

Revisiting the Ferguson effect: Law enforcement perception of recruitment in the post George Floyd era

Christopher Copeland

Tarleton State University, USA

Alex del Carmen

Tarleton State University, USA

Olga B. Semukhina 

Tarleton State University, USA

Abstract

Mainstream media have argued that prolonged and harsh criticism of police officers prompted by death of Michael Brown at the hands of Ferguson police has had a major negative effect on the US law enforcement community. This phenomenon, known as the “Ferguson effect”, was exacerbated in the following years by the availability of other violent public–police interactions propagated through social media. The academic literature found almost no evidence that the Ferguson effect had any impact on crime rates and only limited evidence that it resulted in de-policing in the United States. Missing from this conversation is research on how the Ferguson effect impacted the ability of police departments to maintain staffing levels and recruit new officers nationwide. This article fills this gap in the research literature by examining levels of officer retention and recruitment from an organizational perspective. Police chiefs in Texas were surveyed about their perceptions of the Ferguson effect on department recruitment and retention efforts. The results found that the Ferguson effect is related to increased difficulty in officer recruitment but its impact is relatively small when compared with traditional recruitment challenges such as limited budgets and competitive job markets. The findings also reported no impact of the Ferguson effect on police departments’ retention issues. This article discusses these findings within the scope and context of George Floyd’s death and current civil rights issues in the United States.

Keywords

Ferguson, policing, Texas, officers recruitment, officers’ retention

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Introduction

The death of an unarmed Black man, Michael Brown, on 9 August 2014 at the hands of local police inadvertently changed the landscape of US public–police relationships. Followed by a series of other fatal shootings of African Americans by local police officers and accompanied in several cases by video footage,¹ Michael Brown’s death has brought profound public criticism to local law

enforcement entities while straining already difficult relationships between police and minority racial groups (Weitzer, 2015). The term “Ferguson effect” was coined

Corresponding author:

Olga B. Semukhina, Department of Criminal Justice, Tarleton State University, 10850 Texan Rider Drive, Fort Worth, Texas, USA.
Email: semukhina@tarleton.edu

by the media and law enforcement officials in an effort to capture this notion of prolonged negative publicity, and accusations of racial profiling and excessive use of force by police, which emerged after the Ferguson shooting (Nix and Wolfe, 2016; Oversight of the United States Department of Justice, 2015).

The media and some law enforcement officials² have been quick to blame the Ferguson effect for many social problems, including difficulties that local police have experienced with the recruitment and retention of police officers (Dogan, 2017; Jackman, 2018; Maciag, 2018). To date, these claims have not been substantiated by academic research. For that reason, the purpose of this article is twofold. First to look for empirical evidence of whether police departments as organizations acknowledge experiencing any Ferguson effect. Second, to examine whether departments that claim to experience the Ferguson effect face more serious issues with retention and have to put more effort into recruitment, as claimed.

In the past decade, local law enforcement agencies in the United States have experienced a continuous “workforce crisis” prompted by their inability to recruit new officers, declining retention rates, and growing levels of retirement (Wilson et al., 2010). This problem has been coupled with challenges brought about by the 2008 economic recession, increasing requirements for new police officers, and growing political demands for a more diversified police workforce (Police Executive Research Forum, 2019). According to the Bureau of Justice Statistics (BJS), the number of local police officers in the United States grew by 8% between 1997 and 2016, whereas over the same period the population increased by 21% (Hyland and Davis, 2016). The 2018 survey of the government workforce indicated that 27% of local municipalities consider police agency openings to be the most difficult to fill, a sharp increase from 2009 when only 5% of local municipalities reported such issues (Franzel and Young, 2018).

The shrinking number of police recruits has been well anticipated since the early 2000s with smaller numbers of Americans fitting the general hiring requirements for a police officer position (i.e., a clean criminal record, little to no drug use, good physical health, and financial stability) compared with the pool of qualified applicants in the 1990s (Raymond et al., 2005). These demographic changes are accompanied by generational shifts in work values among new recruits from Millennials and Generation Z. Values of more-rapid advancement opportunities, better balance between work and family, and flexibility and emotional control, appear to be inconsistent with traditionally rigid law enforcement working environments (Harrison, 2007; Wilson et al., 2010).

Recruitment challenges for local police were coupled with issues of low retention rates and increasing retirements

during the period 2000–2019. Research has consistently shown that budget cuts, changes in generational values and fierce competition from the private sector and federal law enforcement agencies all contributed to the number of police officers leaving their jobs after just a few years of service (Wilson and Grammich, 2009). In addition, the mass retirement of baby-boomers has exacerbated the already shrinking police workforce during the period 2010–2014 (Wilson et al., 2010).

Moreover, police departments nationwide have faced many other issues, including inadequate compensation, an inability of police departments to compete with private industry, and an increasing number of officers leaving agencies early to pursue other careers (Police Executive Research Forum, 2019). Police budget allocations are complex issues affected by not only officers’ performance indicators or crime rates, but also local politics, including a desire for incrementalism among local leaders (Heath, 2021). Also, the changing nature of police work requires new recruitment strategies and traditional recruitment models used by departments are often misaligned with both new generational values and new diverse audiences of potential recruits (Cain, 2019; Wasilewski and Olson, 2017). In addition to these issues, police recruitment and retention have been hampered by public scandals, with co-worker harassment and a culture of professional bullying in many police departments (Miller, 2019).

In recent years, arguably one of the most serious obstacles for recruitment has been the public display of excessive use of force by police. It is argued that the Ferguson effect hurt police recruitment and retention efforts by challenging the legitimacy of the institution itself and making the job of being a police officer even less desirable in the eyes of the public (Nix and Wolfe, 2015; Todak, 2017). Researchers reported that public attitudes on the police, post Ferguson, showed a significant decline in institutional trust, perceived effectiveness and fairness, and increased negative perceptions of police misconduct (Culhane and Schweitzer, 2018; Desmond et al., 2016; Jones, 2015; Nix and Pickett, 2017). These views were especially prominent among members of African American communities; the very group that the police has been targeting for recruitment in the past 20 years (Jones, 2015; Kochel, 2019).

Although negative publicity and a public outcry on the excessive use of force are not new for American law enforcement (e.g., Rodney King police riots), researchers believe that the Ferguson effect is different in two important ways (Nix and Pickett, 2017). First, unlike previous negative publicity disseminated in the traditional media outlets, the Ferguson effect was not localized to any specific community because of the propagation of information on social media. Second, unlike previous conflicts with certain neighborhoods and communities, the availability

of cell phone cameras and the ease with which police footage was disseminated online made police officers suspicious of most or all citizen interactions (Mercado, 2019; Nix and Wolfe, 2016). These features led both media outlets and researchers alike to believe that the Ferguson effect on police agencies could be much more pronounced, far-reaching, and longer-lasting than previous negative media campaigns (Nix and Wolfe, 2015).

The purpose of this study is to examine whether there is any empirical evidence that the Ferguson effect exacerbated the already difficult situation with police recruitment and retention. In addition, the purpose of this study is to help understand whether police departments, as organizations, increased their recruitment efforts to counter this potential challenge. As the initial test for this proposition, the current study uses a survey of 117 chiefs of police representing various law enforcement agencies throughout the state of Texas.

Literature review

There is a growing body of literature surrounding the Ferguson effect; it relates mostly to two interconnected issues: increased crime rates and de-policing. In 2015, at least two mainstream media outlets published articles concerning a “new crime wave”, which was allegedly caused by the Ferguson effect (Davey and Smith, 2015; MacDonald, 2015). Discussion in the academic literature following these articles, however, found very little empirical evidence supporting this hypothesis.

Pyrooz et al. (2016) examined Part I criminal offence data from 81 cities prior to and after the Ferguson event. This study found no support for a systemic post-Ferguson change in violent and property crime; however, there was a statistically significant increase in robberies (Pyrooz et al., 2016). Morgan and Pally investigated both crime and arrest rates specifically for the city of Baltimore to examine both the Ferguson effect and the local shooting of Freddie Gray, which was followed by events of public unrest (Morgan and Pally, 2015). When adjusting for seasonality, very weak evidence of the Ferguson effect on crime rates in Baltimore was identified; however, there was a short spike of crime after the death of Freddie Gray (a Baltimore resident) and the appointment of a new police commissioner (Morgan and Pally, 2015).

A study of crime incidents in Chicago between 2008 and 2016 also found little support for the Ferguson effect on crime rates (Towers and White, 2017). The authors concluded that an increase in murders and assaults involving firearms started well before the death of Michael Brown and is likely to be prompted by the abundance of guns in the city (Towers and White, 2017). Research conducted in the city of St. Louis, which is located only a few miles

from Ferguson, also produced little evidence to support an alleged surge in crimes or a crime wave after Michael Brown’s shooting (Rosenfeld, 2015). Although the study found an overall increase in crime, again it started before the death of Michael Brown and thus can hardly be attributed to the Ferguson effect (Rosenfeld, 2015). Overall, studies about the Ferguson effect on crime rates consistently show little evidence to support a general “crime wave theory”; at best, the Ferguson events may have contributed to a short-lived, localized increase in certain crimes.

There is much less consensus on what effect the Ferguson events had on police actions in general and whether they caused officers to scale back on proactive actions (“de-policing”). A number of studies turned to the police officers themselves to fully understand the effect that prolonged negative publicity had on their daily interactions with the public. Wolfe and Nix conducted a survey of 567 deputies to find out whether the Ferguson effect was associated with a decreased willingness by police officers to engage in community partnerships (Wolfe and Nix, 2016). The authors reported that although there was a statistically significant de-policing effect after the Ferguson events (decreased engagement with the community), such an effect was mainly mitigated when accounting for the organization (Wolfe and Nix, 2016).

Bollinger (2018) surveyed 39 police officers in one Midwestern department and also found no self-reported de-policing effect post Ferguson. The officers were “not apprehensive about stopping whites to investigate crimes and were not hesitant to use force against whites at a statistically significant level” (Bollinger, 2018). A study by Mercado surveyed 792 law enforcement officers from 10 different police agencies to examine whether an officer’s personal and contextual characteristics influenced their decision to take law enforcement action or extend their discretion (Mercado, 2019). The study found limited support for the de-policing hypothesis, but only when a cell phone is present during a public–police interaction are officers more likely to extend the discretion controlling for all other contextual characteristics including the officer’s and victim’s race, gender and age (Mercado, 2019). Other de-policing actions did not exist in the context in which cell phone videotaping was not present (Mercado, 2019).

Only two studies to date have looked at the numbers of vehicle/traffic stops, searches, and arrests to examine the theory of de-policing after the Ferguson events (Shjarback et al., 2017). Research in Missouri reported that departments serving larger African American populations conducted fewer stops, searches, and arrests in the post-Ferguson period when compared with the pre-Ferguson period. However, they reported that changes in police behavior had no statistically significant effect on

violent and property crime rates (Shjarback et al., 2017). A study in Baltimore demonstrated that arrests for less-serious crimes decreased in the period immediately following the Ferguson shooting and continued to decline after the Freddie Gray shooting (Morgan and Pally, 2015). Yet, arrests for all crimes increased after the appointment of a new police commissioner and remained stable during the following year (Morgan and Pally, 2015). Overall, there seems to be some support for the de-policing argument following the Ferguson events; however, the findings are not consistent among all localities and depend on both the nature of the department and the type of population that they serve.

Limited attention has been paid to the role that the Ferguson effect had on police recruitment and retention practices. The media and some law enforcement professionals have suggested that sustained negative publicity, coupled with harsh criticism and heightened scrutiny of police actions are likely to result in police officers quitting their jobs as well as reducing the number of police recruits (Maciag, 2018; Police Executive Research Forum, 2019).³ Empirical support for this proposition has been, at best, limited.

Two qualitative studies (Adams, 2019; Laverone, 2017) suggested that the Ferguson effect pressured some officers into quitting or almost quitting their jobs; however, the Ferguson shooting was listed among many other factors that led to officers' decisions to resign. These factors, among others, included the loss of trust in relations with the immediate supervisor, financial strain, and a lack of resources to cope with the stress of the job (Adams, 2019; Laverone, 2017). However, a quantitative study of 9584 officers who attended the FBI National Academy showed a weak correlation between the Ferguson effect and turnover intentions for police officers (Markopoulos Jr, 2017). Instead, officers showed less than an average level of turnover intentions as measured through a well-established scale created by Hinshaw and Atwood (Markopoulos Jr, 2017).

To date, two articles have examined the potential decrease in the numbers of recruits post-Ferguson events. A study by Rhodes and Tyler looked at seven years of applicants' data for the Dallas Police Department (Rhodes and Tyler, 2021) before and after the events in Ferguson. The study found no statistically significant decline in the number of applicants post Ferguson when controlling for race and gender (Rhodes and Tyler, 2021). Although this study has important implications, it is limited to one urban police department with a history of volatile public relations, and thus it is unlikely that such a study can be considered representative of the entire body of law enforcement.

A study by Morrow and colleagues examined a sample of 654 criminal justice students from two universities for

their intention to become police officers (Morrow et al., 2019). The authors concluded that negative publicity and the perceived risks of the profession were factors discouraging students from becoming police officers (Morrow et al., 2019). Although this study advances our understanding of police recruitment in the post-Ferguson period, it does have significant limitations. The use of criminal justice students as a proxy for police recruits has limited value because 69% of all police departments require only a high school diploma from their recruits and only 4% require a bachelor's degree (Police Executive Research Forum, 2019). Moreover, it is well known that college students are among the most challenging recruits for police departments because they are offered many other (and sometimes better paid) professional opportunities after graduating from college (Wilson et al., 2010).

Outside these studies, little is known to support or reject the mainstream media hypothesis that the Ferguson effect hampers recruitment to police organizations. To date, every study of the Ferguson effect on policing has focused on the effect that these events have had, if any, on individual officers, recruits, and citizens. To our best knowledge, no study has been identified that focuses on the organizational perspective of police recruitment and retention. From the research and policy perspectives, there is an obvious need to better understand the effects, if any, of the Ferguson events on police departments' hiring practices and the manner in which they have reacted to these potential challenges. This is especially relevant at the time when police organizations in the United States are experiencing yet another crisis of legitimacy after George Floyd's death, followed not only by prolonged negative publicity, but also legislative actions at both the federal and state level.

Three research hypotheses are put forward in this study: police departments that experienced Ferguson effect are more likely to have issues with (a) recruitment and (b) retention, and are (c) more likely to increase their recruitment efforts to cope with these problems.

Methodology

For the purposes of this study, the research question pertains directly to the recruitment and retention efforts of law enforcement agencies regarding the Ferguson effect. To this end, a population of chiefs of police in Texas was surveyed regarding their perception of the Ferguson effect in their organizations. The purpose of selecting police chiefs was their close representation of the unit of analysis, the police organization itself. Although some might argue that a better population would be police officers, it would be difficult for rank-and-file officers to grasp fully the organizational funding decisions made by those in command.

Non-leadership positions will not have the depth of understanding that command staff represent when directing the organization in its entirety, including recruitment efforts. For these reasons, the organization as the unit of analysis and their understanding of the administration, chiefs were surveyed about their perceptions.

The state of Texas is an important site for data collection on police organizations. According to the latest available data, Texas has the highest number of state and local police organizations (1913) of any state in the country and is second in terms of the number of local police organizations (788). In addition, Texas has the highest number of sheriff's officers in the country (254) and is home to the top four Public Safety Departments in the United States (3529). Texas is also in the top three states for the number of sworn personnel (59,219) after California and New York.⁴ At the same time, Texas ranked among the top seven states in the country for employment opportunities and promotion for law enforcement based on both starting salary and salary growth potential.⁵ Thus, any problem in Texas with issues of police recruitment and retention is not likely to be a local issue due to the size of sample and poor local economic conditions, and is more likely to represent a broader trend in the country.

The survey instrument was available for three weeks in 2018. The instrument contained 31 questions of varying types. Perception-related variables were asked in a 5-point Likert scale with various control variables. In a convenience sample available to the researchers of police chiefs in Texas, 1193 agencies were sent a recruitment-related email asking for voluntary participation in the study. Of these 1193 agencies, 117 responded to the survey, constituting a 9.8% response rate.

The study population was varied and diverse. When considering the size of the department, most were smaller agencies with 89% reporting fewer than 75 sworn officers and 50% reporting fewer than 25 sworn officers. Only 7.7% of departments had between 76 and 300 sworn officers and 2.85% had more than 300 sworn officers. No department reported sworn officer populations above 1,000 for this study. Of those surveyed, 97% do not operate their own police academies and of those that did, 66% operate two classes a year for incoming applicant officers.

The size of the service areas was also varied with 48% reporting municipality populations of less than 10,000, 40% reporting between 10,000 and 50,000, 5.7% reporting between 50,000 and 100,000, and 4.1% reporting more than 100,000 people in the serviced area.

Although 86% of respondents were male (2% were female and 11% declined to answer), experience as a law enforcement officer and as a police chief was substantially more varied. In terms of length of service as a police officer, 41.8% had at least 30 years of experience, 10.6% reported

between 10 and 20 years of experience, and 47.6% reported between 20 and 30 years of experience (12% was unreported). The majority, 80%, reported that they had 10 years or less service as a police chief, with 19.3% serving more than 10 years and 2.9% serving 20 years or more. Some 61% of respondents also noted that they had served in their current jurisdiction for 10 years or less, 18% had served in their current jurisdiction for between 10 and 20 years and 19.2% reported serving between 20 and 40 years.

Respondents were also highly educated, with 29% reporting at least some college, 13% reporting at least a 4-year college degree, 8.5% reporting some graduate school, and 35% reporting a graduate or master's degree, meaning that the majority of respondents (56.4%) had obtained a college degree of some type in addition to the annual requirements for maintaining Texas state licensing.

Compared with the entire population of police organizations, small agencies are under-represented in our sample with 50% of organizations having 25 or fewer sworn officers in our sample, whereas almost 72% of police organization in United States have fewer than 25 sworn offices. However, our data are well-representative of large agencies with 2.85% of agencies in our sample and 3% of agencies in the research population having more than 300 officers.⁶

Our sample is also under-representative of female police chiefs, with only 1.7% of chiefs being female in our sample compared with 9% nationwide. These study data are also over-representative of older police chiefs with 47% of our sample being over 51 years old, whereas the average age nationwide is 46.8 years. Our sample is also under-representative of police chiefs who hold a bachelor's degree (43% nationwide compared with 14.4% in our sample), but over-representative of chiefs with a master's degree (13% nationwide compared with 39.4% in our sample).⁷ Our sample appears to be more representative of Texas police chiefs, recording an average age of 52 years and 96.5% reporting to be male.⁸

Although this sample is not representative of the entire police chief population, it is diverse enough to substantiate the manner in which the Ferguson events had an impact, if any, on police departments of various sizes; further, it is diverse enough to examine whether different time in service and police chief demographics played a role in assessing the organizational response to the Ferguson events.

Basic descriptive statistics and Lasso regression were conducted to answer the questions: do police organizations experience the Ferguson effect and do any patterns exist for department size, serviced population, and location of the department within close proximity of the Mexican border? Based on previous literature, recruitment and retention challenges were also measured to determine whether they were associated with limited funding and the location of a police department in the competitive job market.

Because most of the data had ordinal and nominal levels of measurements, categorical principle component analysis (PCA) was used to create three major indices related to the state of recruitment, recruitment efforts, and retention efforts. The recruitment index measures the degree to which police departments recently experienced worsening of their recruitment situation. The recruitment efforts index looks at whether police departments have recently increased their monetary and non-monetary efforts for recruitment. Finally, the state of retention index examines whether police departments' experiences with retention have magnified in the past years. These indices were used as dependent variables in Lasso regressions to answer the second research question: does the Ferguson effect increase recruitment and retention challenges for police organizations? Factors of limited budgets and competitive job markets were also used as independent variables to account for alternative causes of recruitment and retention challenges.

Each regression model had a number of control variables pertaining to both characteristics of the police organization and characteristics of the police chief. The latter was needed because the data collected are the opinions of police chiefs and therefore need to be controlled for potential personal bias. Lasso regressions were used because of the categorical nature of the collected survey data and also multicollinearity issues related to the control and independent variables.

Prior to conducting categorical CPA per index, we ran all variables through a one-factor categorical PCA to ensure that we controlled for common method biases occurring from the use of same scales in this study. The findings resulted in three components, indicating that the data passed Harman's single-factor test (Podsakoff et al., 2003).

Findings

Descriptive statistics

The data presented in Table 1 pertains to the central question of the research, an opinion regarding causes of recruitment challenges among chiefs of police. Table 1 shows a breakdown of categories (frequencies and percentages) for the major independent variables. Table 2 provides Lasso regression on the Ferguson effect with independent variables related to police organizational characteristics and police chiefs' personal characteristics. Table 1 demonstrates that the Ferguson effect has been ranked number three among the four major reasons for recruitment and retention challenges (listed as primary reason for only 12.8%). Traditional factors that have been discussed in the literature for at least two decades (limited funding and competitive job markets) represent the bulk of the reasoning for recruitment issues (81.2% combined).

Based on Table 2, both the department size and serviced population show statistically significant relations with the Ferguson effect. Larger departments with larger serviced populations are more likely to experience the Ferguson effect. A closer look at Table 1 also shows that larger departments with serviced populations over 10,000 tend to see the competitive job market as a major reason for their issues with recruitment, whereas smaller departments with serviced populations below 10,000 tend to blame lack of funding.

There were also no statistically significant relations when the region of the Texas Commission on Law Enforcement (TCOLE) to which the chiefs belong and their opinions on recruitment challenges were examined. The TCOLE regions have been combined into areas with a direct border with Mexico (regions 2 and 3) and other regions. Table 2 also shows regressions for police chiefs' personal characteristics (age, gender, years of service, and time in the jurisdiction). None of these factors were significant in explaining the existence of the Ferguson effect.

State of recruitment

Next, analysis was conducted to determine whether the departments that experienced the Ferguson effect had also experienced a worsening in recruitment. To this end, using categorical PCA, an index was created that reflects chiefs' opinions on current state of recruitment. The index measures whether the situation with recruitment had worsened according to the opinions of police chiefs. Table 3 displays component loading for this index. The index has an acceptable Cronbach's alpha of .862 and accounted variance of (eigenvalue) of 3.218. No other dimensions have been extracted with an eigenvalue over 1.00 which demonstrates that the data are unidimensional. Indicators with loadings of less than .5 has were excluded from this index.

Table 4 reveals the results of a Lasso regression model with the state of recruitment index as the dependent variable. The Ferguson effect appears to be statistically significant in the model, indicating that police departments that experience the Ferguson effect are also more likely to experience a worsening in their recruitment situation ($\beta = 0.024$ $p = .033$). However, other challenges such as limited budgets and competitive job markets appear to be statistically significant as well and have higher standardized coefficients than the Ferguson effect ($\beta = 0.483$ $p = .003$ and $\beta = 0.298$ $p = .005$ accordingly). As shown in Table 4, both departments that experience limited budgets and those located in competitive job markets are more likely to see a worsening in recruitment. Moreover, control variables for department size and serviced population are also statistically significant with standardized coefficients above 1 for the Ferguson effect ($\beta = 0.196$ $p = .016$

Table 1. The primary reason for recruitment challenges in police departments per department's size, service population and TCOLE region.

Primary reasons	Department size		Serviced population		TCOLE regions		
	1–25	≥ 25	< 10,000	> 10,000	No border	Border	Total
Budget limitations	24 (40.7)	4 (8.7)	22 (43.1)	6 (11.1)	17 (21.5)	11 (44)	33 (28.2)
Hiring guidelines	1 (1.7)	2 (4.3)	2 (3.9)	1 (1.9)	3 (3.8)	0 (0)	3 (2.6)
Competitive market	29 (49.2)	30 (65.2)	21 (41.2)	38 (70.4)	48 (60.8)	10 (40)	62 (52.9)
Ferguson effect	15 (12.8)	10 (21.7)	6 (11.8)	9 (16.7)	11 (13.9)	4 (16)	15 (12.8)
Total	59 (100)	46 (100)	51 (100)	54 (100)	79 (100)	25 (100)	117 (100)

Table 2. Lasso regression for Ferguson effect.

Dependent variables	B	SE	Beta	t	p
Organizational characteristics					
TCOLE region	0.566	0.119	0.405	0.807	.403
Service population*	1.787	0.960	0.205	1.930	.004
Department size*	1.843	1.003	0.345	1.122	.002
Chiefs' characteristics					
Experience as a police officer	0.346	0.583	0.567	0.528	.751
Experience as chief	-0.865	0.638	-0.605	-0.856	.449
Experience in the current jurisdiction	-0.099	0.075	-0.105	-2.005	.453
Level of education	-0.608	0.445	-0.102	-0.104	.687
Age	-1.307	0.741	-0.342	-1.560	.207
Gender	0.338	1.865	0.036	0.195	.899

*Significant at .005 level.

and $\beta=0.240$ $p=.000$ accordingly). Therefore, according to Table 4 larger departments with larger serviced populations are more likely to see a worsening in recruitment.

Recruitment efforts

Categorical PCA was also used to create a recruitment effort index that measures whether the departments have had to increase their recruitment endeavors to sustain appropriate officer numbers. Table 5 shows the indicators included in this index and component loadings. No indicators were excluded because all component loadings exceeded the threshold of .5. This index demonstrates high internal consistency with a Cronbach's alpha of .944 and accounted variance of 4.690. No other dimension was extracted with an eigenvalue exceeding 1, which suggests that the data are unidimensional.

Presented in Table 6 are findings from the Lasso regression with recruitment efforts index as a dependent variable. As seen from Table 6, the Ferguson effect is a statistically significant predictor of increased recruitment efforts for police departments ($\beta=0.049$ $p=.009$). Also statistically significant are

Table 3. Categorical PCA for state of recruitment index.

Indicator	Component loading
I feel the number of applicants for police-related jobs in my department has decreased	.798
I feel the quality of applicants for police-related jobs in my department has decreased	.773
I feel the length of the application process for police-related jobs in my department has increased	.334
I feel the standards for applicants for police-related jobs in my department has been lowered	.513
Recruitment of qualified candidates for police-related jobs has become more difficult	.627

the factors competitive job markets ($\beta=0.301$ $p=.000$), limited budgets (lack of funding) ($\beta=0.149$ $p=.007$) and two control variables (department size with $\beta=0.515$ $p=.001$ and serviced population with $\beta=0.165$ $p=.000$). The model in Table 6 shows that departments with a lack of funding and those in competitive job markets are both more likely to increase their recruitment efforts. However, the factors competitive job markets and large department size are stronger predictors of increased recruitment efforts.

In addressing the second research question, whether police departments as organizations increased their recruitment efforts to counter the Ferguson effect, the results are mixed but informative. Similar to the previous model for the state of recruitment, the findings in Table 6 suggest that the Ferguson effect plays an important but relatively small role in explaining a department's increased efforts in recruitment, with a standardized coefficient of only .049.

State of retention

Table 7 presents the results of categorical PCA for the state of retention index, which measures to what extent police

Table 4. Lasso regression of state of recruitment index.

Dependent variables	B	SE	Beta	t	p
Ferguson effect*	2.076	0.956	0.024	2.172	.033
Budget limitations*	0.605	0.840	0.483	1.721	.003
Competitive markets*	1.119	0.886	0.298	0.998	.005
Organizational characteristics					
TCOLE region	0.786	0.829	0.101	0.948	.346
Service population*	1.267	0.731	0.196	1.734	.016
Department size*	1.443	0.970	0.240	1.430	.000
Chiefs' characteristics					
Experience as a police officer	0.026	0.081	0.060	0.320	.750
Experience as chief	-0.065	0.068	-0.109	-0.951	.344
Experience in the current jurisdiction	-0.069	0.035	-0.207	-1.959	.053
Level of education	-0.006	0.244	-0.003	-0.024	.981
Age	-1.002	0.753	-0.241	-1.330	.187
Gender	0.437	2.285	0.019	0.191	.849

*Significant at .005 level.

Table 5. Categorical PCA recruitment efforts index.

Indicator	Component loading
The department has increased spending on officer recruitment	.779
The department has increased the number of personnel needed for officer recruitment	.843
The department has incurred more cost for recruiting materials and marketing for officer recruitment	.865
The department is advertising in non-traditional places to find qualified applicants for police-related jobs	.738
The department has increased recruitment of minorities for police-related jobs	.728
Recruiters are having to travel further to recruit qualified candidates for police-related jobs as compared with the past	.674

officer retention has worsened compared with the past. All loadings are above .5 and therefore retained. The index has Cronbach alpha of .748 and an accounted variance of 2.491 which indicates acceptable internal validity. Only one dimension extracted with an eigenvalue above 1.0 showing the data is unidimensional.

The results of Lasso regression for the state of retention index are presented in Table 8. Only three factors appear to be statistically significant: budget limitations ($\beta=0.409 p=.038$), competitive market ($\beta=0.380 p=.040$), and

Table 6. Lasso regression of recruitment efforts index.

Dependent variables	B	SE	Beta	t	p
Ferguson effect*	1.674	1.293	0.049	1.295	.009
Budget limitations*	0.224	1.243	0.149	1.181	.007
Competitive markets*	8.439	2.769	0.301	2.138	.000
Organizational characteristics					
TCOLE region	0.679	0.465	0.165	1.451	.011
Service population*	0.062	1.208	0.515	1.003	.001
Chiefs' characteristics					
Experience as a police officer	0.123	0.156	0.084	0.789	.432
Experience as chief	-0.044	0.200	-0.304	-0.990	.350
Experience in the current jurisdiction	-0.045	0.137	-0.192	-1.430	.453
Level of education	-0.004	0.134	-0.001	-0.023	.999
Age	-0.807	0.651	-0.181	-1.055	.203
Gender	0.349	1.183	0.011	0.149	.488

*Significant at .005 level.

Table 7. Categorical PCA retention efforts index.

Indicator	Component loading
Retirement of experienced police officers has increased	.568
How many officers retire per year? (Please enter a number)	.814
Experienced police officers have transitioned to other police departments	.883

department size ($\beta=0.201 p=.000$). The Ferguson effect does not have a statistically significant impact on the state of retention index. This is also the case for serviced population. Other control variables including the characteristics of the police chief and location in regions close to Mexican border appear to be insignificant. The results in Table 8 suggest that larger departments, those experiencing budget limitations, and those located in competitive job markets are more likely to experience worsening officer retention.

Discussion and conclusion

The overall findings of this study suggest that police department of all sizes, serviced populations, and locations experience significant difficulties in their recruitment efforts. Larger departments with a large serviced population were more likely to blame a competitive job market for their

Table 8. Lasso regression of retention efforts index.

Dependent variables	B	SE	Beta	t	p
Ferguson effect	0.394	0.582	0.069	0.676	.501
Budget limitations*	2.454	2.446	0.409	1.004	.038
Competitive markets*	0.152	0.596	0.380	0.970	.040
Organizational characteristics					
TCOLE region	0.034	0.049	0.126	0.689	.493
Service population	0.477	1.402	0.096	0.340	.054
Department size*	0.809	0.630	0.201	1.283	.000
Chiefs' characteristics					
Experience as a police officer	0.006	0.035	0.016	0.136	.882
Experience as chief	-0.027	0.022	-0.132	-1.228	.232
Experience in the current jurisdiction	-0.320	0.153	-0.224	-2.084	.440
Level of education	-0.330	-0.409	-0.071	-0.673	.503
Age	-0.656	-0.812	-0.083	-0.708	.442
Gender	1.044	0.753	0.251	1.368	.195

*Significant at .005 level.

recruitment challenges, whereas smaller departments with a small serviced population were more likely to attribute their difficulties to small budgets and reduced funding.

The Ferguson effect had a statistically significant impact on both the state of recruitment and recruitment efforts in this study. Departments that experienced the Ferguson effect were more likely to see a worsening of their recruitment situation and had to increase their recruitment efforts. However, the relative effect of the Ferguson variable was small for both state of recruitment and recruitment efforts when compared with alternative explanations, namely limited funding and competitive job markets. These claims were unaffected by the personal characteristics of the police chiefs or the location of the department with respect to the Mexican border.

Also, these findings did not support the proposition that the Ferguson effect further exacerbates the retention issues within police departments. Instead, the traditional factors of limited funding and competitive job markets, coupled with department size played an important role in explaining problems with officer retention. One potential explanation lies in the nature of the Ferguson effect which mostly undermines the legitimacy of a police institution in the eyes of public. It is possible to suggest that potential police recruits are more likely to respond to such negative publicity than those who are already police officers.

This study shows that these same police departments with larger serviced populations are also more likely to experience the Ferguson effect, are more likely to have recruitments issues, and may need to increase their recruitment efforts. Based on the collected data, we can only speculate that larger departments are more likely to be located in urban areas with more racially diverse and socially vulnerable populations. If this is the case, it is understandable that these departments are more likely to experience the Ferguson effect and to be impacted by recruitments issues.

This negativity, along with advanced opportunities in related areas of civic service such as courts, probation, parole, social work, counseling, and fire services present challenging competition for qualified applicants. If salaries and benefits are competitive, the recruitment of qualified candidates will be impacted through the remaining and currently negative stigma associated with policing in the United States. This issue is compounded in larger service areas or cities, where opportunities for starting employment, promotion, and the concentration of universities for education and training are greater than in non-urban or smaller service population areas.

It is worth noting that a department's hiring guidelines were not a factor in this study. Police departments in Texas have a diverse set of requirements regarding education and hiring practices, with many common factors such as the civil service exam, review board, and polygraph as examples. Often smaller departments do not have the same education requirements as larger service area agencies in an effort to drive recruitment. This was not a driving or significant factor in this study. Neither the responses for lowering standards or the application process were contributory. This warrants further research; specifically, it would be interesting to note what applicants perceive and perhaps a deeper understanding of candidate requirements in a post Ferguson environment.

The personal characteristics of police chiefs such as age, education, and levels of experience appear to have little to no effect on whether a police department experienced the Ferguson effect. This is likely to suggest that opinions for recruitment rationale are not personal and are more likely to reflect the practices and difficulties faced by police departments. Data in this study were not available to account for service area crime rates, department average salary, employment benefits, and many of the other factors that inevitably impact recruitment practices. Information on these topics is seldom self-reported by departments. Further mixed methods research is needed to understand how these factors interact with the Ferguson effect on recruitment.

The findings of this study are limited by our data-collection method, non-representative sample, and low response rate. It is possible that a more nuanced

understanding of the Ferguson effect would emerge if we had a better response rate and were able to collect data from multiple states. It is also likely that having more smaller agencies and more female police chiefs would influence our findings.

Further research should also consider the impact of the Ferguson effect on the applicant pool. It would be interesting to survey qualified applicants applying for the TCOLE regions in this survey to see what, if any, factors interact with the retention and recruitment efforts in those regions. Follow-up studies should also look to see how long the Ferguson effect on recruitment impacts the recruitment and retention efforts. Additional questions should consider political affiliation if any and the impact of time-sensitive events like the death of George Floyd. Added to this, some form of mixed qualitative data would provide a deeper understanding from the perspective of those in administrative or command positions.

As previously stated, the Ferguson effect has been discussed widely in both academic and law enforcement circles. However, before this study, a great deal of the discussion was based on “feelings” and “instincts” that somehow it appeared that police departments were experiencing an impact on the number and quality of applicants seeking employment in policing. The data collected and analyzed in this study demonstrate that the Ferguson effect is real and that it did impact law enforcement agencies on an organizational level. This impact, however, is likely to be complex and intermingle with issues of funding and competitive job markets. This length of time the Ferguson effect impacts law enforcement agencies is particularly significant because it is not yet fully understood. The findings of this study are particularly relevant given recent events that have continued to create a sense that American policing is in critical need of intervention and reform.

There is also no full understanding, from a scientific perspective, of the implications of the death of George Floyd on American policing practices and standards. However, what is clear is that his death on 25 May 2020 has led to local, state, and national discussions on police reform. Much of that early discussion was focused on the idea of defunding the police or the reallocation of police funding to include the social work paradigm. Given the findings of this study, it is very likely that the death of George Floyd and related incidents in the past few months will add momentum to the apparent Ferguson effect. It is also clear that any further efforts to defund police organizations will have direct effect on recruitment and retention.

It is therefore imperative that law enforcement agencies begin to ask questions, from a scientific perspective, regarding how current events related to policing will present further challenges to the recruitment, training, and retention of police officers. It is critical for academics alike to focus

on the science related to this change while simultaneously advising police agencies on how to improve their recruitment techniques, which will counter negative publicity related to policing as a profession.

In sum, the findings reported here lead to more questions than answers. Further, they confirm that the Ferguson effect on policing in the United States is real, but may not have a relatively large effect when compared with traditional factors such as limited funding and competitive job markets. Police department administrators should review these findings and attempt to further isolate the “reasons” affecting negativity among police applicants that may present a policing career as less than ideal. Further, it only through an organized and focused social media and practical outreach campaign that police departments across the United States will be able to address the current apparent loss of trust and negativity associated with policing as a career.

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ORCID iD

Olga B. Semukhina  <https://orcid.org/0000-0002-8948-2004>

Notes

1. This list usually includes Eric Garner who died from a choke hold by a New York Police Department police officer; Walter Scott shot five times in the back by an officer in North Charleston, NC; 12-year old Tamir Rice shot by an officer in Cleveland in 2014; Alton Sterling killed by two officers in Baton Rouge in 2016; Philando Castile killed after a traffic stop in Minnesota in 2016; and the suspicious deaths of Freddie Gray in Baltimore in 2015 and Sandra Bland in Texas in 2015.
2. See, for example, comments by the Director of the Federal Bureau of Investigation and the Director of the Drug Enforcement Administration at the time in 2015. See also IACP publication “The State of Recruitment: A Crisis For Law Enforcement” p. 4 (<https://www.theiacp.org>).
3. See, for example, a statement by Richard Myers, Executive Director of the Major Cities Chiefs Association: “The national narrative of the last couple of years is pretty condemning of policing. It has had strong adverse effect on recruiting people from the very communities we most need to hire”. (cited in Maciag, 2018).
4. See Bureau of Justice Statistics (2008). Census of State and Local Law Enforcement Agencies. Retrieved on 11.01.21 at <https://bjs.ojp.gov/data-collection/census-state-and-local-law-enforcement-agencies-cslea>.

5. See for example WalletHub (2021). Best & Worst States to Be a Police Officer. Retrieved on 11.01.21 at <https://wallethub.com/edu/best-states-to-be-a-cop/34669>.
6. See Bureau of Justice Statistics (2008). Census of State and Local Law Enforcement Agencies. Retrieved on 11.01.21 at <https://bjs.ojp.gov/data-collection/census-state-and-local-law-enforcement-agencies-cslea>.
7. Data on Chiefs demographics are reported from Zippia. Chiefs of Police Demographics at <https://www.zippia.com/chief-of-police-jobs/demographics/>.
8. Texas Chiefs of Police Project by LEMIT at <http://www.lemitonline.org/research/projects-tcppp.html>.

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Author biographies

Alex del Carmen received a PhD in Criminology from the College of Criminology at the Florida State University. He is considered an authority on the topic of race and crime with particular emphasis on racial profiling in law enforcement. He has written numerous articles in internationally recognized journals and published several books. Among these is the nationally recognized book titled “Racial Profiling in America,” which he published with Prentice Hall. He has presented his research findings throughout the world. He has trained thousands of police officers including all of the Texas Police Chiefs. Additionally, he is responsible for creating the Texas racial profiling statistical template widely used by law enforcement agencies throughout the state. He is often a guest on CNN, Fox News Radio, Telemundo, Univision, and NBC, among other media outlets. He is currently a Professor and Associate Dean of the School of Criminology, Criminal Justice and Public Administration at Tarleton State University. He has also served as a Federal Monitor for two of the most significant police reform cases in the nation and was appointed by a federal judge to be served as a Special Master in the Puerto Rico police reform case.

Christopher Copeland is an Assistant Professor and the Director of the Institute for Homeland Security and Cybercrime at Tarleton State University. His research interests include cybercrimes, encryption, digital forensics, homeland security, critical infrastructure, and the application of technology in law enforcement. Additionally, he is a member of the North Texas Crime Commission Cyber-Crime Committee, Dallas FBI CA Alumni, and the US Secret Service North Texas Electronic Crimes Taskforce. He has spent over 19 years in the field of information technology, and he obtained a DSc in Information Systems Information Assurance from Dakota State University, an NSA recognized and sponsored program and has obtained several professional certifications including the coveted CISSP.

Olga Semukhina is an Associate Professor at the School of Criminology and Criminal Justice and Public Administration at Tarleton State University. Semukhina received her MS and PhD degrees from the University of Central Florida and her JD and LLM degrees from Tomsk State University, Russia. Prior to joining Tarleton, Semukhina worked for 10 years as an Assistant and Associate Professor of criminology and law studies at Marquette University. Before going into academia, she worked as a criminal defense attorney in Russia. She has over 15 years of experience working with various law enforcement agencies in Orlando, Florida, Milwaukee, and Wisconsin conducting evidence-based research on public views of police, intelligence and law enforcement data-sharing, spatial analysis for law enforcement crime-reduction strategies, and targeted community-policing efforts. Semukhina has a long history of funded research. She was a co-PI on \$645,000 grant from U.S. State Department to conduct research on Russian police abuse. She is currently a co-PI on NIJ grant examining Darkweb influence on cannabis market in North Texas. Semukhina is an author of two books and various articles on policing.