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Organizational Decline and Fiscal Distress in Municipal Police Agencies

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Abstract

In late 2007, the United States entered one of the most significant recessions in recent memory. While the consequences to individuals have been well-documented, less attention has been paid to the effects on state-sponsored organizations such as police agencies. The current study examines fiscal distress (e.g., layoffs, hiring freezes) in a sample of large municipal law enforcement agencies. According to a framework proposed by Levine (1978), departments should be most vulnerable to fiscal distress when the jurisdiction experiences economic shocks (environmental entropy), the demand for police services declines (problem depletion), the political system becomes less supportive of police agencies (political vulnerability), and the organization becomes more structurally complex (organizational atrophy). Structural equation modeling results suggest that fiscal distress is driven by the local economic context, changing crime rates, and organizational size. This research has implications for helping organizations address future economic declines.

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The general health of the United States economy ebbs and flows over time. According to the National Bureau of Economic Research, the U.S. suffered through 33 separate recessions between 1857 and 2010 (2012). The cyclical nature of the economy suggests that economic distress for individuals and organizations is inevitable, with contraction occurring approximately every 17 years and, in recent decades, even more frequently. The recent recession, the most substantial economic decline since the Great Depression, began in December 2007 and officially lasted 18 months. Effects typically extend beyond the official period identified by economists as characterizing the recession. By late 2009, unemployment rates soared above 10 percent, more than twice the level from only a decade earlier, and would remain above 8 percent until 2012 (Bureau of Labor Statistics, n.d.). Not only did millions of Americans lose their jobs, they lost their homes and retirement savings as well. Similarly, many businesses were forced to either scale back or cease operations entirely.

The effects of the Great Recession also permeated the public sector. Cities and towns struggled to maintain funding for municipal services as property and sales tax revenues declined due to diminished home prices and decreased spending, respectively, and federal grant support dried up because of national austerity measures (Parlow, 2012). The Brookings Institution estimated a loss of nearly 600,000 government jobs between 2009 and 2011, including teachers, first responders, air-traffic controllers, and other workers (Greenstone & Looney, 2012). Police departments were not immune from the turbulent economic environment. One estimate placed the number of law enforcement jobs lost at 10,000 positions (Office of Community Oriented Policing Services, 2011). Some local agencies were, quite simply, decimated by layoffs and furloughs. The Newark, New Jersey Police Department, for example, faced a nearly $17 million

shortfall in 2010, necessitating the layoffs of 167 of the city's sworn officers (Queally & Friedman, 2010). In Camden, New Jersey, layoffs cut the city's department from 367 to 204 in 2010; the department would disband entirely several years later in place of a county force (Goldstein, 2011). Other agencies cut overtime spending or curtailed salary increases for agency personnel (Police Executive Research Forum, 2010). Nearly half of all agencies in a Police Executive Research Forum survey indicated that "services in their community have declined or will decline due to budget cuts" (p. 2).

Based on these accounts, the recession thrusted certain law enforcement agencies into a period of organizational decline marked by declining budgets, resource scarcity, cutbacks, and financial constraints (Cameron, Kim, & Whetten, 1987; Cameron, Whetten, & Kim, 1987; Guy, 1989).   For some department leaders, workforce reductions are likely to be viewed as temporary challenges dictated by extraordinary economic circumstances (Weitzel & Jonsson, 1989). For others, the turbulent economic environment may have produced long-term organizational resource declines and a belief that funding levels will never return to pre-recession levels (Druker & Robinson, 1994). Indeed, the downturn led the Office of Community Oriented Policing Services (2011) to conclude, "Rather than continuing to provide services through traditional means in hope that the economy will return to pre-recession levels, police nationwide are shifting, adapting, and redeveloping the ways in which they do their job—to ensure the highest levels of public safety" (p. 34).

It is clear the recession adversely affected *some* police agencies, but not *all* agencies felt the pains of the poor economy equally. What factors account for organizational decline within municipal police agencies? Levine (1978, 1979) argued that a combination of organizational and environmental characteristics contributes to fiscal problems: environmental entropy, problem

depletion, political vulnerability, and organizational atrophy. Specifically, Levine suggested that organizations are most susceptible to decline due to economic shocks, a declining need for the agency's services, lack of political and community support, and organizational structures that hinder adaptation and innovation.

The current research examines organizational decline among police agencies. Some avoided deep fiscal strains, thereby escaping the detrimental outcomes often associated with decline such as innovation, employee morale, and turnover problems. To date, researchers have tended to focus only on the outcomes of recessions for police agencies and the specific cutback strategies used to deal with budgetary problems. They have not attempted to explain the causes of the decline in the first place using economic, environmental context, and organizational variables. Drawing upon Levine's (1978) framework, we argue that less complex agencies with a well-defined community need, strong political/community support, and a stable economic environment should be able to avoid organizational decline better than other agencies.

LITERATURE REVIEW

Organizational Decline

Municipal government entities are often taken for granted, viewed as impervious to outside shocks (Adam et al., 2007; Lewis, 2002). It is not until threats to their existence emerge that we acknowledge their vulnerability. For some scholars, these periods of crises and declines are part of an overall life cycle view of organizations, a framework which emphasizes various events and turning points that alter organizational trajectories (see, for example, Cameron & Whetten, 1983; Kimberly, 1980; Quinn & Cameron, 1983; van de Ven & Poole, 1995). This research focused attention on a variety of points within an organization's history, most notably

its creation and its death or disbanding (King, 2009). Although most large police organizations in the U.S. were formed in the late 1800s or early 1900s, they may differ in their structures and activities due to imprinting caused by the specific time period of their founding (King, 2009). For instance, pre-1900s departments (political era organizations) were less likely to employ civilians than younger (reform era) departments (King, 1999). Life cycle research has also identified factors associated with police department disbanding, including lack of funding, internal crises, and small size (Kiedrowski, Jones, & Ruddell, 2017; King, 2014).

Just as important as organizational creation and death is organizational decline, periods that may alternate with growth and stagnation or represent the beginnings of a more permanent descent toward failure and disbanding. The conceptual definition of decline is murky, including everything from decreasing organizational size (e.g., number of employees) to declining financial resources (e.g., budgets, profits) to diminished views of the organization (e.g., prestige, reputation) (Cameron, Kim, & Whetten, 1987; Guy, 1989; King, 2009; Weitzel & Jonsson, 1989). Regardless of the specific indicator, there is a consensus about its dysfunction. It has been associated with organizational conflict, lack of innovation, negative structural changes, diminished employee participation, and declining morale (Cameron, Kim, & Whetten, 1987; King, 2009; Levine, 1978).

In his classic work in the field, Levine (1978) adopted what has become a commonplace definition of organizational decline—a decrease in an organization's financial resources (see also Cameron, Kim, & Whetten, 1987; Whetten, 1987). Organizations which do not have the resources necessary to perform their basic roles are potentially faced with organizational decline. It is these organizations which fail to adapt that are in danger of permanent demise. While economic downturns can account for organizational decline, many organizations do not struggle

during adverse economic cycles. Similarly, many organizations struggle even in periods of external economic stability. To understand the path toward organizational decline, Levine (1978) presented a typology which accounts for the locus (internal/external) and the nature (political/economic) of the decline.

Environmental Entropy

According to Levine (1978), environmental entropy represents an external economic cause of organizational decline where "the capacity of the environment to support the public organization at prevailing levels of activity erodes" (p. 318). He writes broadly of the detrimental effects of local population declines, supply costs and scarcity (detrimental to manufacturers), and overall market conditions. Environmental entropy could occur due to crises, such as local plant closings or economic recessions (see Brunet, 2015). During periods of economic decline, unemployment rates are likely to rise and tax revenues fall. This reduces the resources that the government can spend on public organizations, such as police agencies. For many agencies, this necessitates decline and restructuring, but for some agencies, it could signal the end.

Variations in organizational decline within police agencies during the Great Recession may be explained by the localized nature of the recession's effects. The Great Recession disproportionately affected certain parts of the country and, consequently, individuals, businesses, and government agencies within these areas. For instance, poverty rates increased most dramatically during the recession in certain cities in Florida and California (Kneebone, 2010); other cities (e.g., Washington, D.C.) were somewhat insulated from its effects. Location may provide some measure of protection from broader economic forces.

Problem Depletion

Problem depletion, an external political cause of decline, represents a scenario where the demand for a public organization's service deteriorates (Levine, 1978). Although the supply of crime is generally constant, if crimes rates were to diminish to the point where formal social control was no longer necessary from a police agency, then the health of the agency could decline or even cease to exist. There is some evidence linking crime rates to police organizational size (see Maguire, 2001 for a review), but the few studies of organizational decline in policing point to the limited relevance of crime. In fact, King (2014) and Brunet (2015) found that many of the disbanded agencies in their Ohio and North Carolina samples, respectively, failed to report crime data to the FBI's Uniform Crime Reporting program. Without any internal records, these agencies likely failed for reasons other than problem depletion. Where crime data were available, they varied widely, leading the authors to conclude that they played little role in the agency termination process. That said, crime did significantly affect at least two jurisdictions' decisions to disband. According to Brunet (2015), "one chief convinced the town council to do away with the department as there was little crime at the time [and] at least one interviewee noted that rising crime levels convinced tow leaders of the need to shift policing responsibilities to the better equipped and trained sheriff's office" (p. 331).

Political Vulnerability

Levine (1978) identified political vulnerability as an internal risk factor that made organizations susceptible to budget changes and demands from external providers. For instance, younger organizations are more likely to struggle, a phenomenon known as the liability of newness (Brunet, 2015; Singh, Tucker, & House, 1986). Smaller organizations are also

particularly vulnerable. As King (2014) noted, "It is relatively easy for sovereigns [e.g., local governments] to penetrate the skin of small police agencies because there is little to buffer the organization from external intrusion" (p. 686). Among the 19 disbanded North Carolina departments in Brunet's (2015) sample, all had 10 or fewer officers. Organizations also risk decline if they are heavily reliant upon single external resource providers; diversifying resource flows provides some buffer against external control (Pfeffer & Salancik, 1978).

A city's government form may also increase the likelihood of organizational decline. Elected mayors are more likely to respond to constituent demands, including demands for crime control services, leaving police departments vulnerable to external pressures (Stucky, 2003, 2005; Wilson & Boland, 1978). The city manager-council form of government is envisioned as superior to the mayor-council form, removing the political (re-election) motive from budgetary decisions. Levine, Rubin, and Wolohojian (1981) suggested that the city manager-council form allows for "centralized control over budget and personnel" in the hands of a professional decision-maker (p. 620). Consequently, they predicted that city managers are better positioned to manage government agencies in times of fiscal uncertainty, thereby averting organizational decline. Morabito (2008) also found that the centralized decision-making power of a city manager facilitates innovation; a mayor must contend with the dissent and conflict arising from a more diffused set of constituents. She found that police agencies operating in city manager-council jurisdictions were more likely to adopt community policing. These benefits notwithstanding, other researchers have noted the benefits of a mayor form of government. Stucky (2005), for instance, found that traditional governments (e.g., mayor-councils, partisan elections, and district-based elections) employed more police officers than reformed governments (e.g., city managers, non-partisan elections, and at-large elections). This is

predicated on the belief that elected politicians must remain responsive to constituents and are

less likely to allow police organizations to decline in size against public demands. Others predict

that city managers are cost conscious and, all else being equal, would restrict public agency

expenditures. Yet, empirical research more commonly shows no effect of government form on

expenditures (see, for example, MacDonald, 2008). As such, the precise relationship between

government form and organizational decline, if any, is still unclear.

Community support is related to organizational decline for many of the same reasons as

government form. If mayors feed organizations by responding to constituents, organizations can

resist decline and attempts to disband the agency by maintaining a coalition of community

support (Kaufman, 1976). The community becomes a lobbying voice for growth or maintenance

of organizational resources and functioning.

Another way to foster community support and make police agencies more politically

stable is by employing community-oriented policing strategies. Community-oriented policing

became popular in the 1990s and reflected a move toward policing that incorporate citizen input,

a broad policing function, personalized service, geographic focus, positive interactions, and

partnerships within the community (see Cordner, 2015). Police agencies that employ this style

of policing may be more likely to receive community support, thus making them less vulnerable

to decline. According to a systematic review of the community policing literature, 78.3 percent

of the studies reviewed found that community-oriented policing strategies have a beneficial

effect on citizen satisfaction, and 60 percent found beneficial effects for police legitimacy (see

Gill et al., 2014).

Organizational Atrophy

Levine (1978) identified organizational atrophy as a fourth cause of organizational

decline (internal and technical). Organizational atrophy could occur with a large number of

retirements, and the agency lacking the staff available to effectively police the community.

Moreover, agencies with high levels of corruption or police misconduct could also face decline,

particularly if such misconduct was met with public resistance (see King, 2014). Similarly, poor

performance can also be linked to decline, as both unsatisfactory performance and misconduct

are often linked to legitimacy concerns. In addition to these factors, the organizational structure

of police agencies could contribute to decline (see Langworthy, 1986; Maguire, 2003). In

particular, agencies that are too complex (e.g., too much differentiation) and taking on too many

roles (e.g., task scope is too large) could face decline. Although the organizational literature

suggests that some organizational characteristics (e.g., specialization through the presence of

experts) may facilitate innovation, others are impediments (e.g., formalization removing

discretion and innovation) (see Damanpour, 1991). In periods of distress or when operating in

dynamic environments, mechanistic or bureaucratic organizations may be slow to change and

suffer accordingly (see Burns & Stalker, 1961). Moreover, complex organizations that use

resources more effectively tend to have fewer slack resources, and cutbacks hit these

organizations particularly hard (see Levine, 1979; Scorsone & Plerhoples, 2010).

Cutback Management

When faced with decline, public service organizations (e.g., police agencies) face tough

decisions. It is inevitable that when resources become scarce, organizations must adapt to these

conditions, whether they are temporary or permanent. This process of "managing organizational

change toward lower levels of resource consumption and organization activity" is defined as cutback management (Levine, 1979, p. 180). According to Greenhalgh, Lawrence, and Sutton (1988), these strategies lie along a continuum related to the protection of employee well-being. For example, hiring freezes preclude the replacement of department employees or the employment of new workers, but the financial well-being of existing workers is maintained. Overtime and salary reductions more deeply affect existing employees, first by restricting opportunities for extra pay and then by reducing base compensation. Furloughs and layoffs differ only in their permanence. The point is that organizations tend to respond to decline through "a reduction of personnel, output, equipment, or services" (Weitzel & Jonsson, 1989, p. 95).

Current Study

In this article, we use Levine's typology to examine whether environmental and organizational characteristics of police agencies contribute to organizational decline. Few prior empirical studies have addressed this question. To be sure, we know that some police organizations suffered during the Great Recession, experiencing furloughs, layoffs, reductions in training, discontinued units, and other cutbacks (Office of Community Oriented Policing Services, 2011). Unclear is whether the recession alone was responsible for this organizational decline and whether local economic conditions affected agencies differently. This study is important because it has implications regarding how police agencies can perform their goals efficiently, even in the face of harsh economic circumstances, declining need, political and community pressures, and internal challenges. We now turn to a discussion of the data and measures used to answer our research question.

METHODOLOGY

Sample

To examine Levine's hypotheses, we merged together data from multiple archival and

official sources. We used the 2013 wave of the Law Enforcement Management and

Administrative Statistics Survey (LEMAS) as the study's sampling frame (Bureau of Justice

Statistics, 2015). The Bureau of Justice Statistics has administered the LEMAS survey to a

sample of law enforcement agencies at irregular intervals of one to six years since 1987.

Although the composition of the LEMAS sample varies across waves—for instance, special

purpose agencies were included in 1997 but omitted in 2003—municipal, sheriff, and state police

agencies with 100 or more full-time sworn officers are included each year (Groves & Cork,

2009). The remainder of the LEMAS sample is composed of a selection of smaller (<100 FT

sworn officers) agencies. Given the wealth of organizational data (e.g., personnel, organizational

structures, equipment) collected via the LEMAS survey from a large sample (over 2,500) of

agencies with response rates exceeding 90 percent, the archived LEMAS datasets have proven to

be valuable tools for police researchers (Groves & Cork, 2009; Langworthy, 2002; Matusiak,

Campbell, & King, 2014). In fact, a recent study identified LEMAS as the second most used

dataset produced by the Bureau of Justice Statistics, trailing only the National Crime

Victimization Survey (Matusiak, Campbell, & King, 2014).

Data Sources

The 2013 LEMAS administration was the first administration since the Great Recession

and the first wave to ask about organizational responses to fiscal crises. The 2,826 state, county,

and local agencies within the dataset were filtered to include only municipal agencies employing

100 or more full-time officers (*n*=509). Data considerations forced us to restrict the sample to only larger local agencies. Several hypothesized predictors of fiscal distress were only available for metropolitan areas (e.g., gross domestic product) and/or municipal governments (e.g., government form), necessitating the exclusion of state, county, and sheriff's departments. Additionally, sheriff departments are politically, economically, and functionally distinct from most municipal agencies, further justifying the restricted sample. We also omitted smaller agencies (<100 FT sworn officers). The 2013 LEMAS survey was merged with the earlier 2007 wave to establish the time ordering of variable relationships. Since the Bureau of Justice Statistics samples all large law enforcement agencies during each administration, over 90 percent (*n*=465) of 2013 large agencies also participated in 2007. The sample of overlapping agencies with fewer than 100 full-time sworn officers was considerably smaller and unrepresentative of the population of smaller agencies. Thus, the present study sample included 465 large (100 or more FT sworn officers) municipal agencies responding to both the 2007 and 2013 waves of the LEMAS survey.

In addition to the LEMAS surveys from 2007 and 2013, we utilize data from multiple sources to examine environmental indicators of fiscal distress. These data come from the Bureau of Economic Analysis, the American Community Survey (2007 & 2011), the Bureau of Labor Statistics (2011), the Uniform Crime Reports (2007 & 2011), and the Municipal Year Book (2010). The measures extracted from these data sets are discussed in greater detail throughout the methodology section.

Dependent Variables

Fiscal distress, a latent construct, served as the study's dependent variable. The LEMAS survey addressed departmental fiscal challenges, including cutback management strategies, for the first time during the 2013 administration. LEMAS respondents reported the presence of salary reductions, furloughs, hiring freezes, and layoffs in agencies during the period January 1, 2010 and December 31, 2012 (exception was for layoffs, which referenced 2012 only). These cutback management strategies served as a proxy for organizational decline given the empirically established connection between decline and cutback management strategies (see, for instance, Levine, 1978). We employ the label "fiscal distress" instead of organizational decline to signify a deeper level of decline; organizations are not just facing budget reductions, but are forced to make significant adjustments to staffing. For study purposes, we make no distinction between strategies affecting only sworn or only non-sworn employees[1] nor do we examine the depth or magnitude of the fiscal distress (e.g., the percent reduction in salaries). The four indicators capture the existence of fiscal distress only.[2]

Independent Variables

As noted earlier, Levine (1978) identified four broad determinants of public organizational decline (environmental entropy, problem depletion, political vulnerability, and organizational atrophy). We constructed the independent variables included in the models below with these broad categories in mind. Since economic recessions affect cities quite differently, we employed Levine's argument and hypothesize that police agency fiscal distress will be greatest in jurisdictions characterized by weak economies or, in Levine's words, a form of *environmental entropy*. In these areas, local governments face more constraints in fully supporting public

organizations. *Environmental entropy* was measured as a latent, unobserved construct. We selected three indicators based on their ability to reflect the underlying construct; in other words, variation in the *environmental entropy* construct, along with measurement error, is believed to produce variation within each of the observed indicators (Edwards & Bagozzi, 2000). The first indicator, gross domestic product (GDP), is a widely used measure of economic activity at the national and subnational levels. The U.S. Department of Commerce, Bureau of Economic Analysis (BEA) collects and reports GDP data for U.S. metropolitan areas (Bureau of Economic Analysis, n.d.). For each MSA, we computed the percent change in the gross domestic product between 2007 and 2011 and subsequently attached each police agency in the LEMAS sample to its respective MSA, providing an indication of growth, stagnation, or decline in regional (i.e., metropolitan) economic activity. The second observed economic indicator captured the percent change in county-level median home values between 2007 and 2011. Change scores were computed using data from the U.S. Census Bureau's (n.d.) American Community Survey. Plummeting housing prices characterized the Great Recession and produced deleterious effects on individuals (e.g., personal bankruptcies; homelessness) and communities (e.g., declining housing values) (Ellen & Dastrup, 2012). A healthier economy is generally indicated by rising home prices or, at the very least, greater stability in housing markets. Finally, the U.S. Department of Agriculture's Economic Research Service (based on Bureau of Labor Statistics data) provided 2011 county-level employment rates.[3] Employment rather than unemployment rates were used for consistency in the direction of all three observed indicators; positive values suggest a stronger local economy (greater GDP growth, growing home prices, and more workers employed).

Levine also argued that organizations become more susceptible to cutbacks when the very problems they are created to address—their raison d'être—subside. In the case of police organizations, declining crime rates may signal *problem depletion*, reducing the urgency to sustain existing staffing levels. We measured this *problem depletion* by collecting Federal Bureau of Investigation Uniform Crime Reporting data for both 2007 and 2011 (Federal Bureau of Investigation, 2009, 2013) and computing the percent change in crime rates for each agency. Only Part I crimes were included in the rate computation (murder, rape, robbery, aggravated assault, burglary, larceny, and auto theft).

Political vulnerability was measured by four variables capturing an agency's exposure to potential government, resource provider, and community pressures. The first measure captures the size of the department in terms of full-time sworn personnel in 2007. Due to the significant positive skew in the dataset, the *organizational size* variable was log transformed in all models discussed in the analysis section. Second, g*overnment form* indicated the legislative and administrative structure for each city—council-manager, mayor-council, or other forms. There is some belief that the council-manager form of government represents a more professional model, where a city manager rather than a politicized mayor exerts business-like control over the everyday operations of the community, including its finances (see, for example, Levine, Rubin, & Wolohojian, 1981). If true, we would expect these professional governments to help police departments avoid agency-level fiscal distress. Data on government forms were collected from the *Municipal Year Book, 2010*, a publication of the International City/County Management Association (2010). The Association classifies each city with at least 2,500 residents according to its form of government: council-manager, commission, mayor-council, representative town meeting, or town meeting. For the purposes of the current study, government form was

dichotomized into 1=council-manager (the hypothesized professional form) or 0=other form.

Third, *funding variety* measures the diversity of sources from which police departments receive

operational funding. The variable was constructed by summing seven indicators from the 2013

LEMAS dataset—one or more municipal governments, one or more county governments, one or

more state government agencies, one or more federal government agencies, payment for

contracted law enforcement services, asset forfeiture programs, and user fees (Cronbach's $\alpha=$

0.700). Presumably agencies receiving funding through multiple sources are better positioned to

absorb shocks from any singular funding source. Fourth, a measure of *community policing* was

included in the models below based on the belief that departments practicing strategies

consisting with the philosophy may foster local community support. Consequently, agencies

may draw upon this political capital as a buffer in times of need, such as during threatened

cutbacks. The *community policing* variable was an index, constructed by summing nine

dichotomous items from the 2007 LEMAS survey—agency maintained a mission statement with

a community policing component, agency encouraged patrol officers to engage in problem-

solving projects, agency conducted a citizens' police academy, agency maintain a formal

community policing plan, agency gave patrol officers responsibility for specific geographic

beats, agency included collaborative problem-solving projects in officer evaluations, agency

upgraded technology to support analysis of community problems, agency partnered with citizen

groups, and agency conducted or sponsored community surveys (Cronbach's $\alpha=$ 0.690).

Finally, organizational atrophy was measured by two variables. According to Levine's

framework, organizational characteristics may hinder a department's ability to adapt in the face

of financial crises, ultimately leading to cutbacks. This is especially true when organizations

become structurally complex and inflexible. *Horizontal complexity,* measured with 2007

LEMAS data, represents an organization's tendency to divide work into distinct divisions, units, or other occupational sections. Respondents were asked whether 22 different problems and tasks were handled with a full-time special unit, specially assigned personnel, on an as-needed basis, or not at all.[4] Responses were dichotomized into special unit (1) and other (0) and, consistent with prior police organizational research, summed to create a *horizontal complexity* index (Cronbach's α= 0.832) with higher scores indicating greater levels of structural complexity (see Maguire et al., 2003; Randol, 2012). The final variable, *formalization*, is a measure of structural coordination or control (see Maguire, 2003). It reflects the procedural or rule-bound nature of an organization. LEMAS 2007 respondents were asked about the presence of formal written policies in 17 areas (1=agency has written policy/procedure, 0=agency lacks written policy procedure).[5] Responses were summed, creating a *formalization* scale (Cronbach's α= 0.583) with higher scores indicating greater reliance on organizational rules (see Maguire et al., 2003; Randol, 2012).

Tables 1 and 2 display descriptive statistics for all study variables and correlations between independent variables, respectively. Figure 1 depicts the theoretical model as well as hypothesized relationships between constructs.

[Insert Table 1 About Here]

[Insert Table 2 About Here]

Analysis Procedures

Given that our measurement of Levine's model includes both measurement (*fiscal distress* and *environmental entropy* are measured as unobserved latent constructs) and structural

(regression paths) components, it is most appropriately assessed using structural equation

modeling techniques. We follow the two-step modeling approach recommended by Anderson

and Gerbing (1988) and Schumacker and Lomax (2010) wherein the validity of the measurement

portion of the theoretical model is first established (in this case, *fiscal distress* and *environmental*

entropy) using confirmatory factor analysis before proceeding to an analysis of

structural/prediction models. All analyses were performed using Mplus, a powerful structural

software package. The program is particularly useful because it includes a model estimator

(weighed least squares means and variance adjusted, or WLSMV) to handle latent construct

indicators that violate assumptions of continuous normality (Muthén & Muthén, 2010). In the

present study, four dichotomous indicators measure *fiscal distress*, thereby necessitating the

alternative estimator.

The individual parameters within measurement (i.e., factor loadings) and structural

models (i.e., standardized coefficients) provide some indication of the importance of specific

model paths but do not provide any indication of the degree of congruence between the

hypothesized model (see Figure 1) and the data. We rely upon four of the many available

goodness-of-fit statistics developed over time to assess the overall model fit (Byrne, 2012; Gau,

2010; Hu & Bentler, 1999; Kelloway, 2015; Schumacker & Lomax, 2010). The Chi Square Test

of Model Fit (χ^2) is one of the most commonly reported statistics and tests the difference between

the sample covariance matrix and the more restricted covariance matrix based on the

hypothesized model (Byrne, 2012). A non-significant χ^2 suggests model fit or no differences

between the two covariance matrices. Results must be interpreted cautiously, however, as the

test is sensitive to sample size, sometimes with as few as 200 cases (Gau, 2010; Hoelter, 1983;

Schumacker & Lomax, 2010). Consequently, the Chi Square Test of Model Fit is evaluated

along with the root mean square error of approximation (RMSEA; values <0.06 indicate a good fit), comparative fit index (CFS; values >0.95 indicate a good fit), and the Tucker-Lewis Index (TLI; values >0.95 indicate a good fit). Following Hu and Bentler's (1999) suggestion, we adopt an approach whereby the indices are examined holistically; a slight deviation from aforementioned cutoffs is acceptable if the bulk of the evidence points to a strong-fitting model.

FINDINGS

Measurement Models

Before proceeding with the full structural model, we first constructed a measurement model inclusive of the two latent constructs—fiscal distress and economy—described earlier. Individual factor loadings for each construct were examined (four for fiscal distress and three for economy) and the overall fit of the model was assessed using common goodness of fit statistics. As shown in Table 3, all fit statistics ($\chi 2$=10.387, df=13, p=0.662, RMSEA=0.000, CFI=1.000, TLI=1.008) are well within the acceptable range suggesting that the hypothesized measurement model fits the data well. Although factor loadings are lower (<0.40) for two of the four fiscal distress measures (hiring freezes and layoffs), we decided to retain all four indicators due to their theoretical relationship to the underlying concept and the overall model fit statistics.[6]

[Insert Table 3 About Here]

Structural Model

The next step involved testing the full structural model shown in Figure 1.[7] Results are displayed as Model 1 in Table 4. The model (inclusive of both measurement and structural

components) fits the data according to goodness-of-fit statistics (χ^2=73.898, df=55, p=0.045,

RMSEA=0.029, CFI=0.963, TLI=0.953). A review of individual parameters shows only partial

support for Levine's (1978) arguments. As expected, the local economy (β= -0.544, p<0.001)

and crime rate change (β= -0.129, p<0.05) are both negatively related to fiscal distress within

large local municipal police agencies. Organizations are less likely to experience the detrimental

effects of the great recession if they operate within stronger local economic environments

characterized by higher employment rates, rising home values, and a stronger GDP. Similarly,

community need inoculates organizations from fiscal distress, even after accounting for the local

context. Large increases in serious crime rates between 2007 and 2011 also buffered

departments from major cutbacks. In contrast, drops in crime are associated with greater fiscal

distress. Among the four indicators of political vulnerability and two indicators of organizational

atrophy, only organizational size is significantly related to fiscal distress. Larger organizations

are more likely to experience some combination of salary reductions, furloughs, hiring freezes,

and layoffs. Overall, Model 1 accounts for approximately 45 percent of the variation in the fiscal

distress latent construct.

[Insert Figure 1 About Here]

[Insert Table 4 About Here]

We estimated a second model (see Model 2 in Table 4) based on software-produced

modification indices, suggestions for additional paths or constraints designed to improve overall

model fit (see Gau, 2010; Schumacker & Lomax, 2010). Adjusting models based on empirical

data should be done cautiously and with relevant theory in mind to avoid producing a strong-

fitting model unable to be reproduced with different samples. Although Model 1 fit the data, we added a single path based on the suggested modification index—a pathway connecting government form with the unobserved latent economy construct. This allows us to estimate the same parameters as in Model 1 but also examine the indirect relationship between government form and police department fiscal distress through the local economy. The results in Table 4 show that there is only a slight improvement in overall model fit from Model 1 (χ^2=60.811, df=54, p=0.244, RMSEA=0.017, CFI=0.987, TLI=0.983) with the addition of the new direct path (government form>economy) and indirect path specification. Interestingly, while a council-manager form of government is typically associated with "sound budgeting and accounting practices" (Levine, Ruin, & Wolohojian, 1981, p. 620), the results here suggest that the government form is linked to weaker local economic conditions (β= -0.180, p<0.01) and, indirectly, local police agency fiscal distress (β= 0.100, p<0.01).

A final model was estimated to further explore Levine's (1978) notion of problem depletion. In the present study, problem depletion is operationalized as the percent change in UCR Part I crime rates between 2007 and 2011. We operate under the assumption that police departments increase their exposure to cutbacks during times of fiscal austerity when the problems they are designed to handle become less pressing. By accounting for percent change, we can measure the fluctuations in the magnitude of a jurisdiction's crime problem over a relatively short period. Indeed, the results in Models 1 and 2 indicate that departmental distress is more common in agencies experiencing the greatest drops in crime during the period. Note, however, that the operationalization only considers the change in crime rates, not the absolute magnitude of the problem. We estimated the indirect path model a second time (reproducing Model 2), substituting 2011 crime rates for the percent change in crime rates from 2007-2011.

As predicted by Levine's (1978) theory, the absolute magnitude of the problem is less important than its change over time. The revised model (not shown) does not fit the data as well as Model 1 or 2 (χ^2=77.711, df=54, *p*=0.019, RMSEA=0.032, CFI=0.944, TLI=0.957) and the 2011 crime rate variable is not a significant predictor of fiscal distress (β= -0.061, *p*>0.05).

DISCUSSION & CONCLUSION

Our goal in this study was to examine the relationship between environmental indicators of financial turbulence, structural arrangements of police departments, and fiscal responses by those agencies to economic hardship. Using Levine's (1978) organizational decline typology, we found that both environmental and size variables affect agency responses.

First and foremost, we found that police departments operating within areas where the economy remained strong were the least likely to experience decline during the Great Recession. This is intuitive, and on the surface, not something that police agencies have much control over, however, there are steps that police departments can take to prepare for these inevitable fluctuations in economic conditions. For example, agencies with more slack resources may be able to withstand economic turbulence for longer periods of time before actively making cutbacks. Ironically, this can penalize the most efficient organizations, who tend to use all of their resources efficiently. Perhaps agencies that are best able to come in under budget can use some of these slack resources to prepare for potential hardships.

We also found that police departments operating in contexts with rising crime rates were less likely to make cuts. Where crime rates are high, more officers are needed to address this problem, both proactively and reactively. With falling crime rates, agencies may be able to survive with smaller numbers of officers, and some of these agencies may even be absorbed into

larger agencies (Brunet, 2015). Thus, the response to financial hardship may be influenced by the demand for the services that the organization provides.

With the exception of organizational size, we did not find evidence of any direct relationships between our measures of political vulnerability and fiscal distress; however, we did find that council-manager government forms are less likely to appear in places where the economy is doing well. This finding was unexpected, but is explainable in that our measure of economic well-being is linked more closely to individual economics (e.g., housing values, employment rates) than government resources. It could be that while the economy has improved broadly, more resources are not necessarily available at local government levels. Alternatively, the role of city managers may be overstated. Perhaps council-manager governments are not enough to prevent local economic downturns. However, the presence of a city manager may allow for "quick and effective retrenchment action" in the face of a recession, adapting more quickly than other jurisdictions (Levine, Rubin, & Wolohojian, 1981, p. 626).

Finally, we found that larger agencies, employing more officers were more likely to experience fiscal distress. These larger departments may be better able to withstand some belt-tightening by simply asking some of their remaining officers to do more. It is less likely that larger departments disappear altogether, so in order to remain functional, they might have to look to measures such as hiring freezes, layoffs, or salary reductions. Larger agencies may be better situated to survive economic challenges, but that doesn't mean that they won't be forced to adapt (see King, 2014).

Our study was not without limitations. While we merged multiple iterations of the LEMAS survey together, we were only able to examine our variables cross-sectionally. This is because the items that appear in the different waves of the LEMAS are not necessarily

consistent. For example, the 2007 LEMAS survey includes a measure of the number of substations, which allows for measurement of spatial complexity. The 2013 LEMAS contains no such measure, so it is not possible to examine changes in this construct across the waves. As such, a longitudinal examination of police agencies (see King, 2009) using data from the LEMAS series is quite challenging. Ideally, we could examine whether agencies that have become more complex experience more financial distress. The answer to this question is not possible given the data at hand.

We were also lacking some measures that could help us apply Levine's typology to police agencies (see Brunet, 2015). Measures of the age of the organizations in our sample, and whether there was some type of political changeover would help us further develop the political vulnerability concept, which received only indirect support in our study. Moreover, organizational-level information regarding retirements, turnover, misconduct, or slack resources would help examine organizational atrophy more effectively. Even when economic circumstances are challenging, a large number of retirements and voluntary resignations may prevent the organization from taking more formal measures such as layoffs or salary reductions.

It is also possible that police departments begin to mirror each other in attempts to successful address organizational decline and economic turbulence. The literature on isomorphism among organizations suggests that this process can be coercive when organizations change due to pressures from larger, more powerful organizations, or it can be mimetic if it results from one organization imitating another (see Burruss & Giblin, 2014; DiMaggio & Powell, 1983). In both cases, police organizations experiencing decline are likely to follow the lead of those agencies which have provided an effective blue-print for addressing such decline. We did not have any measures of this potential process.

In addition to examining the relationship between organizational decline and police organizational structure longitudinally, future researchers may examine whether a reciprocal relationship exists between fiscal distress and organizational structure. That is, do agencies that experience fiscal distress become less complex in the future? Moreover, what long-term effects might fiscal distress have on police effectiveness and/or police legitimacy? We believe that a number of policing outcomes may be influenced by the economic stability of the police agency.

To conclude, our study examined how both police organizational structure and environmental economic conditions affect fiscal decisions by police departments. We found that both economic conditions, and factors linked to the organizations themselves predict responses. In a social reality where economic conditions will continuously ebb and flow, it is important that police agencies have plans in place to adapt to economic turbulence.

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Table 1. Descriptive statistics for endogenous and exogenous variables

	n	*m*	*sd*	min.	max.
Economic distress indicators					
Salary reductions	461	0.085	0.279	0	1
Furloughs	457	0.228	0.420	0	1
Hiring freezes	462	0.301	0.459	0	1
Layoffs	443	0.059	0.235	0	1
Environmental entropy indicators					
Median home value change	461	-11.172	17.629	-54.84	32.40
GDP change	437	-1.031	1.663	-6.00	10.80
Employment rate	465	90.993	2.034	83.50	96.70
Problem depletion indicator					
Crime rate change	442	-16.739	19.122	-96.05	35.90
Political vulnerability indicators					
Organizational size (FT sworn)	465	494.865	1872.103	87	35,216
Government (council-manager)	461	0.568	0.496	0	1
Funding variety	461	3.965	1.823	0	7
Community policing	462	5.896	2.149	0	9
Organizational atrophy indicators					
Horizontal complexity	450	10.531	4.663	0	22
Formalization	462	14.509	1.750	8	17

Table 2. Correlation matrix and collinearity statistics for study variables

		1	2	3	4	5	6	7	8	9	10
1	Median home value change	1.000									
2	GDP change	0.629	1.000								
3	Employment rate	0.529	0.445	1.000							
4	Crime rate change	0.034	0.038	0.063	1.000						
5	Government form	-0.156	-0.196	-0.114	-0.104	1.000					
6	Funding variety	-0.091	-0.044	-0.065	-0.030	0.048	1.000				
7	Community policing	-0.110	-0.078	-0.017	-0.008	0.172	0.024	1.000			
8	Organizational size (logged)	0.005	-0.033	-0.028	-0.030	-0.180	0.111	0.153	1.000		
9	Horizontal complexity	-0.102	-0.135	-0.103	-0.004	0.076	0.160	0.292	0.639	1.000	
10	Formalization	-0.086	-0.032	-0.050	0.006	0.027	0.000	0.166	0.262	0.289	1.000
	VIF[1]	1.94	1.78	1.42	1.02	1.16	1.04	1.13	1.91	1.99	1.11

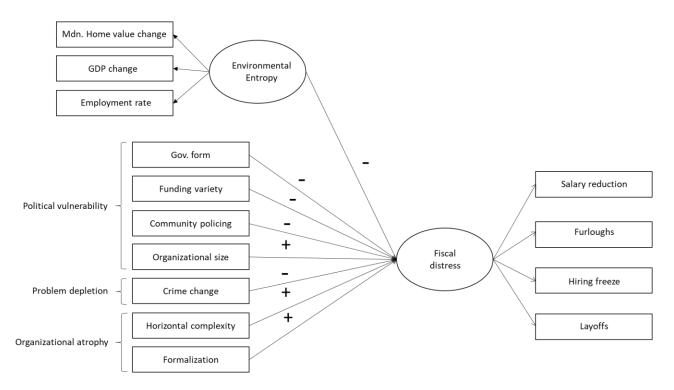[1] VIF based on sample of $n=391$ after listwise deletion.

Figure 1. Theoretical model of fiscal distress and hypothesized relationships

Table 3. Fiscal distress and economy measurement model estimates

Fiscal distress		Economy	
Indicator	Item loading	Indicator	Item loading
Salary reductions	0.828	Median home value change	0.877
Furloughs	0.759	GDP change	0.712
Hiring freezes	0.399	Employment rate	0.623
Layoffs	0.355		

χ^2=10.387, df=13, p=0.662, RMSEA=0.000, CFI=1.000, TLI=1.008

Fiscal distress/Economy R = -0.552

Table 4. Estimates and fit indices for fiscal distress structural model[1]

	Model 1	Model 2

	β	S.E.	β	S.E.
Environmental entropy				
Economy (unobserved latent)	-0.544***	0.064	-0.555***	0.065
Problem depletion				
Crime rate change	-0.129*	0.064	-0.129*	0.064
Political vulnerability				
Government form	0.084	0.081	-0.016	0.077
Funding variety	0.023	0.077	0.023	0.077
Community policing	-0.072	0.076	-0.072	0.076
Organizational size (FT sworn)	0.240*	0.098	0.240*	0.098
Organizational atrophy				
Horizontal complexity	0.186	0.102	0.186	0.102
Formalization	-0.055	0.085	-0.055	0.085
Government form>economy			-0.180**	0.061
Government form>economy>fiscal distress (indirect)			0.100**	0.036
n		419		419
χ^2		73.898		60.811
df		55		54
p		0.045		0.244
RMSEA		0.029		0.017
TLI		0.953		0.983
CFI		0.963		0.987
Fiscal distress R^2		0.453		0.455

***$p<0.001$, **$p<0.01$, *$p<.05$

[1] Measurement model parameters omitted.

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[1] As an anonymous reviewer pointed out, it is possible that certain agencies (e.g., more complex agencies) may be more likely to utilize non-sworn personnel, who may serve as specialists or experts. Cutting these employees would likely have a different effect than cutting other officers who may lack this level of expertise. Unfortunately, the nature of our dependent variables does not allow us to make this distinction.

[2] The LEMAS dataset includes indicators that would capture the depth of the decline for both sworn and non-sworn personnel (e.g., the percent of the salary reduction, the duration of the hiring freeze, the number of individuals experiencing layoffs or furloughs). We employ "presence" indicators given the highly skewed nature of the variable. For example, 95% of agencies did not furlough any sworn personnel but 12 (<3%) furloughed more

than 90% of sworn employees. Given this distribution, a binary indicator proved sufficient to capture the existence of fiscal distress, particularly when the four indicators are combined into a single latent construct.

[3] Although we computed percent change scores for GDP and housing prices, we used only the 2011 unemployment rates. GDP and housing prices are influenced by factors (e.g., cost of living, size of industry) that make direct comparison across areas difficult. Thus, percent change scores are used instead. In contrast, unemployment rates are more directly comparable across areas; a single year's unemployment rate provides a useful indication of the state of the local economy.

[4] Problems/tasks included auto theft, bias/hate crime, bomb/explosive disposal, child abuse/endangerment, community crime prevention, crime analysis, cybercrime, domestic violence, drug education in schools, financial crimes, drug enforcement, gangs, impaired drivers, internal affairs, juvenile crime, methamphetamine labs, missing children, repeat offenders, research and planning, school safety, terrorism/homeland security, and victim assistance.

[5] Areas include deadly force/firearm discharge, use of less-than-lethal force, code of conduct and appearance, off-duty employment, maximum work hours, off-duty conduct, interacting with the media, employee counseling assistance, mentally ill persons, homeless persons, domestic disputes, juveniles, persons with limited English proficiency, collection of information on in-custody deaths, racial profiling, citizen complaints, and checking of immigration status by patrol officers.

[6] Incidentally, we also tested a model with five, rather than four, indicators of fiscal distress. The additional item—restrictions on overtime—was also available in the LEMAS 2013 dataset. Although the fit statistics for this *expanded model* were also within acceptable ranges ($\chi 2$=21.267, df=19, *p*=0.322, RMSEA=0.000, CFI=0.996, TLI=0.994), the overall model was inferior to the four-indicator fiscal distress version. Additionally, the overtime factor loading was negative, suggesting that it did not fit with the other fiscal distress indicators.

[7] Mplus uses multiple imputation when performing analyses to maximize sample size. Although we report the imputed models, we also performed all analyses using listwise deletion (resulting in a sample size of approximately 369 agencies per model. Fit statistics changed slightly as did coefficient estimates but the significant parameters remained unchanged. Therefore, we omitted reporting the analyses using listwise deletion.