A National Examination of the Effect of Education, Training and Pre-Employment Screening on Law Enforcement Use of Force

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Abstract

For decade's law enforcement agencies have attempted to reduce use of force incidents by increasing pre-employment standards, requiring higher education, and providing extensive training. The belief is that a better educated officer, who has passed extensive pre-employment standards with enhanced training, will perform better and—among other goals—be less likely to use force inappropriately. The present study continues research in this area by utilizing national LEMAS data with structural equation modeling to examine 21 variables related to pre-employment screening techniques, hours of training, and higher educational requirements compared to agency use of force complaints. Findings indicate that increased employment screening tests, higher education requirements, and augmented training hours lowers departmental use of force complaints.

Introduction

Use of force issues are an important area of study in the field of law enforcement as no other action by law enforcement will likely cause as great scrutiny (legally, personally and

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otherwise) upon a department and individual officer. In fact, case law (City of Canton v. Harris, 1989) states departments are legally responsible for hiring and training officers who will act properly within the scope of the law (Ross, 2000; Alpert, 1989). Thus, agencies continually work to ensure they are taking every precaution possible to hire and train officers who will perform their duties well.

To that end the law enforcement community has been utilizing various methods of selecting and training officers for decades. These methods include higher education standards, basic training, field training, in-service training; as well as a myriad of pre-employment screening techniques such as criminal background checks, financial analysis, community relation skills, psychological exams, physical agility requirements, and more. Many of the methods used to hire and train officers have statistical support, others do not, and still others have mixed results (see Aamodt, 2004).

Further, what studies have been conducted on the use of force, education, training, and employment screening tend to be locally specific or plagued with methodological weakness (Rydberg & Terrill, 2010). Moreover, many of these studies provide mixed results, contradict each other, and may not indicate a casual order of the findings. Therefore, the ability to identify, hire and train officers who are capable guardians of society and use force appropriately remains a difficult task. Finally, there is no national database collecting use of force incidents, or even agency agreement on what constitutes force.

Despite these issues it is still necessary to understand force used by law enforcement, and what agencies can do to reduce its likelihood. With a better understanding of how law enforcement agencies hire, train, and educate officers the incidences of use of force by law enforcement may be reduced. The purpose of this present study is to examine the relationship between law enforcement agencies employment screening techniques, education requirements, and training standards with use of force complaints by the public. The present study will help researchers and policy makers to better understand what changes police agencies can make in hiring, training, and education standards which may reduce use of force.

Literature Review

Higher Education

Policing in the United States has changed dramatically since its inception. Around the 1920's August Vollmer began a push for what he referred to as professional policing. Among other changes, Vollmer began to recruit and hire college-educated officers within his department and founded the Criminal Justice program at the University of California at Berkley (Walker, 1977). However, Vollmer's push for educated officers would not become commonplace until the late 1960's and into the early 1970's. The impetus at that point came from, among other sources, the Wickersham Commission suggesting officers should

have a college education (National Commission on Law Observance and Enforcement, 1931) and the President's Commission on Law Enforcement (1968) reporting that it should be the aim of all police departments to have officers with college degrees.

As more college-educated officers began to fill the ranks among patrol officers (Carter & Sapp, 1990) researchers began to examine the relationship between education and police performance to determine what, if any, relationship exists. Many of these studies—generally—support the concept that education enhances an officer's performance. Findings include that college educated officers have less authoritarian beliefs (Dalley, 1975), exhibit enhanced communication skills (Worden, 1990; Carter, Sapp & Stephens 1989), have overall heightened job performance (Brandl, Stroshine & Frank, 2001), and tend to receive fewer complaints (Kappeler, Sapp & Carter, 1999, Cascio, 1977).

Especially relevant to the present study are findings that demonstrate the effects of education on use of force incidents. Several studies indicate that college educated officers have a significantly reduced likelihood of using force (Rydberg & Terrill, 2010; Paoline & Terill, 2007). For example, McElvain and Kposowa (2008) examined 186 officer-involved shootings and discovered officers with college experience were less likely to fire a weapon at an offender by 41%. Similarly, Terrill and Mastrofski (2002) found higher instances of use of force in 3,116 police-suspect encounters when the officer had less education and experience. The results of these studies indicate that there may be a marked difference between college-educated officers and those with only a high school diploma.

However, other researchers have found little correlation and call into question the impact of higher education in law enforcement. For example, Eskridge (1989) found that officers with college education have higher rates of on-the-job boredom and harbor hostility toward to supervisors who lack education. Eskridge recommended higher education be used only as one of several screening measures. Further, Truxillo, Bennett and Collins (1998) found inconsistent relationships between high educational achievements and disciplinary action and concluded higher education benefits should not be assumed to predict performance in all areas. Specifically relating to use of force, Sherman and Blumberg (1981) were unable to identify significant differences between college education and use of force. Other researchers have continued to highlight issues with previous studies on education in law enforcement citing concerns over small sample sizes or methodological issues. Consequently, the debate and examination of the effects of higher education on law enforcement is alive and well nearly a century after the concept was first introduced.

Employment Screening

Education is not the only method of evaluating police officers. For many years departments have been employing a wide variety of pre-employment screening techniques in an attempt to identify officers who will not meet performance standards. In fact, the use of these techniques has increased in recent years (Cochrane, Tett & Vandercreek, 2003) and often includes; background investigations, credit history examinations, personality tests, intelligence tests, polygraph examinations, and medical exams. Unfortunately, many of these screenings have not been empirically studied.

One of the most popular methods, which also have received the most empirical examination, is conducting a personality or psychological test such as: the California Psychological Inventory, Minnesota Multiphasic Personality Inventory, or Inwald Personality Inventory. Each of these tests is used to identify personality traits that may lead to poor job performance such as aggressiveness, dishonesty, impulsivity and other negative behaviors. The effectiveness of psychological tests have been extensively studied and findings generally indicate they can be a valid tool for assessing future police performance (Tarescavage, Fischler, Cappo, Hill, Corey, & Ben-Porath, 2015; Lowmaster, 2010; Varela, Boccaccini, Scogin, Stump & Caputo, 2004; Arrigo & Claussen, 2003). For example, Koepfler, Brewster, Stoloff and Saville (2012) found that specific personality traits such as aggression and behavior control could predict police aggressive behavior.

While psychological screenings are an often used tool a myriad of other screening techniques (e.g.: background investigations, credit history examinations) remain in use at many agencies. While almost no empirical research has been conducted on these tests they are important since as a single psychological screening may not identify all the traits which are important for a successful police officer. For instance, Daniel (2001) contends in his research that an increase in multiple screening methods is appropriate when identifying better candidates. Further, as police departments evolve the types of methods of employment screening should do the same (Pynes, 2001; Ostrov, 1986). Unfortunately, there is limited research to identify which pre-employment screening techniques are effective.

Training

Training is an important and vital aspect of policing and the required hours of police training have been increasing steadily. There are three general forms of police training in the United States; basic training, field training, and in-service training (Morrison, 2006). Basic training is widely required for newly hired officers and consists of training in the basic skills necessary to preform law enforcement tasks. Training usually includes firearms skills, self-defense, use of non-lethal weapons and criminal law. While topics, format and hours

required vary from state to state the average number of classroom hours required for basic training in 2007 was 761 (Reaves, 2012). In many circumstances after completing basic training officers are then required to successfully complete field training. Field training consists of assigning new officers to senior officers for additional on the job training. This training allows a new officer to gain important insight and experience in the application of knowledge learned in basic training. According to a 2007 report the average number of hours of field training was 426 (LEMAS, 2007). Finally, a few states require continued in-service training for officers to maintain certification. Of those agencies that require annual in-service training the average number of hours of required is 38 (LEMAS, 2007). It is important to note that despite the importance placed on training the rate, type, and format varies drastically across the United States (Langworthy, Hughes & Sanders, 1995).

Examinations of use of force incidents and the amount and type of training in police work have received limited empirical examination. Moreover, the research which has been completed has mixed results of the effect that police training has on use of force incidents. For example, Lee and Vaughn (2010) found more highly trained officers are able to control and resolve conflict with less force than their lesser trained peers. However, Lee, Jang, Yun, Lim and Tushaus (2010) found in-service training was a significant factor when examining levels of police force but basic training had a smaller affect. Unfortunately, the understudied relationships between basic training, in-service, and use of force have not been adequately studied to draw firm conclusions on its effects.

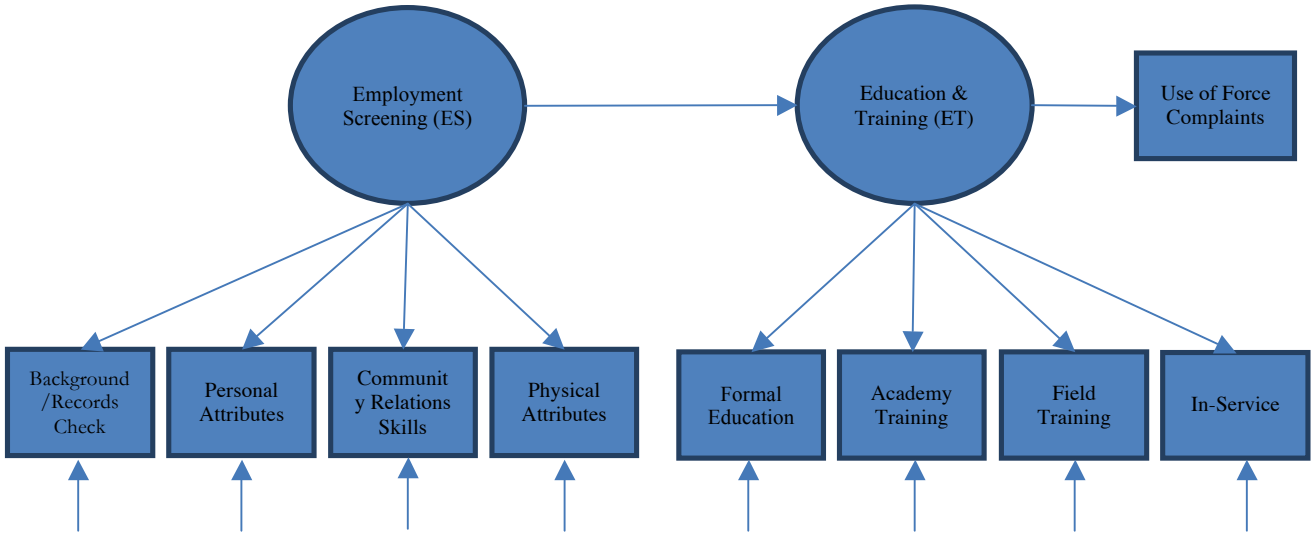


Figure 1. Structural Equation Model

The Present Study

As is evident by the literature on the subject of police performance and other variables in relation to hiring practices, training, and education there is a lack of empirical research in many areas and a lack of consensus in others. A great deal more research is needed to fully understand the complex relationship between employment screening, education, training, and use of force. The present study attempts to bridge the gaps in existing literature by examining national data to determine if rigorous pre-employment screening standards combined with increased formal educational requirements and an increase in the extent of training after employment correlate with a reduction of departmental use of force complaints (see Figure 1). To achieve this confirmatory factor analysis and structural equation modeling is utilized.

Method

Procedure and Sample

The data for the present study come from a 2007 survey conducted as part of the Law Enforcement Management and Administrative Statistics (LEMAS) program. Data includes responses from 3,095 state and local law enforcement agencies across the United States with a complete sample of n=2,670. The survey covers a wide variety of administrative, management practices, and other topics providing a rich source of national statistical data on police operations.

Measures

For this study, two latent endogenous variables (employment screening, and education & training) were examined to determine the effect they have on use of force complaints. All variables were identified based on data available within the LAMAS survey; such as the number of formal citizen complaints regarding use of force for each agency, hours spent in training, and hiring practices.

The first latent variable, employment screening (ES), is composed of 18 dichotomous variables identifying individual techniques agencies use to screen potential applicants prior to employment. The dichotomous variables are grouped into one of four observable variables as follows:

1. *Background/Records Check* (background investigation, credit history check, criminal history check, driving record check)

2. *Personal Attributes* (in-person interview, personality inventory, polygraph exam, psychological evaluation, voice stress analyzer, written aptitude test)

3. *Community Relations Skills* (analytical/problem solving ability assessment, assessment of understanding of diverse cultural populations, mediation/conflict management skills, second language test, volunteer/community service history check)

4. *Physical Attributes* (drug test, medical exam, physical agility/fitness test)

Each observable variable is the result of a re-coded dichotomous variable summed together to produce ordinal data. These results are then re-coded into ratio data for a score of 0-6, with 0 indicating the agency does not employ any of these methods to a 6 (in the case of personal attributes), which indicates an agency employees all of the possible methods. This process ensures internal consistency while examining the data.

The second latent variable, education and training (ET), were developed slightly different. Only one variable in this section of the data is dichotomous: formal education. This variable was re-coded and summed together to indicate the educational level required by each agency. Whereby, each department received a ratio score of 0 to 4, with 0 indicating no educational requirements, 1 indicates a high school diploma, 2 indicates some college but no degree required, 3 indicates a required two-year or associates degree, and 4 indicating a bachelor's degree is required for employment. The remaining data (academy training, field training, and in-service training) is expressed by the original survey in hours. Thus, that data will remain intact as presented in the LEMAS study.

The final measure in the present study is use of force. The data were collected in the LAMS survey by counting the current dispositions for all formal citizen complaints received regarding use of force. Respondent agencies were asked for information on sustained, pending, and other status use of force complaints. The present study took the sum of all this data for a total use of force complaints received for each agency.

Analysis Plan

The purpose of the present study is to examine the effect pre-employment screening techniques (ES) have in relation to college educational requirements and on the job training (ET) with the number of use of force complaints an agency receives. The analysis plan for this study takes place in a series of steps. The first step is a presentation of the descriptive statistics for the measures. This includes the mean, standard deviation, skewness, and kurtosis to determine the normality of these data. The second step is a presentation of the bivariate correlations to determine the degree of variance the measures share. The third

step is a presentation of the Confirmatory Factor Analysis (CFA) via Structural Equation Modeling (SEM). CFA allows for a hypothesized structure among the measures to be tested. The final step is a presentation of the results from simulations models in order to ensure proper levels of statistical power without biased estimates.

Results

Step 1

The first step is a presentation of the descriptive statistics. Table 1 indicates normality for the first five variables (background check, personal attributes, community relations skills, and physical attributes). These measures do not appear to be overly skewed or kurtotic, indicating they have a relatively normal distribution. The remaining measures (academy training, field training, in-service training, and use of force) initially appear abnormally skewed and kurtotic. However, it should be noted that these measures are comparing actual hours spent in training at the agency surveyed as well as the actual number of citizen complaints. Thus, the high level of Kurtosis and Skewness indicates the extreme deviations within the data; which is expected and normal due the great variations in departmental size (Reaves, 2010) and the extreme variations in level of training required across the country (Langworthy, Hughes, & Sanders, 1995; Randy, 1987).

Table 1. Descriptive Statistics.

Measures	M	SD	Skewness	Kurtosis
Background/Records Check	3.69	0.49	-1.60	3.83
Personal Attributes	3.47	1.28	-0.40	-0.68
Community Relations Skills	0.95	1.27	1.19	0.33
Physical Attributes	2.54	0.70	-1.65	2.58
Education (formal)	1.29	0.70	2.00	3.25
Academy Training	665.18	263.37	1.56	17.09
Field Training	426.85	359.09	4.717	63.75
In-Service Training	38.11	53.28	10.82	151.26
Use of Force Complaints	11.57	154.10	46.17	2279.74

Step 2

Table 2 presents the bivariate correlations for these measures. Initially issues arise that must be addressed. It is apparent that In-Service Training has extremely weak or no association with all but one measure (academy training). This may be due, in part, to the ambiguity or confusion this question may initially present when the respondent attempt to parse the differences between in-service training and field training. Therefore, in-service

training will not be considered in the following steps so that a clearer understanding of the variation and relationship with other measures emerges. Further, the use of force measure has several variables with weak significance at this step. However, the low correlation will be corrected in steps 3 and 4 when the observed measure (use of force) is compared against combined measured variables to produce and test the latent measures, employment screening and education/training.

Table 2. Bivariate Correlations.

Measures	1	2	3	4	5	6	7	8	9
1. Background/Records Check	1.00								
2. Personal Attributes	0.42*	1.00							
3. Community Relations Skills	0.15*	0.28*	1.00						
4. Physical Attributes	0.34*	0.46*	0.17*	1.00					
5. Education (formal)	0.13*	0.10*	0.14*	0.10*	1.00				
6. Academy Training	0.19*	0.23*	0.09*	0.17*	-0.05*	1.00			
7. Field Training	0.23*	0.33*	0.14*	0.22*	0.10*	0.18*	1.00		
8. In-Service Training	0.02	0.02	0.00	0.00	0.00	-0.00	0.06*	1.00	
9. Use of Force Complaints	0.03	0.05*	0.05*	0.03	0.02	0.06*	0.02	-0.00	1.00
*=p .05									

Step 3

Table 3 presents the confirmatory factor analysis via structural equation modeling. The first part of this analysis is the model fit. The chi-square is statistically significant, which is appropriate given large sample size (Kline, 2004), and therefore, other fit statistics should be consulted. The CFI is 0.96, RMSEA is 0.04, and SRMR is 0.02. These fit statistics indicate the model fits the data well. The factor loadings are adequate for several measures (background/records check, personal attributes, physical attributes and field training) however, several other measures (community relations skills, education and academy training); have factor loadings under the recommended .05 level. Community relation skills have a low factor loading of 0.34 and may be a reflection of a set of infrequent employment screening tests, as very few of the agencies tested these skills. Academy training also has a low factor loading of 0.34. This is consistent with previous research findings by Alpert, Dunham and Stroshine (2006) that indicated academy training tends to be skill and knowledge oriented while field training leads to the application of skills and knowledge. In other words, it is the application of skills and knowledge which is the area use of force

occurs. Finally, college education also has a low factor loading of 0.17. This is not surprising given the varying research which has been conducted identifying both strong and weak correlations between college-educated officers and job performance (see Aamodt, 2004). Despite the low factor loading, this measure is kept due to the theoretical sense that it makes. Over all the strong model fit and moderate factor loading indicates that the measures fit the data.

Table 3. Confirmatory Factor Analysis

Measures	Factor Loading
Employment Screening:	
1. Background/Records Check	0.55*
2. Personal Attributes	0.78*
3. Community Relations Skills	0.34*
4. Physical Attributes	0.59*
Education & Training:	
5. Education (formal)	0.17*
6. Academy Training	0.34*
7. Field Training	0.49*
Chi-square = 115.21	
CFI = 0.96	
RMSEA = 0.04	
SRMR = 0.02	
Note. CFI = comparative fit index; RMSEA = root mean error of approximation; SRMR = standardized root mean of the residual.	

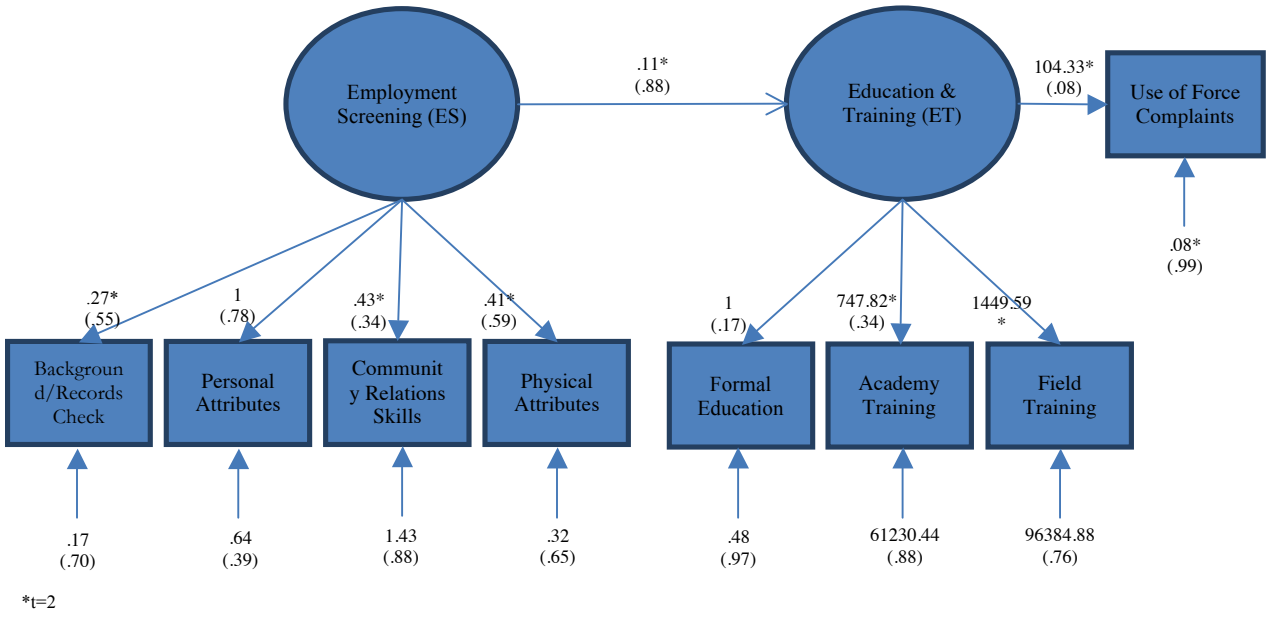
Step 4

The fourth step is the development of a simulation model to better understand the results. Figure 2 shows the path analysis with the standardized and unstandardized results between the latent variables (ET & ES) and use of force. The regression between personal attributes to employment screening, and formal education to education and training have been set to 1. Results indicate a significant Chi-Square (115.21), significant RMSEA (0.044), significant SRMR (0.02), and significant CFI (0.96).

Of the variables examined, personal attributes (in-person interview, personality inventory, polygraph exam, psychological evaluation, etc.) and field training hours indicated the strongest relationship with the latent variables at 0.78 and 0.49 respectively. Standardized results indicate that pre-employment screening has a significant and strong relationship with education/training (0.88) and a significant but weaker relationship with the rate of use of force complaints (0.08). Therefore, the structural equation model may be interpreted thus; agencies with higher employment screening standards, higher levels of

required education, and increased training hours are correlated with a reduction in use of force complaints.

Figure 2. Structural Equation Model



Conclusion

This study does have limitations. First, the use of force data only contains formal complaints by citizens as complied by each agency; thus, agencies may not keep accurate statistical information on complaints or may handle a large portion of complaints informally. Moreover, this study does not differentiate if the complaint was founded or unfounded. Second, the present study does not take into consideration the varying demographics of the agencies and communities they police. Finally, the data does not provide details on the length of time the agency has been utilizing the employment screening techniques or the history of education and training hours required. For example, agencies may only have recently implemented formal education requirements and thus only the most recently hired officers hold a degree. Unfortunately, more detailed data does not exist on a national scale. Despite these limitations, the present study provides a rare view of departmental hiring standards and use of force complaints on a national level.

The purpose of the present study is to examine nationwide law enforcement data to discover if rigorous pre-employment screening standards combined with advanced training and formal educational requirements correlate with a reduction of departmental use of force complaints. This study clearly adds to the literature, which supports a long believed premise, that these efforts do affect the use of force rates at an agency.

The present study supports previous research findings indicating college-educated police are less likely to fire their weapons (Fyfe, 1988), more likely to use 'reasonable force' (Worden, 1996), maintain better communication skills with the community (Carter et al., 1989) and are less likely to receive citizens' complaints (Cascio, 1977). However, in the present study, the relationship between higher education and use of force complaints is weaker than other measures. Specifically, increased field training and pre-employment tests for personal attributes (e.g.: personality inventory, polygraph exam, psychological evaluation) reveal a strong association with the reduction of force complaints. Both of these are an under researched area which should be examined in future research. The findings are significant given the trends in tortious attitudes toward law enforcement and the significant public image and trust challenges that confront law enforcement.

Caution should be had, however, in assuming that any one variable or group of variables is the causal factor in reduced use of force complaints. Rather, the present study indicates that agencies that require higher levels of college education also tend to have higher pre-employment screening standards and greater training opportunities; these factors correlate with a reduction in use of force. Moreover, the latent variables, employment screening and education/training combined affect use of force complaints. Therefore, departments should consider requiring higher levels of education while employing stringent employment screening standards and providing increased opportunities for initial and continued training once hired. This mix of increased standards in training, education, and employment screening correlates with agencies who receive less use of force complaints.

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