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Law Enforcement Officers' Receptivity to Compstat Model of Policing*

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Abstract: The limited amount of research on officer attitudes toward Compstat has been conducted. The present study, using a mixed-method design, first analyzes survey data from 563 officers in three law enforcement agencies to understand the attitudes of law enforcement officers toward Compstat and to examine the factors affecting their receptivity to Compstat. Then, qualitative data was collected to gain greater depth of officer attitudes. The survey findings indicate that majority of participants do not hold favorable attitudes toward Compstat. The results suggest that perceived effectiveness, agency readiness, supervisory attitude toward the management, and receptivity to change have a significant influence on officers' attitudes toward Compstat. It was also found that work experience and departments in which officers work significantly influence officers' attitudes. The findings of the qualitative data indicate that communication, cooperation, competition, implementation style, pressure, and incentive influence officers' attitudes toward Compstat.

Keywords: Organizational Change, Police, Police Culture, Compstat

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Kolluk Kuvvetlerinin Compstat Polislik Modeline Duyarlılığı

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Öz: Polislerin Compstat'a karşı sergilediği tutum üzerine sınırlı sayıda çalışma yapılmıştır. Karma yöntem metodu kullanılarak yapılan bu çalışma, kolluk kuvvetlerinin Compstat'a olan tutumunu anlamak ve Compstat'a karşı olan hassasiyetlerini etkileyen faktörleri incelemek için üç farklı kolluk teşkilatından 563 polis ile yapılan anketlerden alınan verileri analiz eder. Daha sonra ise, memurların tutumuyla ilgili daha fazla bilgi edinebilmek için nitel veriler toplanmıştır. Anket sonuçları, katılımcıların çoğunun Compstat'a karşı olumlu bir tutuma sahip olmadığını göstermektedir. Sonuçlar; algılanan verimliliğin, kurumların istekliliğinin, yönetime karşı denetleyici tutumun ve değişime olan hassasiyetin memurların Compstat'a olan tutumuna önemli ölçüde etki ettiğini öne sürmektedir. Ayrıca, iş tecrübesinin ve çalışılan teşkilatın da polislerin tutumuna kayda değer bir etkide bulunduğu görülmüştür. Nitel araştırma sonucu elde edilen bulgular; iletişimin, işbirliğinin, rekabetin, uygulama tarzının, baskının ve teşvikin memurların Compstat'a olan tutumunu etkilediğini göstermektedir.

Anahtar Kelimeler: Örgütsel değişim, Polis, Polis Kültürü, Compstat

Introduction

Over the past three decades, police departments have implemented various strategies to reduce crime and improve the quality of life of their citizens. During the 1990s, it was understood that traditional policing had no impact on controlling crime (Weisburd & Braga, 2006). The ineffectiveness of police strategies caused police to lose not only community support, but also their trust. In addition to police ineffectiveness during the 1980s, some external factors, such as pressure from private security, pressure from the public and innovations in technology put police under pressure to fulfill their tasks more efficiently (Mazerolle, Rombouts, & McBroom, 2007).

A number of innovative policing strategies have been sought by scholars and agencies including community policing, problem oriented policing, broken windows policing, Compstat, and hot-spot policing approaches (Weisburd & Braga, 2006). In contrast to other police innovations, Compstat focuses on the police organization rather than police strategies (Weisburd & Braga, 2006). In response to rising crime rates and the failures of traditional policing approaches (Weisburd & Braga, 2006), in 1994, the NYPD developed a police innovation, a crime control model known as Compstat (McDonald, 2002; Dabney, 2010). Compstat was developed based on the concept of crime control and quality of life improvement (Walsh, 2001; McDonald, 2002; Walsh & Vito, 2004). Furthermore, Bratton used problem solving, accountability, and the "broken windows" theory in order to develop the Compstat approach in the NYPD (Kelling & Sousa 2001). Kelling and Sousa (2001) described Compstat as "perhaps the single most important organizational/administrative innovation in policing during the latter half of the 20th century" (p. 2). Compstat focuses on crime control, quality of life, empowering operational commanders, accountability, strategic management and information technology (Wash & Vito, 2004).

As noted by Silverman (1999) and O'Connell (2002), through employing modern management techniques, Bratton and his team re-engineered the NYPD's business process and organizational structure. According to Bratton (2002), former NYPD commissioner and creator of Compstat, avoiding risk and failure had become one of the characteristics of the department and personnel. The department needed key changes in management style to become efficient in providing safety to citizens. Decentralization by providing autonomy to middle level managers and holding them accountable, using technology and problem solving techniques played an important role in developing Compstat. Compstat has become an effective management model in achieving an organization's goals (Henry, 2005). Bratton used the performance-based management (PBM) system in New York City by connecting the outcomes to organizational goals and holding employees accountable (O'Connell & Straub, 2007).

In order to implement Compstat, police organizations need to undertake some organizational changes including planning, empowering, reallocation of resources, and training of officers. According to Lurigio and Skogan (1994), it is important the organization members understand and accept the change initiative for a successful implementation. Therefore, the reasons behind the resistance to organizational change needs to be examined. As will be discussed in this study, the literature suggests that organizational cultural factors can have an impact on the perceptions and attitudes of officers to planned change policies (Cochran et al. 2002). Therefore, the implementation process is influenced by cultural factors which in turn, impacted the success of the Compstat implementation process (Behn 2005). For that reason, employee attitudes towards Compstat and the influence of police culture on officers' views of Compstat should be evaluated by empirical research.

This study attempted to contribute to this knowledge base by examining employee attitudes toward Compstat and the influence of police cultural factors on attitudes toward the implementation of Compstat. The important questions for managers and researchers explored were "what are officers' and managers' attitudes toward Compstat?", and "what are the effects of demographic characteristics, police culture, and organizational/structural features on officers' attitudes toward Compstat?"

To date, the history of Compstat (Silverman, 1999; O'Connell & Straub, 2007), the adoption and implementation of the Compstat approach outside of the NYPD (Weisburd et al., 2003), the effects of Compstat on organizational change (Willis, Mastrofski, & Weisburd, 2003, 2004), and the impact of Compstat on crime rates (Kelling & Sousa, 2001; Chilvers & Weatherburn, 2004; Mazerolle et al., 2007, 2011; Jang, Hoover, & Joo, 2010) have been explored. Despite an increased interest in Compstat, very few studies have focused on attitudes of law enforcement officers toward Compstat. Also, majority of these studies provided descriptive information about the attitudinal dimensions (Willis et al., 2003; Vito, Walsh, & Kunselman, 2005; Dabney, 2010). Therefore, the present study attempts to address these limitations by examining law enforcement officers' attitudes toward Compstat and the factors concerning their acceptance of Compstat in three law enforcement agencies in the U.S.

Employees' understanding and acceptance of the change may be especially critical for successful implementation (Cochran et al., 2002). This study examined the similarities and differences among officers' attitudes toward Compstat by testing three sets of variables/models (demographic features, police cultural dimensions, and structural/organizational features) which were developed by Cochran et al. (2002). In this research, the researcher used the organizational culture theory to uncover the influence of organizational culture on officers' views of Compstat in law enforcement agencies.

In this study, the researchers analyzed data from three law enforcement agencies (two police and one sheriff) in the South Atlantic region of the United States

to examine two issues: (a) the attitudes of street officers, middle and executive managers toward Compstat, (b) the effects of demographic variables, police culture, and organizational variables on officers' attitudes. Organizational change, organizational culture, implementation of innovations, attitudes, and policing literature are discussed to build a conceptual model. The model is tested to understand to what extent this model explains law enforcement officer's views of Compstat. Then, qualitative data is discussed to provide further insight into the attitudes of officers and managers.

Innovations and Organizational Change

Innovation is defined by Rogers (2003) as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 12). According to Rogers (2003, p.5), "diffusion is a process in which an innovation is communicated through certain channels over time among the members of a social system. " Rogers explained diffusion of innovations as a theory that analyzes the adaptation of a new innovation. As Rogers noted, the diffusion of innovation process consists of four main elements: the innovation, communication channels, time, and the social system (Rogers, 2003).

Rogers introduced four characteristics of innovations that help to explain their different rate of adoption. Rogers defined r*elative advantage* as "the degree to which an innovation is perceived as better than the idea it supersedes" (2003, p.229). In order to adopt and implement Compstat, police executives should see that Compstat is relatively advantageous for police departments when cost and benefit analysis are done (Innes & Simpson, 1993). *Compatibility* is "the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters" (p. 15). When adopting an innovation, the culture, practices, skills, language, understandings, and organizational and social structures of the organization should be taken into consideration. Adopting and implementing Compstat requires collaboration between agencies that do not generally work together (Innes & Simpson, 1993). *Complexity* is "the degree to which an innovation is perceived as difficult to understand and use" (p. 16). In this regard, Compstat must be comprehensible and meaningful to those who build it, use it, or make decisions about it (Innes & Simpson, 1993). *Trialability* is "the degree to which an innovation may be experimented with on a limited basis" (p. 16). Rogers argues that trialability is mostly significant for early adopters and innovators. Trialability gives these early adopters a way to comprehend the innovation. Later adopters can count on the experiences and knowledge of the early adopters (Rogers 2003). Rogers (2003) defined o*bservability* as "the degree to which the results of the innovation are visible to others" (p. 16). When the value of adopting Compstat is noticeable, organization members are more likely to accept it and other police departments are more likely to adopt it. Also, Rogers

(2003) argues that implementation of an innovation leads to change.

In both the public and private sector, managers have showed increasing attention towards improving their organizational performance. They have been interested in improving their organizations through implementing organizational change (Cawsey & Deszca, 2007). Cawsey and Deszca (2007) defined organizational change as "planned alteration of organizational components to improve the effectiveness of organizations" (p. 25). Among organizational change theories, teleological theory, also called the planned change model, focuses on purposeful change efforts which aim to transform the whole organization or a subsystem (Carnall, 1995; Kezar, 2001) and cultural theory views focus on organizational life (Schein, 2010). Reengineering and TQM implementation processes represent a teleological view of change (Kezar, 2001). Since Compstat is defined as a performance measurement system (Moore & Braga, 2003), or a performance-based management system (O'Connell & Straub, 2007), the study attempted to examine Compstat and officers' attitudes from a planned organizational change model and organizational cultural theory perspective.

Scholars focus on different aspect of change in their attempts to identify differences on focus of change: structure, process, and attitude (Watson & Johnson, 1972). These different aspects of change are interrelated. Organizational charts, policies, and reward systems are the focus of the structural perspective; process refers to the interaction of people in the organization; and people's feeling about the structure and the process are the interest of attitudinal perspective. Moreover, cultural change is associated with change in attitude (Watson & Johnson, 1972; Kezar, 2001).

According to Spector (2007), introducing a quality improvement approach such as Total Quality Management (TQM), Business Process Reengineering (BPR), Six Sigma, and Business Model Reinvention (BMR) to organize and improve the business process represents an organizational change. Spector further argues that employee behavior modification is required for effective implementation of these changes because employee behavior is directly related to organizational performance. Likewise, Edosomwan (1996) highlighted the influence of the involvement of the organizational members during the implementation process. According to Callahan (2007), commitment of top management, reasonable program stability, sufficient capacity, and the support of the front-line employees are crucial for successful implementation of a performance measurement system. However, upon introducing any reform movements, organizations might confront obstacles and resistance during the adoption or the implementation process (de Lancer Julnes, 2009).

Change in an organization is often implemented based on Ajzen's (1985) attitude and behavior model (Martin & Huq, 2007). According to this model, attitudinal change is necessary to change the behavior; thus, attitudes lead to changes in behavior. If employees have positive attitudes toward change and show ac-

ceptance and commitment, a desired change will be much easier (Martin & Huq, 2007). Attitude was originally defined by Fishbein and Ajzen (1975) as a "learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (p. 6). Ajzen and Cote (2008) stated that attitude is a crucial concept for understanding and predicting behavior. The theory of planned behavior (TPB) of Ajzen (1985) is one of the most popular models explaining and predicting human behaviors (Ajzen and Cote, 2008). The theory of planned behavior explains human behavior by using three major factors (Ajzen & Cote, 2008): "a favorable or unfavorable evaluation of the behavior (attitude toward the behavior), perceived social pressure to perform or not perform the behavior (subjective norm), and perceived capability to perform the behavior (self-efficacy)" (p.301).

Furthermore, it is important to understand the effects of culture because culture has significant effects on organizations and their members (Rad, 2006). Research suggests that culture affects the implementation of Total Quality Management (Rad, 2006; Yong & Pheng, 2008), organizational change process (Rashid, Sambasivan, & Rahman, 2004), and officers' receptivity to community policing (Paoline, Myers, & Worden, 2000; Cochran et al., 2002; Moon, 2006). Therefore, it is crucial to understand the relationship between organizational culture and officers' attitudes toward Compstat implementation. According to Schein (2010), "organizational culture is a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (p. 18). Moreover, like some other occupations, policing have an occupational culture which consists of different beliefs and values because of the identity they gain through education, training, and practicing their occupation (Schein, 2010; Paoline, 2001). The key dimensions of police culture are discussed in detail when the independent variables are presented.

In order to implement Compstat successfully, police departments need to make some significant reorganization movements such as using GIS and information technologies, implementing innovative tactics and strategies, empowering middle managers and holding them accountable for accomplishing organizational goals. Nevertheless, changes often cause cynicism and resistance among employees (Cochran et al., 2002). However, to be successful, a policing program or policy must be understood and accepted by employees (Lurigia & Skogan, 1994).

This study is the first in the context of law enforcement agencies (two police departments and one sheriff's office) to examine the factors related to officers' acceptance of Compstat and the effects of police culture on officers' views of Compstat. The implementation of Compstat led to organizational change (Silverman 1999), but this is a complex and continuing process similar to implementing any other performance measurement system (de Lancer Julnes 2009). As noted by Novak et al. (2003), implementing a program overnight is not practical because

police departments try to preserve the status quo and resist change. First of all, since many officers have either been socialized in traditional policing and have witnessed community policing efforts or have been recruited and trained according to the community policing philosophy (Novak et al. 2003), they may resist organizational change due to the implementation of Compstat. Second, Compstat leads in shifting the decision making power and autonomy away from line officers to supervisors (Willis et al. 2003), especially to middle managers in contrast to community policing and holds managers accountable for achieving organizational goals (O'Connell and Straub 2007). Thus, line officers may resist Compstat because of the loss of power, while managers may resist it because of a feeling of too much pressure from the top management (Moore 2003). This is another important dimension of the study because it does not only examine factors that affect officers' perceptions but also middle and executive managers' perceptions.

Data and Methodology

The data for this study were collected from law enforcement officers and managers employed at three agencies: one county sheriff's office, one county police department, and one transit police department. These agencies had implemented Compstat at least one year prior to the study. Compstat had been implemented for over than 10 years in the county police department, 4 years in the sheriff's department, and more than 1 year in the transit police department. Also, the size of agencies varied: the county police department was a large agency with over 500 sworn officers, while the sheriffs' department and transit department were mid-size agencies with 100-500 sworn officers. Quantitative data was collected by a self-administered survey among the organizational members of each agency with particular ranks (sheriff's deputy/police officer, corporal, sergeant, lieutenant, and captain). Interviews were conducted after completing the survey in order to better understand participants' attitudes in detail toward Compstat. First, the top managers and crime analysis unit supervisors of each agency were interviewed. Next, 17 participants were selected among those who participated in the survey.

After the approval of research goals and survey questions by the top command of each department, a survey questionnaire was distributed and completed during roll-call for each of the three shifts of all precincts/districts of each agency from June to October, 2011. Participants were assured that their participation was voluntary. Also, anonymity and confidentiality were stressed. A total of 563 completed surveys which provided an 80% response rate were used in this study. The number of eligible surveys from each department was as follows: county police department, 397 of a possible 488 (81%); county sheriff's department, 76 of a possible 97 (78%); and transit police department, 90 of a possible 117 (77%). Several respondents chose not to answer all questions, especially the socio-demographic questions. The questionnaire took approximately 15 minutes to complete.

Of the sample (Table 1), 76.2 percent of the respondents reported that they are police officers or sheriff's deputies, 3.7 percent are corporals, 9.4 percent are sergeants, 6.2 percent are lieutenants, and 2.3 percent are captains. A total of 11.2 percent of participants indicated that they are females and the majority of participants (87 percent) are males. Of these, 75.8 percent are white, 14.4 percent are African Americans, 2.8 percent are Hispanic or Latino, 2 percent are Asian, and 1.4 percent is representing other minorities. Almost one quarter (24.3%) of the respondents are 20-29 years of age; 31.4 percent are 30-39 years old; 24.3 percent are 40-49; and 9.1 percent are in their 50s. About one-third of the respondents (36.8%) reported having a high school diploma, 28.2 percent having an associate's degree, and 29.1 percent having a bachelor's degree, and 3.2 percent having a graduate degree.

Table 1: Demographic Characteristics of Respondents

Item	Contents	Number of Samples	Percent
Ranking	Police officer/Sheriff's deputy	429	76.2
	Corporal	21	3.7
	Sergeant	53	9.4
	Lieutenant	35	6.2
	Captain	13	2.3
Gender	Female	63	11.2
	Male	490	87.0
Race	White	427	75.8
	African-American	81	14.4
	Hispanic or Latino	16	2.8
	Asian	11	2.0
	Other	8	1.4
Age	20-29	137	24.3
	30-39	177	31.4
	40-49	137	24.3
	50 and above	51	9.1
Education	High School Diploma/GED	207	36.8
	Associates Degree	159	28.2
	Bachelor's Degree	164	29.1
	Graduate Degree	18	3.2
Work Experience	Fewer than 3 years	76	13.5
	3-10 years	225	40.0
	11-20 years	168	29.8
	21 years and more	81	14.4

n=563

Regarding work experience, 13.5 percent of them reported having less than 3 years experience, 40 percent having 3 to 10 years experience, 29.8 percent having 11 to 20 years experience, and 14.4 percent having more than 20 years of experience.

Dependent Variable

The dependent variable for this study is law enforcement officers' and managers' attitudes toward Compstat. In this study, attitude is defined as the extent

to which a respondent expresses a favorable or unfavorable perception toward Compstat. Likert-type items were used in the survey to assess officers' attitudes toward Compstat. In order to measure whether participants supported Compstat, a support of Compstat scale was created similar to the support of community policing scale developed and used by Wycoff and Skogan (1994) and Adams, William, and Thomas (2002). Five point Likert-type statements ranging from 1 (strongly disagree) to 5 (strongly agree) were used as response options. Principal components analysis of the five Likert-type items indicated that a single factor with four items represented the support of Compstat. The item loadings ranged from 0.66 to 0.86 and the items in the factor formed a scale with a reliability of 0.79. In addition, item 4 "Compstat was one more fad in policing and will soon be replaced by another fad" was reverse coded. The items were summed and coded so that a higher score indicated greater support of the law enforcement agency in implementing Compstat.

Independent Variables

In this study, the researchers use a model developed by Cochran et al. (2002) to understand officers' attitudes toward Compstat implementation. The factors affecting officers' receptivity to community policing were well-explained by Cochran's scale. Therefore, the present study uses Cochran's scale to assess receptivity to another innovation (Compstat) by applying it in multiple agencies. The independent variables were classified by three groups: socio-demographic and work experiences, police subculture, and perception of agency preparedness/readiness.

(1)

The measure of socio-demographic characteristics and work experiences has been named *the life experiences/life chances model*. This model examined the effects of officers' attributes such as age, years of service, education, department, and rank on officers' attitudes toward Compstat. It was believed the officers' background characteristics and different departmental policies might impact the officers' views of organizational change initiatives (Cochran et al., 2002; Paoline, 2001).

Before performing multivariate analysis, the non-metric independent variables were created in a dummy variable format as follows: for rank, 0=rank and file officer and 1=manager; for education, 0=otherwise and 1=each of educational level (four variables); for work experience, 0=otherwise and 1=each of the work experience group (four groups); and for departments, 0=otherwise and 1=each of the three agencies (three variables). Because the age of the participants was measured in years, it was included in the analysis as a continuous (metric) variable.

(1)

The measure of officers' work orientations, which was termed as an offi-

cer/organizational *subculture model*, examined the effects of crime control, service work orientations, cynicism, traditionalism, receptivity to change (Cochran et al., 2002), and perception of upper level management (Paoline, 2001).

The dimension of *crime control* measured "the importance officers place on the law enforcement and crime control functions of their jobs" (Cochran et al., 2002, p. 515). Police culture research suggests that officers perceive crime fighting activities as real police work (Sparrow et al., 1990; Paoline, 2004). During the reform era, crime control orientation was reinforced and arrests became the most important tool of policing (Sparrow, Moore, & Kennedy, 1990). Since Bratton asked NYPD officers to be more aggressive toward crime, measuring this variable can help us understand the impact of crime control orientation on officers' attitudes toward Compstat. This scale also measures officers' views of legal restrictions on police behavior. Police officers' views of crime control was measured by Likert-type statements with response options ranging from 1 (strongly disagree) to 5 (strongly agree). Through performing principal components analysis and Cronbach's alpha test of reliability, two components found to represent crime control were: crime fighting (Cronbach's alpha=0.65) and legal restrictions (Cronbach's alpha=0.78). High values on factor 1 indicate that officers have negative attitudes toward handling non-crime issues because they have a perception that these activities detract from their ability to fight crime. High values on factor 2 indicate that officers have positive attitudes toward ignoring legal restrictions.

The dimension of *service work orientation* measures the extent to which officers place importance on community-oriented policing (Cochran et al., 2002). Contrary to traditional top-down management, community policing is a bottom-up strategy which highlights the importance of the empowerment of police officers and community involvement in problem solving (Walsh, 2001). Police culture research suggest that police officers do not think that community policing works; instead, they perceive it as "baby sitting", "social work" or "not real police work" (Lurigio & Skogan, 1998; Cochran & Bromley, 2003). Therefore, the researchers aimed to measure the impact of service orientation on the attitudes of officers. Principal components analysis and reliability analysis of the 14 Likert-type items indicated that community cooperation (Cronbach's alpha=0.78) and community policing (Cronbach's alpha=0.68) components represent a service work orientation. High values on factor 1 indicate that officers among respondents have positive attitudes toward cooperation with the community they serve. Those officers think that working with community members, making informal contacts with them, lowering citizens' fear of crime and assisting community is as important as enforcing the law. Likewise, high values on factor 2 indicate that officers have positive attitudes toward community policing. Respondents who have high scores on factor 2 have a perception that officers should learn the needs of the community they serve and assist them with their non-crime problems.

The dimension of *cynicism* measures the extent to which officers trust in people regarding various aspects of police/community relations (Cochran et al., 2002). According to the literature on police culture, police have negative attitudes toward citizens and do not trust them due to "us vs. them" attitude (Westley, 1970; Paoline, 2001). Principal components analysis and reliability analysis of the nine Likert-type items showed that two components represent the dimension of cynicism: distrust of citizens (Cronbach's alpha=0.73) and optimism about police/community relations (Cronbach's alpha=0.70). High values on factor 1 indicate that officers among respondents have negative attitudes toward the citizens they serve. Those officers think that citizens are not trustworthy and honest; citizens would lie to manipulate officers; citizens would steal if they had chance; and citizens do not show respect to law enforcement officers. Likewise, high values on factor 2 indicate that officers have negative attitudes toward improving relationships with the community. Respondents who have a high score on factor 2 have a perception that law enforcement officers and citizens do not trust one another enough to work together effectively.

The dimension of *receptivity to change* measures officers' receptivity/openness to organizational change. Principal components analysis of the four Likert-type items supported a single factor solution. The item loadings ranged from 0.63 to 0.91 and the items in the factor formed a scale with a reliability of 0.75. These items were then summed and coded so that a higher value indicated that officer has high level of openness to change.

The *perception of supervisory* measures "the degree to which officers hold favorable perceptions of top management" (Paoline, 2001, p. 72). Based on the literature concerning police culture, the researchers expected to find that police officers have unfavorable attitudes toward upper level management (Paoline, 2001) and top-down initiatives introduced by senior managers. Police officers' views of top management were measured in terms of three Likert-type questionnaire items with response options ranging from 1 (very unlikely) to 4 (very likely). The results of principal components analysis indicated that a single-factor solution represented the scale. The item loadings ranged from 0.71 to 0.86. The items in the factor produced a scale with a reliability of 0.74. These items were summed and coded so that a high score indicated that officers held positive attitudes toward upper management.

(1)

The measure of officers' perceptions of agency preparedness/readiness for Compstat was also termed as an *organizational/structural model*. The third model examined the officers' perception about how well the organization has prepared for the implementation of Compstat. In addition, the perceived effectiveness of Compstat scale was added to the model.

Perceived effectiveness of Compstat: In this study, using the Theory of Planned Behavior (Ajzen, 1985) and the Technology Acceptance Model (Davis, 1989), perceived effectiveness was defined as the degree to which the participants believed that implementing Compstat improves organizational performance. In the technology acceptance model, the perceived usefulness is the most significant contributor to predict users' attitudes and acceptance of technology (Davis, 1989). Likewise, the researchers assumed that the perception of the effectiveness of implementing Compstat would very likely have a positive effect on determining officers' attitudes. The scale was adopted from Adams et al. (2002). The perceived effectiveness was measured using six items on a 3-point Likert scale with 1 meaning "less likely", 2 as "no change", and 3 as "more likely". The six items measuring the perceived effectiveness of Compstat were entered into principal components analysis. The analysis produced one factor with eigenvalues greater than 1.0 accounting for 56.9% of the total variance. The item loadings ranged from 0.71 to 0.80. Cronbach's alpha value for the factor was above the cutoff value of 0.65 (α=0.84). High values on the factor indicate that a respondent has a positive view about the effectiveness of Compstat.

The dimension of *agency readiness* measured the extent to which officers "placed importance on the planning, training and resource deployment that the agency has invested toward its Compstat initiative" (Cochran et al., 2002, p. 517). This scale measured how well their agency was prepared for Compstat through asking questions regarding communication of Compstat policies, training, management commitment, and resource distribution. Respondents' views of agency readiness were measured in terms of six Likert-type questionnaire items (ranging from 1 = strongly disagree, to 5 = strongly agree). A single factor model was found to represent the dimension of agency readiness by performing principal components analysis and reliability analysis (Cronbach's alpha=0.80). High values on the factor indicate positive view of agency readiness for implementing Compstat, because those respondents think that policies and procedures were clearly communicated, they received adequate training, and the department allocated sufficient resources for the implementation of Compstat.

Furthermore, participants' knowledge of Compstat was measured in terms of a single Likert-type item. Participants were asked to answer a five-point Likert scale ranging from 1=strongly disagree to 5=strongly agree with the statement "I understand what Compstat is." Therefore, the item was dichotomized into those who disagreed/neutral (1-3) vs. those who agreed (4-5). The respondents were categorized as knowledgeable if they agreed or strongly agreed with the statement. Through recoding the item, a dichotomous understandability variable was created: 0 = nonknowledgeable vs. 1 = knowledgeable.

Table 2: Descriptive statistics of main dependent and independent variables

	Mean	Standard Deviation
Dependent variable:		
Support of Compstat (four-item linear composite)	10.4	3.0
Work orientation (Police cultural) variables:		
Crime Fighting (three-item linear composite)	9.1	2.3
Legal Restrictions (three-item linear composite)	7.8	2.7
Community Cooperation (six-item linear composite)	23.7	3.1
Community Policing (four-item linear composite)	10.5	2.8
Distrust of Citizens (four-item linear composite)	12.0	2.9
Optimism about Community Relations (three-item linear comp)	7.5	1.9
Receptivity to Change (three-item linear composite)	8.4	2.2
Supervisory Attitude (three-item linear composite)	7.0	2.1
Organizational (Agency readiness) variables:		
Agency Readiness (three-item linear Composite)	7.9	2.7
Perceived Effectiveness (three-item linear Composite)	13.4	2.8
Understandability (0 = nonknowledgeable, 1 = knowledgeable)	0.69	0.46

Findings from Officer Survey

Table II presents the items used to understand the attitudes of officers and managers toward the Compstat model of policing. This variable was used to measure the extent to which respondents supported the implementation of Compstat. The scores on the index ranged from 4 to 20 with a mean of 10.4 and a standard deviation of 3.0. Analysis of the findings indicated that about one-third of the participants responded with a neutral response regarding perception of support. Almost half of the participants (48%) disagreed with the statement that "the cooperation between my unit and specialized units in the department has improved due to Compstat" and more than half of the participants (55.6%) disagreed that "Compstat has helped to improve the morale of the department." Likewise, only 24.7% reported support for Compstat, while 29.8% responded that they did not support Compstat, and 45.1% had a neutral attitude toward Compstat. Furthermore, 41.2% believed that Compstat was a fad in policing. Overall, the index indicated that participants were ambivalent about the implementation of Compstat in their agencies. Approximately one fifth of the participants supported Compstat, almost half of the participants had negative attitudes toward Compstat, and about one third of them had neither positive nor negative attitudes toward Compstat.

Table 3: Law enforcement officers' attitudes toward Compstat

Items	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
1. The cooperation between my unit and specialized units in the department has improved due to Compstat.	15.5	32.5	36.1	14.9	1.1
2. Compstat has helped to improve the morale of the department.	21.1	34.5	38.0	5.5	0.9
3. I very much support the department's move toward Compstat.	10.8	19.0	45.1	22.6	2.1
4. Compstat is just one more fad in policing and will soon be replaced by another fad.	3.6	17.2	38.0	28.1	13.1

n=563

Table IV presents regression model predicting attitudes of law enforcement officers toward Compstat. The researchers conducted a standard multiple regression analysis (OLS) in order to examine the effects of demographic characteristics, police culture, and organizational variables on officers' attitudes toward Compstat. In order to identify multicollinearity problems, tolerance statistics and variance inflation factors (VIF) were reviewed. The collinearity statistics showed that there was no multicollinearity problem because tolerance values were greater than 0.1 and VIF values were less than 10. The results provided a moderate relationship and the overall model was significant, R^2=.593, R^2adj=.576, F (21,476) = 33.087, p<.001. This indicated that seven predictors significantly contributed to the model and the model explained 59% of the variance.

Among the eight dimensions of police culture, supervisory attitude (β=.116), and receptivity to change (β= .066) significantly predicted officers' supportive attitude. The results indicate that law enforcement officers who report higher levels of favorable attitudes toward their supervisors are more likely to support the implementation of Compstat. The results also show that officers who are open to change are more likely to support Compstat. Among organizational variables, perceived effectiveness (β=.432) and agency readiness (β=.283) were found to be significant predictors of officers' supportive attitudes. As perception of effectiveness increase, supportive attitudes also increase. For example, those officers who perceive Compstat as an effective tool are more likely to support Compstat within their agency. The results also indicate that those who believe that their agency is well prepared for the implementation of Compstat have more positive attitudes toward it. However, other police cultural variables did not significantly contribute to the prediction of officers' attitudes. Furthermore, understandability of Compstat was not a significant predictor of officer attitude.

Table 4: OLS regression model

Predictors	B	S.E.	β
Work orientation variables			
Crime Fighting	-.023	.052	-.018
Legal Restrictions	-.004	.038	-.004
Cooperation	.073	.034	.077
Community Policing	.044	.042	.042
Distrust of Citizens	-.006	.041	-.006
Optimism	-.024	.059	-.015
Receptivity to Change	.088*	.047	.066*
Supervisory	.167**	.052	.116**
Organizational variables			
Agency Readiness	.309***	.038	.283***
Effectiveness	.456***	.037	.432***
Understandability	-.061	.210	-.009
Socio-demographics and exp.			
Age	.005	.017	.017
Ranking (corporal and above=1)	-.473	.263	-.065
County Sheriff's Dept.	-1.303***	.282	-.147***
Transit Police Dept.	-.946**	.280	-.115**
County Police Dept. (reference)			
High School (reference)			
Associates Degree	.221	.225	.033
Bachelor's Degree	-.027	.225	-.004
Graduate Degree	1.032	.531	.061
Less than 3 years experience	.684*	.306	.079*
3-10 year experience (reference)			
11-20 year experience	-.447	.278	-.068
More than 21 year experience	-.346	.440	-.041
Constant		-1.792	
R^2		.593	
Adj. R^2		.576	

Notes: *p<.05 **p<.01 ***p<.001.

Among demographic variables, only two demographic variables significantly contributed to the model: departments and work experience. The results suggested that the view of Compstat of those who worked at the sheriff's department and transit police department was significantly different from those who worked at the county police department. The results suggest that those who work at the county police department are more receptive to the Compstat model. Moreover, the view of Compstat was significantly different between those who had less than three years experience and those who had more than three years work experience. The results indicate that those officers with less than three years experience are more likely to support Compstat.

Overall, the study found that supervisory attitude, receptivity to change, agency readiness, perceived effectiveness, departments, and work experience have a

significant effect on officers' attitudes toward Compstat. These variables explained much of the variance in predicting officers' supportive attitude of Compstat. The direction of influence of the two departments on attitude is negative, whereas the direction of influence of agency readiness, perceived effectiveness, receptivity to change, supervisory attitudes, and less than three years work experience on attitude is positive.

Main Interview Findings

First of all, the researchers examined why and how departments adopted the Compstat approach. The top manager of the county police department stated that "they saw success in the departments that implement Compstat and they thought that it would be beneficial to the department." The top manager of the transit police department stated that they adopted Compstat to "have a defined process to address crime." The head of the sheriff's department stated that they adopted Compstat to "develop strategies to decrease crime."

The managers from each department visited at least one other department that implemented Compstat to observe the meetings and receive information from staff. After site visits, the top managers discussed the process and tailored it to their departments. The top managers stated that "Compstat is a major part of the agency's organization and operations." They also stated that they informed sworn officers about the implementation of Compstat through departmental policies. They tried to gain support of officers for implementing Compstat through communication and training. They also stated that only lieutenants, captains, and higher level officers attend meetings regularly; however, several officers from each district attend meetings as observers at the sheriff's and transit police departments.

A number of respondents said that Compstat improves communication and coordination between units. However, some respondents question the effectiveness of Compstat on communication. According to them, it does not improve communication; conversely, it creates an atmosphere which causes infighting between managers. One of the lieutenants pointed out this issue, by stating "it ends up being a blaming area."

Additionally, some officers thought Compstat creates a barrier between officers and managers, but that officers could not express their problems with this and higher managers did not share information with them, instead managers told officers where to go and what to do. One of the officers said that Compstat takes into account only the paperwork and statistics, and that this made their work more difficult. However, in contrast to officers who talk to people in their community and help them with their problems; Compstat does not take any of these activities into account. The officer felt that this did not improve communication because there was a big break in communication between officers and administrators. The officer continued stating that "they forgot what it is like to be a patrol officer.

Their entire structure is how I do my job is based on a piece of paper." In addition, "they (managers) do not talk to us anymore because they think they have everything, because they have Compstat reports. They think they know more. From my perspective, communication between officers and higher ranking officers is even worse now" said one of the interviewees.

Interview participants represented various hierarchical levels within selected agencies. Analyses of qualitative data indicated that top managers and crime analysts supported Compstat and they all found it effective and useful. On the other hand, other participants were ambivalent about Compstat. They neither unanimously supported nor equally opposed the implementation of Compstat. Some of the reasons for disapproving Compstat were implementation style, leadership style, and lack of training, communication, and resources.

Conclusion

First of all, the research indicates that police executives adopted Compstat because of its impact on crime fighting in other departments. In this regard, Rogers' diffusion of innovations theory explains the adoption process in law enforcement agencies. This finding is consistent with those of Weisburd and colleagues (2003) who found that there was a clear indication showing the increasing number of agencies that adopted Compstat over the years. Also, in terms of relative advantage, compatibility, and complexity, officers and managers had mixed feelings about Compstat.

The researchers attempted to identify organizational and individual variables that might influence officers' attitudes because these variables can facilitate the implementation of Compstat. In this study, perceived effectiveness, agency readiness, supervisory, department, experience, and receptivity to change were found to be significant contributors in predicting officers' attitudes. Top managers of the selected agencies attempted to implement Compstat; however, the findings showed that the majority of organization members were not willing to commit to the implementation of Compstat within these agencies.

The results indicate organization members have mixed attitudes toward Compstat. Nearly half of the participants expressed negative attitudes toward Compstat. One possible explanation is that police culture has a significant effect on attitudes. Reuss-Ianni (1983) argued that street cop and management cop cultures exist in police organizations. The findings of the current study are consistent with Reuss-Ianni's study that demonstrates different types of police culture exist among organization members. It was found that street level officers and top managers have different approaches to the police role. Therefore, police administrators should be aware of the attitudes of their officers toward Compstat. They should also be aware of the police culture and other factors affecting officers' attitudes. Thus, top management can develop effective strategies to "win the he-

arts and minds of organization members" (Lurigio & Skogan 1994, p.316) and eliminate barriers for effective implementation.

Top management should understand that their organizations, human behavior, and organization members are affected by organizational change (Hultman, 1998). According to Hultman (1998), management should interact with organization members, attempt to meet their physical and psychological needs, and find a way to motivate them. In addition to cultural variables, agency readiness, which was the second significant contributor in predicting officer attitudes, should be taken into consideration. The agency readiness variable consists of communication, training, and resources. Top managers and middle managers should use communication channels effectively to inform lower ranking officers about the policies of Compstat and receive feedback from them. In addition to middle managers, the agencies should provide training in Compstat to line supervisors and rank-and-file officers. Moreover, managers should allocate sufficient resources for Compstat efforts. Top management should show its commitment to Compstat by allocating sufficient resources. Likewise, through effective communication and training, top management can persuade organization members to support Compstat efforts and commit to organizational change.

This research had some limitations and future research should be conducted to understand law enforcement officers' attitudes and the factors affecting their attitudes. First, the study sites were selected purposefully due to proximity and accessibility. The researcher contacted law enforcement agencies and the ones which were willing to cooperate were selected. These agencies had implemented Compstat at least one year prior to the research and served diverse neighborhoods in rural and urban populations. Therefore, the research findings may not be generalized outside of these agencies. Second, convenience sampling was selected as a nonprobability sampling technique because the researchers were not able to obtain the list of officers from the agencies. Even though the researchers visited each precinct at each roll call to conduct surveys in order to minimize sampling bias and interviewed officers from various ranks, the sampling technique limits the ability to generalize the findings. Third, to make this study manageable, the researchers focused on attitudes and some of the variables measuring police culture.

More research needs to be done to examine officers' attitudes toward Compstat by using different variables because there are still gaps in current knowledge. Second, researchers should replicate this study using various types of agencies across states. Third, attitudinal similarities and differences between communities have not been empirically examined. Research needs to be conducted to compare the attitudes of police officers and community members within communities which implement Compstat and those which do not implement Compstat. Such a comparison would enable us to understand the effects of Compstat on organization members and communities. Finally, a longitudinal study needs to be done in order to examine attitudinal and cultural changes and their impact on officers.

References

Adams, R. E., Rohe, W. M., & Arcury, T. A. (2002). Implementing community-oriented policing: organizational change and street officer attitudes. *Crime and Delinquency*. 48, 399-430.

Ajzen, I. (1985). From intentions to actions: a theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), *Action-control: From Cognition to Behavior* (pp. 11-39). Springer, Heidelberg, Germany.

Ajzen, I., & Cote, N. G. (2008). Attitudes and the prediction of behavior. In W. D. Crano & R. Prislin (Eds.), *Attitudes and Attitudes Change*. (pp. 289-311). New York, Taylor and Francis Group.

Callahan, K. (2007). *Elements of Effective Governance: Measurement, Accountability, and Participation.* Boac Raton, FL: Taylor and Francis Group,.

Carnall, C. A. (1995). *Managing Change in Organizations*. London, Prentice Hall.

Cawsey, T., & Deszca, G. (2007). *Toolkit for Organizational Change*. Thousand Oaks, CA: Sage Publications,.

Chilvers, M., & Weatherburn, D. (2004). The New South Wales Compstat process: its impact on crime. *Australian and New Zealand Journal of Criminology*, 37, 22-48.

Cochran, J. K., Bromley, M. L., & Swando, M. J. (2002). Sheriff's deputies' receptivity to organizational change. *Policing: An International Journal of Policing Strategies and Management*, 25, 507-529.

Cochran, J. K., & Bromley, M. L. (2003). The myth(?) of the police sub-culture. *Policing: An International Journal of Policing Strategies and Management*, 26, 88-117.

Dabney, D. (2010). Observations regarding key operational realities in a Compstat model of policing. *Justice Quarterly,* 27, 28-51.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly,* 13, 319-340.

de Lancer Julnes, P. (2009). *Performance-Based Management Systems: Effective Implementation and Maintenance.* Boca Raton, FL: Taylor and Francis Group.

Edosomwan, J. A. (1996). *Organizational Transformation and Process Reengineering*. Delray Beach, FL: St. Lucie Press.

Fishbein, M., & Ajzen I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.

Innes, J.E. & Simpson, D.M. (1993). Implementing GIS for Planning: Lessons from the History of Technological Innovation. *Journal of American Planning Association*, 59, 230-236.

Jang, H., Hoover, L. T., & Joo, Hee-Jong. (2010). An evaluation of Compstat's effect on crime: the Fort Worth experience. *Police Quarterly,* 13, 387-412.

Kelling, G. L., & Sousa, W. H. (2001). *Do police matter? an analysis of the impact of New York City's police reform. Civic Report 22.* New York: Manhattan Institute for Policy Research.

Kezar, A. J. (2001). *Understanding and Facilitating Organizational Change in the 21st Century: Recent Research and Conceptualizations*. Washington, DC:.ASHE-ERIC Higher Education Reports.

Lurigio, A. J., & Skogan, W. G. (1998). Community policing in Chicago: bringing officers on board. Police Quarterly, l, 1-25.

Martin, T. N., & Huq, Z. (2007). Realigning top management's strategic change actions for ERP implementation: how specializing on just cultural and environmental contextual factors could improve success. *Journal of Change Management,* 7, 121-142.

Mazerolle, L., Rombouts, S., & McBroom, J. (2007). The impact of Compstat on reported crime in Queensland. *Policing: An International Journal of Police Strategies and Management*, 30, 237-256.

Mazerolle, L., Rombouts, S., & McBroom, J. (2011). Compstat in Australia: an analysis of the spatial and temporal impact. *Journal of Criminal Justice*, 39, 128-136.

McDonald, P. P. (2002). *Managing Police Operations: Implementing the New York Crime Control Model-Compstat*. Stamford, CT: Wadsworth.

Moon, B. (2006). The influence of organizational socialization on police officers' acceptance of community policing. *Policing: An International Journal of Police Strategies and Management,* 29, 704-722.

Moore, M. H., & Braga, A. A. (2003). Measuring and improving police performance: the lessons of Compstat and its progeny. *Policing: An International Journal of Police Strategies and Management,* 26, 439-453.

O'Connell, P. E., & Straub, F. (2007). *Performance-Based Management for Police Organizations*. Long Grove, IL: Waveland Press.

Paoline, E. A., Myers, S. M.; & Worden, R. E. (2000). Police culture, individualism, and community policing: evidence from two police departments. *Justice Quarterly,* 17, 575-605.

Paoline, E. A. (2001). *Rethinking Police Culture: Officers' Occupational Attitudes*. New York: LFB Scholarly Publishing LLC.

Paoline, E. A. (2004). Shedding light on police culture: an examination of officers' occupational attitudes. *Police Quarterly*, 7, 205-236.

Rad, A. M. M. (2006). The impact of organizational culture on the successful implementation of Total Quality Management. *The TQM Magazine,* 18, 606-625.

Rashid, M. Z. A., Sambasivan, M., & Rahman, A. A. (2004). The influence of organizational culture on attitudes toward organizational change. *The Leadership and Organization Development Journal*, 25, 161-179.

Rogers, E M. (2003). *Diffusion of Innovations*. (5th ed.) New York, NY: Free Press.

Schein, E. H. (2010). *Organizational Culture and Leadership*. San Francisco, CA: Jossey-Bass.

Silverman, E. B. (1999). *NYPD Battles Crime: Innovative Strategies in Policing*. Boston, MA: Northeastern University Press.

Sparrow, M. K., Moore, M. H., & Kennedy, D. M. (1990). *Beyond 911: A New Era for Policing.* New York: Basic Books.

Spector, B. (2007). *Implementing Organizational Change: Theory and Practice*. Pearson, NJ: Prentice Hall.

Vito, G., Walsh, F., & Kunselman, J. (2005). Compstat: the manager's perspective. *International Journal of Police Science and Management,* 7, 187-196.

Walsh, W. F. (2001). Compstat: an analysis of an emerging police managerial paradigm. *Policing: An International Journal of Police Strategies and Management,* 24, 347-362.

Walsh, W.F., & Vito, G. F. (2004). The meaning of Compstat: analysis and response. *Journal of Contemporary Criminal Justice*, 20, 51-69.

Watson, G., & Johnson, D. (1972). *Social Psychology: Issues and Insights*. Philadelphia, PA: Lippincott.

Weisburd, D., Mastrofski, S. D., McNally, A., Greenspan, R., & Willis, J. J. (2003). Reforming to preserve: Compstat and strategic problem solving in American policing. *Criminology and Public Policy*, 2, 421-456.

Weisburd, D., & Braga, A A. (2006). *Police Innovation: Contrasting Perspectives*. New York: Cambridge University Press.

Westley, W. A. (1970). *Violence and the Police: A Sociological Study of Law, Custom, and Morality.* Cambridge, MA: MIT Press.

Willis, J. J., Mastrofski, S. D., & Weisburd, D. (2003). *Compstat in practice: an in-depth analysis of three cities*. Washington, DC: Police Foundation.

Willis, J. J., Mastrofski, S. D., & Weisburd, D. (2004). Compstat and bureaucracy: a case study of challenges and opportunities for change. *Justice Quarterly,* 21, 463-496.

Wycoff, M. A., & Skogan, W. G. (1994). The effect of a community policing management style on officers' attitudes. *Crime and Delinquency,* 40, 371-383.

Yates, D. L., & Pillai, V. K. (1996). Attitudes toward community policing: a casual analysis. *Social Science Journal*, 33, 193-209.

Yong, K. T., & Pheng, L. S. (2008). Organizational culture and TQM implementation in construction firms in Singapore. *Construction Management and Economics*, 26, 237-248.