bureau QuickFacts tool to connect these jurisdiction-level variables with a department. Using this site, percent minority of an area was determined by taking the "White alone, not Hispanic or Latino, percent" variable and subtracting it from 100. Percent educational attainment was obtained from the "Bachelor's degree or higher, percent of persons aged 25 years+, 2015-2019" variable, median household income was obtained from the "Median household income (in 2019 dollars), 2015-2019" variable, and population density was obtained from the "Population per square mile, 2010" variable. Some departments were associated with the same zip code; the department that had a population that matched the Census population variable with the population in the Census QuickFacts tool was kept and the non-matching department was deleted, leaving the final number of cases in the sample to be 986. The Census data that was obtained using this QuickFacts tool was manually inputted for each department variable in the dataset.

Analysis

The unit of analysis for this study is United States local and sheriff's police departments in counties with populations greater than or equal to 30,000 people during the year 2012 (this survey is called the 2013 survey but records data from 2012, so it would be police departments active during 2012). Police departments are the unit of analysis because they represent the employed officers' aggregate amount of education. This departmental education reflects the level of professionalization of the departments, and therefore of the officers. Following Choi and Choi (2012), I limited the focus of my sample to jurisdictions with more than or equal to 30,000 people to avoid counties with fewer than 30,000 people that may not encounter the police as often due to being sparsely populated and geographically dispersed. The sample had 2826 cases and after eliminating cases based on this parameter, I was left with 1289 cases. 168 cases also fell out for not having either the UCR or LEMAS data necessary to study use of force and clearance rate.

The statistical methods that are used in this quantitative study are univariate descriptive statistics, a correlation matrix, and two regression models, all of which are created with the statistical software SPSS. The univariate descriptive statistics provide a baseline understanding of the variables used in this study. A correlation matrix determines which variables correlate with one another and if the independent and dependent variables correlate significantly, using the corresponding p-values of the correlation coefficients. Clearance rate and rate of use of force will be regressed on the measure of the departments' educational requirements and the various controls. Negative binomial logistic regression models will be used because these are count data and the data are likely to be over dispersed. The models allow me to compare specific combinations of variables to study how they affect the dependent variables.

Results

Table 1: Univariate Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Education Requirements (percent with some college/college degree)	0.17	0.38	0.00	1.00
Clearance Rate	29.94	14.87	0.00	100.00
Use of Force	109.12	262.45	0.00	4383
Population	145720.47	367996.99	30305	9962789
Agency Size (number of officers)	191.69	578.87	13	12042
Crime Rate	3.19	2.56	0.00	14.33
Community Policing Training - Recruits (1 = none, 2 = some, 3 = half, 4 = all)	2.86	1.34	1.00	4.00
Community Policing Training - In-service (1 = none, 2 = some, 3 = half, 4 = all)	2.36	1.21	1.00	4.00
Population Density	2870.13	3263.14	21.30	51796.60
Median Income (in ten thousands)	5.95	2.37	2.24	16.08
Percent Minority	39.28	22.85	3.90	99.00
Percent Educational Attainment (percent with Bachelor's degree)	31.57	17.23	5.40	259.00

Table 1 is a descriptive statistics table that summarizes the variables used in this study. Clearance rate and use of force are the dependent variables and the rest of the variables are independent variables. The average clearance rate of a department is 29.94; this is the average percent of crimes that were solved by a police department. The average number of use of force incidents in 2012 was around 109 incidents. The education requirements variable is dichotomous with an average of 0.17, which means 17 percent of the departments have a college-level minimum education requirement. Community policing training for recruits happens slightly more often than community training for in-service officers, by a margin of 0.5 on a scale of 1 (no officers received the training) to 4 (all officers required to receive the training). In terms of controls related to an agency's jurisdiction, the average population size is approximately 145,720 people and the population density is around 2,870 people per square mile. The median income for a jurisdiction is about $59,500 annually, the average percentage of non-white people is around 39%, and the average percent of people who have received a Bachelor's degree is around 32%. Agency size is typically around 192 officers and crime rate is usually around 3.19 crimes per 100 people in a given jurisdiction.

Table 2: Correlation Matrix (Includes P-Value Significance)

Variable	Education Requirements	Clearance Rate	Use of Force	Population	Agency Size	Crime Rate	Community Policing -	Community Policing -	Population Density	Educational Attainment	Percent Minority	Median Income

							Recruits	In-Service				
Education Requirements	1.00											
Clearance Rate	-0.04 0.05	1.00										
Use of Force	-0.09** < 0.01	0.06* 0.04	1.00									
Population	0.02 0.48	-0.02 0.40	0.51*** < 0.001	1.00								
Agency Size	0.07** < 0.01	-0.05* 0.03	0.65*** < 0.001	0.78*** < 0.001	1.00							
Crime Rate	0.06** < 0.01	-0.03 0.18	0.28*** < 0.001	-0.04 0.07	0.16*** < 0.001	1.00						
Community Policing - Recruits	0.07** < 0.01	0.10*** < 0.001	0.15*** < 0.001	0.10*** < 0.001	0.13*** < 0.001	0.19*** < 0.001	1.00					
Community Policing - In-Service	-0.01 0.60	0.08*** < 0.001	0.07* 0.03	-0.02 0.34	0.03 0.18	0.07** < 0.01	0.48*** < 0.001	1.00				
Population Density	0.05* 0.04	-0.15*** < 0.001	0.19*** < 0.001	0.13*** < 0.001	0.17*** < 0.001	0.12*** < 0.001	0.11*** < 0.001	-0.02 0.50	1.00			
Educational Attainment	0.14** < 0.001	-0.04 0.10	0.01 0.66	0.02 0.29	0.04 0.09	-0.00 0.84	0.12*** < 0.001	0.06* 0.02	0.08*** < 0.001	1.00		
Percent Minority	-0.09*** < 0.001	-0.08*** < 0.001	0.17*** < 0.001	0.19*** < 0.001	0.20*** < 0.001	0.27*** < 0.001	0.05 0.05	0.05 0.05	0.37*** < 0.001	-0.19*** < 0.001	1.00	
Median Income	0.14*** < 0.001	-0.02 0.47	-0.03 0.32	0.04 0.10	0.02 0.45	-0.11*** < 0.001	0.15*** < 0.001	0.05* 0.03	0.14*** < 0.001	0.57*** < 0.001	-0.06** < 0.01	1.00

Table 2 is a correlation matrix that summarizes the correlation coefficients and the significance between each variable. Higher educational requirements have a weak negative relationship with use of force of -0.09, indicating that use of force decreases as education requirements increase (p = <0.01). However, the correlation between clearance rate and educational requirements is -0.04; this weak negative relationship means that as educational requirements increase, clearance rates go down (p = 0.05). Clearance rate is also weakly and negatively correlated with population density at -0.15 (p = <0.001), which shows that as population density decreases (less people per square mile), clearance rates increase. The correlation between education and the community policing recruit training correlation is a slight positive relationship of 0.07. Community policing training for recruits has a slight positive relationship with both clearance rate and use of force (0.10 and 0.15 respectively, p = <0.001), showing that as recruits are trained in community policing, clearance rates improve; however, use of force also increases. Similarly, for in-service community policing training, the correlations are 0.08 (p = <0.001) and 0.07 (p = 0.03) for clearance rate and use of force, respectively. These weak positive relationships with the dependent variables indicate that clearance rates and use of force still increase as in-service community training increases. There is also a slight positive relationship of 0.14 between higher educational attainment of a jurisdiction and higher educational requirements of police departments (p = <0.001); departments in areas with more educated people may have the capacity to require higher educational attainment levels for officers. Agency size has a strong positive correlation with use of force of 0.65 (p = <0.001), and population has a moderate positive correlation of 0.51 with use of force (p = <0.001), meaning that when agencies are larger and there is a greater jurisdictional population, use of force increases. Crime rate has a positive correlation with use of force of 0.28 (p = <0.001), showing that as crime rate increases, so does use of force. Multivariate analyses will be used to determine if these relationships hold up when other variables are added.

Table 3: Negative Binomial Regression Model: Use of Force

Variable	B Coefficient	Standard Error	Wald Chi -Square	Significance	95% Confidence Lower	Interval Upper
Education Requirements (Associate's/ Bachelor's degree)	0.178	0.092	0.003	0.053	-0.359	0.003
Population	2.945E-6	3.205E-7	84.414	<0.001	2.317E-6	3.573E-6
Agency Size	0.000	0.000	1.318	0.251	-0.001	0.000
Crime Rate	0.265	0.017	247.268	<0.001	0.232	0.298
Community Policing - Recruits	0.046	0.030	2.371	0.124	-0.013	0.105
Community Policing - In-Service	0.004	0.033	0.018	0.893	-0.059	0.068
Population Density	4.204E-5	1.676E-5	6.295	0.012	9.199E-6	7.489E-5
Educational Attainment	0.001	0.002	0.260	0.610	-0.004	0.006
Percent Minority	-0.003	0.002	1.798	0.180	-0.006	0.001
Median Income	-0.020	0.018	1.192	0.275	-0.055	0.016

Table 3 reports the results of a negative binomial regression model, which is used to determine the strength of the relationship between overly-dispersed, count variables. This model is used to determine the relationships of explanatory variables with use of force. The education requirements variable has a B coefficient of 0.178 (approaching statistical significance at p = 0.053; CI = -0.359 - 0.003), meaning that agencies that have higher education requirements have higher use of force statistically. Community policing training for recruits (B = 0.046; p = 0.124, CI = -0.013 - 0.105) is shown in this model to increase use of force slightly, as does in-service community policing training (B = 0.004; p = 0.893, CI = -0.059 - 0.068). After controlling for several variables, crime rate significantly predicts use of force. The B coefficient for crime rate is 0.265 ($p = <0.001$, CI = 0.232 - 0.298), so the relationship with use of force is a positive one; as crime rate increases, so does use of force. The population density has a B coefficient of 4.204E-5 ($p = 0.012$), meaning that as population density increases, so does use of force. Similarly, a higher jurisdictional population also increases rates of use of force (B = 2.945E-6; $p = <0.001$, CI = 2.317E-6 - 3.573E-6). In sum, this model shows that use of force increases when there are higher crime rates, more community policing training (for both recruits and in-service), higher education requirements, and a greater population density.

Table 4: Linear Regression Model: Clearance Rate

Variable	B Coefficient	Standard Error	Beta (Standardized Coefficients)	t	Significance	95% Confidence Lower	Interval Upper
Education Requirements (Associate's/ Bachelor's degree)	-0.018	0.014	-0.033	-1.296	0.195	-0.046	0.009
Population	3.675E-8	0.000	0.069	1.663	0.097	0.000	0.000
Agency Size	-3.872E-5	0.000	-0.116	-2.761	0.006	0.000	0.000
Crime Rate	0.013	0.002	0.158	5.650	<0.001	0.009	0.018
Community Policing - Recruits	0.014	0.005	0.089	3.057	0.002	0.005	0.023
Community Policing - In-Service	-0.009	0.005	-0.052	-1.840	0.066	-0.019	0.001
Population Density	-5.393E-7	0.000	-0.007	-0.259	0.795	0.000	0.000
Educational Attainment	-2.450E-5	0.000	-0.002	-0.067	0.946	-0.001	0.001
Percent Minority	0.000	0.000	0.017	0.578	0.563	0.000	0.001
Median Income	-1.317E-5	0.003	0.000	-0.005	0.996	-0.005	0.005

Table 4 is a linear regression model that shows the collinearity diagnostics for the dependent variable clearance rate. There is no indication of multicollinearity; the highest variance inflation factor was agency size at 2.926. This model indicates a negative relationship between higher education requirements and clearance rate. As educational requirements are raised, clearance rate goes down (B = -0.018; $p = 0.195$; CI = -0.046 - 0.009). Crime rate is statistically significant, the positive relationship indicates that as crime rates increase, clearance rates also go up (B = 0.013; $p = <0.001$; CI = 0.009 - 0.018). This suggests that the more crimes that are committed, the more crimes police departments are going to solve (keeping all other variables constant). There is a statistically significant, positive relationship between having 8 hours of community policing training for recruits and clearance rates (B = 0.014; p = 0.002; CI = 0.005 - 0.023). Conversely, as community policing training for in-service officers has a negative relationship with clearance rates to a degree that approaches statistical significance (B = -0.009; p = 0.066; CI = -0.019 - 0.001). This shows that more community policing training for recruits increases a department's clearance rate but that more in-service training seems to actually decrease the clearance rate slightly, revealing some inconsistencies in types of community policing training. With the confidence interval of 95% this means that the real number of community training for in-service is most likely somewhere between -0.19 and 0.01. Population is also approaching significance and has a positive relationship with clearance rates (B = 3.675E-8; p = 0.097; CI = 0.000 - 0.000). Agency size is significant and is negative, so the more officers a department has, the lower the clearance rate (probably due to a higher crime rate).

Discussion

In this article, I have attempted to determine the best policing practices to decrease use of force and increase departmental clearance rates, thus improving procedural and outcome justice. Despite my findings of higher educational requirements increasing use of force and decreasing clearance rates, I argue that increasing educational requirements may nevertheless aid in a department's ability to improve procedural and outcome justice, albeit after taking some necessary supplemental steps. From the correlation matrix, the education requirements and the community recruit training correlation is 0.07; thus, an agency that requires more education is more likely to utilize evidence-based policing practices and have community policing training for recruits. This is key for the improvement of outcome justice because the linear regression model indicated that community policing training for recruits is a factor in increasing the clearance rate of a department. Therefore, increased educational requirements improve clearance rates through evidence-oriented departmental approaches.

The main influence driving the amount of use of force appears to be crime rates. Once the crime rate of an area is controlled for, the other variables in the negative binomial regression model were no longer significant; this suggests that officers in neighborhoods with more crime tend to use more force. This finding is consistent with the widespread perception of crime rates as being highly correlated with police use of force (Smith, 2004; Lersch et al., 2008; Holmes et al., 2018). Increased education requirements and community policing training both increased use of force. This could be a product of careerism in college-educated officers, who are incentivized to use force more often with the promise of career advancement. However, if we consider different types of departmental objectives, increased careerism may not inherently be a bad thing. If the goals of the department align with public interests, careerism could be beneficial for the community. By using Wilson's (1968) police "operation styles," including a legalistic style, a service style, and a watchman style of policing, we can see how the objectives of a department contribute to the type of careerism that officers exhibit on the job. Legalistic policing uses formal law to inform interactions with citizens (guided by citations and arrests), service policing prioritizes helping citizens rather than using law to guide interactions (similar to community policing), and watchman policing prioritizes peacekeeping and infrequent citizen interactions (Wilson, 1968; Liederbach & Travis, 2008). Careerism reflects whatever the goals of a department are, be it legalistic, service, or watchman. So, if the goals of a department are to be service-oriented, careerism for that department would mean solving community complaints safely and with no force. The findings suggest that departments that use evidence-based policing, such as community policing training, have higher clearance rates. Careerism from increased education requirements causes use of force to increase, but by switching the department style from legalistic to service policing, careerism can help improve community-police relations. Officers would still use these scenarios to advance their career, but the outcome would also align with the desires of the public. Thus, the real concern should not be increased careerism of college-educated officers, but the type of police behaviors that a department encourages and rewards with career advancements.

Role theory posits that if a service-style of policing is defined by the department, officers will understand the job expectations and respond accordingly, thereby using less force on the job. The evidence that community policing training for recruits increases clearance rates indicates that the creation of more service-oriented departments can be used to proactively teach new officers that the goal of the department is to help citizens above all else. College educated, careerist officers in a highly legalistic department will only increase interactions with citizens that facilitate police use of force. Organizational evolution theory asserts that current policing styles may be under fire due to tensions between the police and the public; this is generated from an excess of police use of force. Upon entering the militarized era of policing, legalistic policing has likely increased. This may explain why there is a positive relationship between education and use of force. However, following this logic, if we go to a community policing or service style of policing and therefore change what policing behaviors and tactics are rewarded, we would likely see a reversal of that relationship and education would then lead to less use of force. Therefore, I argue that increased education requirements are necessary to facilitate the transition from a legalistic to a service style department, because the career-oriented attitudes of college-educated officers make them more apt to follow the objectives of the department.

Thus, my first explanation of the results is that the performance of police departments is not easily improved, but increased departmental educational requirements may help officers adapt to a shift in the foundational proceeding and goals of police departments across the US, with community policing at the center. I argue that these changes will increase procedural justice through less police use of force and outcome justice through higher departmental clearance rates.

Another possible explanation of the results that increased education requirements and community policing training do not improve procedural and outcome justice is that these changes are symbolic. Meyer and Rowan (1977) argue that organizations often create formal structures to reflect a certain image and not to create real change. Legitimacy can be increased through the adoption of certain policies, no matter if the policies actually work to improve the intended characteristics of an organization (Meyer & Rowan, 1977). Education requirements and community policing training would be the formal structures created to represent a more professional police force, but without any real structural change or enforced community policing guidelines, police departments are bound to remain the same despite the seemingly drastic changes being made. Cultural changes need to be made alongside institutional changes; simply changing the rulebook will not matter if it is not respected and deliberately enforced.

There are two main limitations for this study. Firstly, this is cross-sectional data, so it is difficult to tell which variable comes first, the independent or dependent variable. For example, it may be the case that educational requirements were raised due to a department having heavy use of force. It is also possible that community police training was established at a department to combat high rates of use of force. The same could be said for low clearance rates; educational requirements and community training could have been put in place at the department in response to low clearance rates. The second limitation is that there may not be enough time to see the effects of increased educational requirements at the department level. It could take years after changing educational requirements to see shifts in use of force and clearance rates. This indicates that more information is needed on how long departments have been requiring a certain education level and what percent of officers in the department have attained that education level.

There are multiple potential future directions for this research. (1) Add the SARA-type training programs that the LEMAS records to see if they work to increase procedural justice. The SARA model is a community policing model that stands for Scanning, Analysis, Response and Assessment and focuses on fixing the root of community problems rather than treating the symptoms (ASU Center for Problem-Oriented Policing, 2021). Adding this training variable could provide for some insights into the effectiveness and necessity of the SARA program for increased procedural justice. (2) Use crime rate as a dependent variable to measure outcome justice; it is most likely a better measure for understanding the effectiveness of police departments, particularly for community policing training outcome. (3) Include a measure of departmental complexity (such as how many detectives per department) as this may also affect outcome justice. (4) Add a control to determine which departments are legalistic/service oriented in order to understand how educational requirements operate in each of these types of departments. For example, departments with a higher budget for militarized equipment are more legalistic. (5) Instead of cross-sectional data, include a lagged variable for dependent variables that might allow the effects of educational requirements to show. These changes would allow for research that abates the current limitations of a cross-sectional dataset and the issue of variable cause and effect. It also allows for a clearer understanding of outcome justice through the use of crime rate as a proxy measure, which will more clearly show the effectiveness of police departments in quelling crime. Including departmental complexity measures and determinations of a legalistic or service-oriented department will also work to create a deeper departmental profile with which to more effectively judge the effects of education requirements and community training. All of these future directions are necessary in facilitating a more well-rounded analysis of police departments.

Conclusion

This article addresses the hotly debated topic of whether college-educated officers are the solution to decrease use of force while still maintaining a high level of crime solving. Theoretically, organizational evolution theory indicates that times are changing and police departments should increase educational requirements alongside national trends. Role theory posits that officers will perform their duties based on their understanding of the expectations of the job given to them by the department through both formal and informal avenues, such as workplace policies and culture. My results suggest that community policing training for recruits will improve clearance rates and that a department is more likely to have these community training programs if the educational requirements are higher. Use of force is seen to increase with both educational requirements and community training, but this is potentially due to legalistic careerism. By instating service-oriented departmental goals, college-educated officer careerism could work in favor of communities by serving citizens for career advancement rather than striving for more citations and arrests. I argue that a smooth transition to increased education requirements, characterized by a balance of procedural and outcome justice, can be achieved through the combination of two steps: (1) mandate community policing training for police recruits at every department, and (2) change the foundational structure/culture of police departments to be service-oriented, rather than legalistic, by heavily rewarding positive interactions with citizens to encourage a type of careerism that benefits both officers and citizens.

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Appendix A

Table 5: Description of Variables

Variable	Definition	Source
Clearance Rate	The total number of index crime offenses cleared by arrest divided by total actual index crime offenses, multiplied by 100	Calculated from UCR Variables
Use of Force	How many total use of force incidents did your agency record? If none, enter '0'.	LEMAS
Population	(No definition, taken directly from Census Bureau)	LEMAS
No Minimum Education	As of January 1, 2013, what was your agency's minimum education requirement for sworn new hires? Check one: 1) No minimum requirement	LEMAS
High School Diploma	As of January 1, 2013, what was your agency's minimum education requirement for sworn new hires? Check one: 2) High school diploma or equivalent (e.g., GED)	LEMAS
Some College	As of January 1, 2013, what was your agency's minimum education requirement for sworn new hires? Check one: 3) Some college but no degree	LEMAS
Associate's Degree	As of January 1, 2013, what was your agency's minimum education requirement for sworn new hires? Check one: 4) Associate's Degree or equivalent	LEMAS
Bachelor's Degree	As of January 1, 2013, what was your agency's minimum education requirement for sworn new hires? Check one: 5) Bachelor's Degree or equivalent	LEMAS
Crime Rate	The total number of actual offenses divided by the LEMAS population variable, multiplied by 100.	Calculated from UCR & LEMAS variables
Agency Size	As of January 1, 2013, how many paid sworn personnel worked in your agency? Do not include seasonal employees whose positions are regularly added during peak months of the year and dropped after the peak season - Full-Time	LEMAS
Community Policing Training	During the 12-month period ending December 31, 2012, what proportion of full-time sworn personnel received at least 8 hours of training on community policing issues (e.g., problem solving, SARA, and community partnerships)?	LEMAS
Population Density	Census variable labeled, "Population per square mile, 2010"	Census
Median Income	Census variable labeled, "Median household income (in 2019 dollars), 2015-2019," divided by 10,000	Calculated from Census variable
Percent Minority	Census variable labeled, "White alone, not Hispanic or Latino, percent," subtracted from 100	Calculated from Census variable

Percent Educational Attainment	Census variable labeled, “Bachelor’s degree or higher, percent of persons aged 25 years+, 2015-2019”	Census