Received 17 September 2018
Revised 7 December 2018
Accepted 3 January 2019

Social media and the police

A study of organizational characteristics associated with the use of social media

Xiaochen Hu
Department of Criminal Justice, Fayetteville State University, Fayetteville, North Carolina, USA, and
Nicholas P. Lovrich
School of Politics, Philosophy and Public Affairs, Washington State University, Pullman, Washington, USA

Abstract

Purpose – Most police agencies in the USA make the claim that they use social media, and such use is drawing a great academic attention. Most studies on police use of social media focus on the content of police social media websites. Little research, however, has been conducted regarding what types of police agencies are in fact making use of social media. The purpose of this paper is to fill this gap in the knowledge.
Design/methodology/approach – The study reported here analyzes the 2013 *Law Enforcement Management and Administrative Statistics* (*LEMAS*) data set to identify the principal organizational characteristics of police agencies associated with the use of social media. Binary logistic regression is used to identify significant independent predictors of police use of social media, viewed here as a form of innovation.
Findings – The findings indicate that the workforce size (commissioned and civilian personnel) of a police agency, the level of participation in multi-jurisdictional task forces and the early use of an official agency website to communicate with the public are the predictors of police use of social media.
Research limitations/implications – Three theories pertaining to organizational behavior (i.e. contingency theory, institutional theory, and resource dependency theory), as well as Maguire's (2003) study, are used to establish the theoretical framework for the research reported here.
Originality/value – Viewed as a pioneering study testing organizational theories related to police use of social media, the current study sets forth findings that help deepen the collective understanding of contingency theory, institutional theory and resource dependency theory as frameworks for explaining organizational behavior in policing.

Keywords *LEMAS*, Quantitative methods, Organization-level precursors, Police use of social media
Paper type Research paper

Introduction

Police agencies in the USA use social media as a tool for public safety promotion on a wide basis (Hu *et al.*, 2018a). Given this fact, the International Association of Chiefs of Police (IACP) surveys US police agencies annually regarding the nature of their use of social media. The 2016 IACP survey reports that about 96 percent of the police agencies responding to the survey have used social media (International Association of Chiefs of Police, 2016). The IACP survey indicates that Facebook, Twitter and YouTube are the three social media platforms most widely used by police agencies (International Association of Chiefs of Police, 2015). The 2015 IACP survey indicates that about 94 percent of police agencies were using Facebook, 71.2 percent were using Twitter, and about 40 percent were using YouTube (International Association of Chiefs of Police, 2015).

Founded in 2004, Facebook® is one of the most successful social media platforms in broad use. The statistics on the platform reported by its administrators show that as of the second quarter of 2018 there are an estimated 2.23bn monthly active users, and 1.74bn monthly mobile active users (Statista, 2018a). Twitter® was founded in 2006. As of the first quarter of 2017, there are estimated to be 328m monthly active users on Twitter (Statista, 2018b). Founded in 2005, YouTube® has become the world's largest video-sharing website.

Policing: An International Journal
Vol. 42 No. 4, 2019
pp. 654-670

1363-951X
DOI 10.1108/PIJPSM-09-2018-0139

Statistics reported by its administrators indicate that there were an estimated 1.47bn YouTube viewers in 2017 (Statista, 2018c). Researchers from multiple social science disciplines have examined social media and their collective impact on society, including scholars from political science (e.g. Miller *et al.*, 2015; Sveningsson, 2014), sociology (e.g. Mai *et al.*, 2015; Pribeanu *et al.*, 2015), psychology (e.g. Rae *et al.*, 2015; Roche *et al.*, 2015) and education (e.g. Androutsopoulos, 2015; Miron and Ravid, 2015).

In response to the great increase in the use of social media by police agencies, increased attention to social media has taken place in the criminal justice discipline in recent years. That said, the study of police use of social media remains quite limited, both in its volume and in its scope in criminal justice. The contemporary studies on police use of social media in the main explore what the police tend to do on social media (Crump, 2011; Dai *et al.*, 2017; Heverin and Zach, 2010; Hu *et al.*, 2018a; Kelly, 2014; Lieberman *et al.*, 2013; O'Connor, 2017; Procter *et al.*, 2013; Schneider, 2016). A few studies have focused on the impact of police use of social media (Grimmelikhuijsen and Meijer, 2015) *vis-à-vis* such goals as improving police–public communication (Beshears, 2017) and the solicitation of the public's help in the form of providing timely information relating to crime fighting (Harms and Wade, 2016). Little prior research has explored the matter of the organizational characteristics of those police agencies making use of social media.

The current study seeks to fill this gap in the literature by making use of the 2013 iteration of the widely used *Law Enforcement Management and Administrative Statistics* (*LEMAS*) data set. Using the established theoretical frameworks of contingency theory, resource dependency theory and institutional theory, as well as Maguire's (2003) pioneering study of the impact of agency organizational traits on their behavior, the current study examines four specific research hypotheses related to organizational predictors of police use of social media. The results of binary logistic regression models produce some support for these hypotheses derived from the three theories noted. The policy implications, study limitations and suggested directions of further studies are also discussed at the end of the article.

Literature review

Social media and current research on police use of social media

Police ongoing communication with the public is a vital process (Wessels, 2009). The way police communicate with citizens deserves to be considered a key area of research. Police work has become both more technologically dependent and increasingly closely connected to community-level groups, economic interests, religious entities, social service agencies and civic associations. Accordingly, police/public/stakeholder communication processes have become one of the most central aspects of contemporary policing. Citizen's knowledge of the police comes both from their own direct experiences and from indirect experiences shared by others. A good number of studies have shown that the public's own direct experiences with the police influence their attitudes significantly, and that such experiences are mainly gathered through police–public encounters such as traffic stops and at public events where police provide visible security (Hinds, 2009; Murphy, 2009; Rosenbaum *et al.*, 2005; Schafer *et al.*, 2003; Wells, 2007). Prior studies also tend to show that citizen's indirect experiences with the police come principally from the mass media (Schafer *et al.*, 2003; Weitzer, 2002), and such indirect "mediated" experiences do have an impact upon public perceptions toward the police as well. For example, some studies report that people are more likely to view the police negatively if they view or become appear of confrontational police-citizen encounters (Schafer *et al.*, 2003; Weitzer, 2002).

The police have long struggled to improve the quality and frequency of police/citizen communication. For example, many community-oriented policing strategies have helped shape the public's direct experiences with the police through neighborhood storefront

operations, bike patrols, citizen academies, SRO and DARE programs in schools, and related programs (Chan, 2001). Regarding improving indirect experiences, the establishment of public information officers (PIOs) can be viewed as one of the most promising developments in this area (Surette, 2015). However, these public information outreach efforts are generally costly, and the audience they reach is often rather limited (Wessels, 2009). Accordingly, contemporary social media feature relatively modest costs and a wide reach to a broad audience. As such, pro-active use of social media may be one of the best practices the police can engage in to improve their communication with the public. Social media can help expand people's direct experiences with their police and enhance the potential for police–public interactions (Roberg *et al.*, 2012; Mawby, 2010). Also, social media may help improve people's indirect experiences with the police by disseminating information about favorable police/citizen interactions. With the help of social media, the police can bypass the gate-keeping role of the traditional media (Surette, 2015), they can create their own stories and narratives, and they can broadcast favored themes at a low-cost to a large audience, including the most difficult to reach group, the youth (Ruddell and Jones, 2013; Surette, 2015; Yar, 2012).

The research on police use of social media continues to grow bit-by-bit, but overall this literature remains far too limited given its clear importance. Much of the contemporary research being done on police use of social media focuses primarily on the documentation of what the police tend to do on social media (Crump, 2011; Dai *et al.*, 2017; Heverin and Zach, 2010; Hu *et al.*, 2018a; Kelly, 2014; Lieberman *et al.*, 2013; O'Connor, 2017; Procter *et al.*, 2013; Schneider, 2016). A few prior studies have focused attention on the impact of police use of social media (Grimmelikhuijsen and Meijer, 2015). They have sought to document the impact of the use of social media on goals such as improving police–public communication (Beshears, 2017) and promoting crime solving (Harms and Wade, 2016). For example, Lieberman *et al.* (2013) conducted a content analysis of 1,347 posts across 23 US police departments' Facebook pages posted over a three month period. Their coding scheme features 11 major categories (i.e. tips, crimes, alerts, DUI, officer injured, missing person, recruitment, public relations, direct communication, directions to services and others) and 32 sub-categories (see Lieberman *et al.*, 2013).

Hu *et al.* (2018a) advanced our understanding of what the police do on Facebook in their systematic investigation of more than 7,000 police Facebook posts. They demonstrated that police departments fall into several distinct categories of use based on their own preferred social images. Hu *et al.* (2018a) were able to identify the crime fighter, the traditional cop, the public-relations facilitator and the mixer types of agencies, agency types which could be classified as such from their pattern of postings made on Facebook (see Hu *et al.*, 2018a). Later, Hu *et al.* (2018b) used the same data set to explore public reaction to police Facebook posts. They found that people were more likely to like and make comments on the content of police personnel and police–public relations (Hu *et al.*, 2018b). And people were more prone to like police Facebook posts with pictures and narratives (Hu *et al.*, 2018b).

While there is a relatively little research on police use of social media, among the few studies leading to publication none have documented why (and how) the police start using social media, and then continue using social media as a routine aspect of agency operations. Quite interestingly, two IACP surveys suggest that the vast majority of law enforcement agencies (about 96 percent) in the US taking part in the organization's annual survey had used some social media (International Association of Chiefs of Police, 2016); about 94 percent of these agencies are using Facebook (International Association of Chiefs of Police, 2015). This study endeavors to answer the question of which among these agencies are using of social media, and to explain what particular organizational characteristics are associated with that kind of organizational behavior.

Organizational dynamics theories applied to police agencies

Walker and Katz (2018) identify and summarize three specific theories commonly used in the policing literature to explain the behavior of police organizations. They argue that these particular theories not only provide an account for how the police operate in their varying environments, but they also help to explain how police agencies tend to respond to various types of environmental changes by implementing a timely innovation.

Advocates of contingency theory argue that police organizations are originally created to achieve specific goals, and over time they modify themselves as those core goals to be met change (Walker and Katz, 2018). Based on contingency theory, it is reasonable to believe that police agencies will sometimes change their organizational structure to facilitate the use of an innovation needed to achieve a specific new goal deemed to be important (Nowacki and Willits, 2018). For instance, in order to deal effectively with a growing threat of gang formation and gang-originated violence, a municipal police agency may form a specialized gang unit (Katz, 2001). Another example could be the formal commitment to the use of community-oriented policing. Some researchers have argued that community-oriented policing emerged due in major part to the failure to control crimes by longstanding conventional means (Katz *et al.*, 2002; Walker and Katz, 2018). With respect to police/community relations, when the traditional "have the Chief or Sheriff address the news media" is deemed to be too often counterproductive, the role of PIOs is often established by police agencies to better enable the effective dissemination of news, and the more controlled management of the public image formed of police agencies through the use of "official spokespersons." PIOs are selected and trained to become "media savvy" and have the mission of maintaining an ongoing relationship between the police agency and local news media (Surette, 2015).

Institutional theory, in contrast, holds that police organizations are important social institutions in any community, and as such their operations must be understood within the context of their external social environment (Walker and Katz, 2018). Accordingly, advocates for this theory argue that activities performed by the police do not necessarily reflect their own internal dynamics and calculation of rational action; instead, police activities and police organizational structures are typically shaped in good part by the ideas held by powerful actors in the environment in which they operate. For example, Crank (1994) argues that the use of community-oriented policing often occurs because such action meets the needs of the people in the community who possess the political power to influence the police to take this particular action. The police are ever in need of building and enhancing their legitimacy because they depend heavily upon their local government for resources, and hence such external pressures for change are nearly always carefully assessed and acted upon. An argument made by Hu *et al.* (2018a) suggests that although over 96 percent of police agencies in the USA claim that they have used social media, many of them are not very active with social media assets and demonstrate little ability to make productive use of it; it is reported that this is the case even among many large police agencies (Lieberman *et al.*, 2013). The proponents of institutional theory might suggest that police agencies may use the innovation of social media use in "bridge-building" to their community-based stakeholder "only" when the public stakeholders mobilize and initiate the voicing of a demand for such new digital channels of interaction.

The third theory of resource dependency reflects the view that police organizations must obtain resources from their environment to achieve their goals, and resources can be either in short supply or abundant at any one point in time for specific types of action (Walker and Katz, 2018). For instance, Katz *et al.* (2002) reported that police departments which receive external funding for anti-gang activities were 4.84 times more likely to create a separate gang unit than those which do not have such funding. Studies on community-oriented policing noted that there was a marked increase in community-oriented policing use in the period from 1993 to 1996 due to the ample availability of federal and state funding during this period (Oliver, 2008, 2000;

Zhao *et al.*, 1999). Helms and Gutierrez (2007) reported that there was a very strong connection between federal grant funding and this type of innovation use among US police agencies. Based on resource dependency theory, it is reasonable to assume that police agencies are less likely to use an innovation if the added training and equipment and personnel costs are not going to be subsidized by external resources.

Theory and practice: Organizational factors and social media innovation

In examining the relationship between police agency use of innovations and their organizational characteristics, it is proper to make simultaneous use of all three organizational theories highlighted by Walker and Katz. That is to say, municipal, county and state police agencies are deeply embedded in the communities they serve, so they must demonstrate the ability to respond to both internal and external/environmental factors to maintain their existence (Nowacki and Willits, 2018). Research up to now has established rather clearly that police organizations characterized by greater structural complexity are more likely than those with less structural complexity to make use of an innovation (Damanpour, 1991, 1996; Nowacki and Willits, 2018; Roberts *et al.*, 2012). According to Roberts *et al.* (2012), police agencies with higher levels of structural complexity are more likely to recognize the potential benefits of an innovation, and to have more ability to use the innovation based on a showing of prior success in innovation use. However, it should be noted as well that some scholars argue that formalization, one of several elements of structural complexity, may have both a positive and negative impact on innovation use (Damanpour, 1991). Formal rules and policies in some instances may help reduce resistance in implementing an innovation (Burruss *et al.*, 2010); however, it is also possible that police agencies with higher levels of formalization have less flexibility to innovate (Damanpour, 1991).

Maguire (2003) has proposed the measurement of organization complexity along three key dimensions: vertical differentiation, spatial differentiation and functional differentiation. In police agencies, vertical differentiation is indicated by levels of hierarchy within agencies (Maguire, 2003; Nowacki and Willits, 2018). Spatial differentiation refers to the physical distribution of the police agencies' facilities and personnel (Maguire, 2003; Nowacki and Willits, 2018), and functional differentiation refers to different functional units in the police agencies – such as patrol, investigation, SROs, drug crime and special units for gangs and SWAT (Maguire, 2003; Nowacki and Willits, 2018). Using the 2013 *LEMAS* data, Nowacki and Willits (2018) created indicators of these three types of differentiation, and they use them to test their prediction of police use of body-worn cameras. The findings they report suggest strongly that functional differentiation is positively related to body-worn cameras usage (Nowacki and Willits, 2018). Specifically, if the police agency has more specialized units, it is more likely to use body-worn cameras than similar sized agencies lacking such differentiation (Nowacki and Willits, 2018).

Department size has proven to be an indicator of innovation use as well, partially because of its close relationship with departmental structural complexity (Nowacki and Willits, 2018; Roberts *et al.*, 2012). However, the question of size effects is not completely settled. Some research has suggested that larger police agencies are indeed more likely to be innovative than smaller agencies. For example, in their analysis of terrorism preparedness, Roberts *et al.* (2012) report that police agency size is positively related to terrorism preparedness by actions such as establishing specialized terrorism units and conducting pro-active terrorism-related community outreach. Carter *et al.* (2014) find that department size is likewise positively related to information sharing innovation. Morabito (2010) also reports a positive relationship between department size and likelihood of using community-oriented policing. On the other hand, some studies suggest that innovations may be better implemented in smaller police agencies. For instance, in their analysis of use of body-worn cameras, Nowacki and Willits (2018) discover a significant negative relationship between departmental size (measured by the natural log of the budget) and the use of body-worn cameras.

Police agencies' early use of new technologies may also relate to their interests in implementing related technologies in the future (Nowacki and Willits, 2018; Roberts *et al.*, 2012). For example, Weisburd and Lum (2005) find that large police agencies were equipped with computerized crime mapping innovation resources earlier than small police agencies, and this early use is strongly related to the use of police crime-fighting strategies such as crime prevention through environmental design, hotspots policing and saturation patrolling. In their insightful analysis of police use of body-worn cameras, Nowacki and Willits (2018) report that technologies used by police agencies to engage with communities (e.g. social media platforms and interactive websites) are positively and significantly related to their early use of body-worn cameras.

The advocates of the institutional theory might suggest that community pressure to make use of innovations in use elsewhere may be a stimulus to police adopt some innovations (Nowacki and Willits, 2018). For example, Katz's (2001) study on the establishment of police gang units found that although gang activities are only minor matters of police concern in some cities that maintain such units, the creation of a gang unit is often driven by the pressure exerted upon the police by influential elements in their community. Consequently, it is reasonable to assume that in the area of social media use, it is likely that police agencies which emphasize community-oriented policing as a major part of their philosophy of law enforcement are more likely than non-COP agencies to use social media as a tool of community engagement as a reflection of politically potent community pressures to do so (Hu, 2016).

Linking organizational factors to police use of social media

The current study explores the relationship between police organizational factors and their use of social media. Based on the contingency theory (Walker and Katz, 2018) and Maguire's (2003) theory on organizational complexity (also see Damanpour, 1991; Nowacki and Willits, 2018; Roberts *et al.*, 2012), the following hypothesis tested here is as follows:

H1. Police agencies with greater organizational complexity (e.g. vertical differentiation and functional differentiation) are more likely to use social media than their less complex counterparts.

Based on the resource dependency theory (Walker and Katz, 2018), department size is another likely indicator of using innovation. It is suggested that larger police agencies often have more slack resources than smaller agencies (Oliver, 2008; Oliver, 2000). Since many studies investigating organizational correlates to innovation find that larger police agencies are more likely to innovate (Carter *et al.*, 2014; Morabito, 2010; Nowacki and Willits, 2018; Roberts *et al.*, 2012), the following hypothesis tested is as follows:

H2. Police agencies with larger workforces are more likely to use social media than police agencies with fewer personnel.

Prior studies also suggest that the technologies currently being used by police agencies may affect the likelihood of using additional new technologies (Nowacki and Willits, 2018; Roberts *et al.*, 2012; Weisburd and Lum, 2005). Accordingly, the following hypothesis tested here is as follows:

H3. Police agencies which are using information-based and internet-based technologies are more likely to make use of social media.

Finally, in line with the arguments set forth in support of the institutional theory regarding the importance of the external social environment in understanding the actions of local police agencies (Katz, 2001; Nowacki and Willits, 2018; Walker and Katz, 2018), we test a fourth hypothesis relating to COP. Previous studies have found that many police agencies use Facebook as a tool for engaging the public online, and many Facebook posts are community policing-related in content (e.g. Hu *et al.*, 2018a, b; Lieberman *et al.*, 2013;

Procter *et al.*, 2013). Accordingly, we treat police use of social media here as "an online community-oriented policing effort" as suggested by Hu (2016). Therefore, the following hypothesis tested here reads as follows:

H4. Police agencies, which emphasize community-oriented policing, are more likely to use social media than those which do not do so.

Methods

Data

The data used here are derived from the 2013 *LEMAS* data set. This valuable data set has been used by many researchers to study police organizational structure and related topics (e.g. Giblin and Nowacki, 2018; Nowacki and Willits, 2018; Willits and Nowacki, 2016; Willits, 2014). The *LEMAS* data set has been identified as the second most frequently used data set in the criminal justice discipline (Matusiak *et al.*, 2014). The *LEMAS* research team periodically gathers information from police agencies in the USA using a cross-sectional survey design. The 2013 *LEMAS* iteration of the nationwide survey involved the distribution of survey questionnaires to 3,272 police agencies, and 2,826 of those responded, generating an overall institutional response rate of 86 percent (United States Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, 2015). Among these 2,826 police agencies surveyed, 2,059 of them are municipal police agencies, 717 are Sheriff's offices and 50 of them are state police agencies (United States Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, 2015). After excluding cases featuring missing values, the final database analyzed in this study contains 1,499 US police agencies, including 1,091 municipal police agencies, 378 Sheriff's offices and 30 state police agencies.

Dependent variables

Since the International Association of Chiefs of Police (2015) indicates that the most frequently used social media platforms are Facebook, Twitter and YouTube, the current study employs police use of Facebook, Twitter and YouTube as its dependent variables. Each dependent variable is coded as a dichotomous variable (1 = yes and 0 = no). The 2013 *LEMAS* asked the police agencies surveyed if they were using each of these forms of social media in 2012. The main reason of not combing all three dependent variables into one variable is that previous studies have suggested that different social media platforms may have different functions, and police agencies may use different social media platforms for different purposes. For example, Lieberman *et al.* (2013) argue that Facebook can be better used as "a two-way dialogue between the police and the public" (p. 457) because it can hold long messages in one post, while Twitter can be better used as a tool of sending immediate warnings since it limits characters in one post. Also, it is reasonable to believe that police agencies will put different amounts of efforts on creating a Facebook post, sending out a Twitter message or posting a YouTube video.

Independent variables

Four groups of independent variables are used to test the four hypotheses set forth above. The first group of independent variables pertains to organizational complexity. Inspired by Nowacki and Willits' (2018) study, vertical differentiation is measured by the gap between the average salaries of chief executives and those of entry-level officers; vertical differentiation is a continuous variable. The larger the gap, the greater the degree of vertical differentiation. Occupational differentiation is represented by the percentage of agency workforce occupied by civilian employees (Nowacki and Willits, 2018; Willits, 2014). This too is a continuous variable; the higher the percentage of civilian employees, the greater the occupational differentiation. As in the case of Nowacki and Willits' (2018) study, functional

differentiation is measured by the number of specialized units in operation in the agency: this also is a continuous variable. The current study also uses agency participation in multi-jurisdictional task forces (1 = yes and 0 = no) to supplement the estimation of organizational complexity of police agencies.

The second group of independent variables measures the size of the police agency, and the number of sources of funding provided to the agency. The size of the police agency is represented by the size of the overall workforce – that is, the total number of sworn and non-sworn employees. Because the distribution of the total number of employees is highly skewed (Kurtosis = 1,127.147), the natural log is applied (Kurtosis = 0.010) to reduce skewness and achieve normality within acceptable limits of ±2 (also see George and Mallery, 2016; Trochim and Donnelly, 2006). Four variables pertaining to funding sources are used, each being dichotomous (1 = yes and 0 = no). Those survey questions ask if the police agency is receiving either ongoing allocations or grants from municipal, county, state or federal governmental sources.

The third group of independent variables indicates the presence of information technology being used by the agency. First, the question of whether civilian employees perform information technology duties is observed, and this is coded as a dichotomous variable (1 = yes and 0 = no). One scale is created by combining four items on how their agency website is displaying the agency's crime information; the four *LEMAS* items relate to jurisdiction-wide summaries of crime statistics, beat-level summaries of crime statistics, crime mapping regarding specific types of crimes (e.g. auto thefts) and crime mapping regarding registered sex offenders. This multi-item index reflects current police agency usages of their official websites. This measure of information dissemination to the public has a moderate degree of scale reliability (Cronbach's $\alpha = 0.776$). Another additive scale is created by summing three *LEMAS* items (reporting crime through the website, posting questions on the website and filing complaints against police officers through the website) to capture the extent to which the police agency uses its official website to collect timely information from the public (Cronbach's $\alpha = 0.674$).

The final group of independent variables derived from the 2013 *LEMAS* data set measures the extent of a police agency's implementation of community-oriented policing. Previous studies (e.g. Hu *et al.*, 2018a, b; Hu, 2016; Katz, 2001; Nowacki and Willits, 2018; Walker and Katz, 2018) suggest that police agencies post many types of community-related information on their Facebook pages. Three dichotomous variables are derived from the *LEMAS* data set: whether the agency has a written community-oriented policing component in its mission statement (1 = yes and 0 = no); whether the agency provides at least 8 h of community-oriented policing training for its recruits (1 = yes and 0 = no); and whether the agency has at least eight hours of in-service community-oriented policing training (1 = yes and 0 = no). Additionally, a question on community surveys indicates if the police agency utilizes information derived from surveys of residents (1 = yes and 0 = no). We assume that if a police agency has a clear statement on community-oriented policing and provides community-oriented policing training to its police officers, it may be more likely to use social media since social media clearly is a useful tool for public engagement (e.g. Hu *et al.*, 2018a). Finally, one control variable is used to categorize the police agencies into one of three categories: municipal police agency, Sheriff's office and state police agency.

Analytical strategies

Descriptive statistics are reported here to get a general picture of the use of social media in policing, and regression analysis is used to identify significant independent predictors of police use of social media viewed as a form of innovation. Specifically, binary logistic regression is used because all three dependent variables are dichotomous in nature. Coefficients and odds ratios are reported as the principal results of the analysis.

Findings

Table I displays the main descriptive statistics needed to gain an overall impression of social media use by police. Almost three out of four (73 percent) police agencies in this sample are local police agencies. About 25 percent of them are Sheriff's offices, and 30 state police agencies make up the balance. Among these agencies, 68 percent report use of Facebook, 38 percent use Twitter and 20 percent have YouTube accounts. On the average, these police agencies have four specialized units. Almost nine-in-ten (87 percent) of the agencies have participated in multi-jurisdictional task forces. On the average, 28 percent of the agencies' workforces are civilian employees. The salary gap between entry-level officers and chief executives varies greatly, ranging from a low of $6,000 to a high of $324,000 – with an average pay gap of $58,000.

Nearly three quarters (74 percent) of the police agencies in the sample had received grants from one or more municipal government agencies, and about half of them receive grants from one or more federal government agencies. Regarding technology preparation, more than a third (37 percent) report that they have civilian employees who perform information technology duties. Some police agencies have utilized their official agency websites to provide information (e.g. crime statistics and sex offender information) to the public and to collect intelligence from the public. The substantial majority of these agencies (81 percent) have written mission statements which refer to their commitment to community-oriented policing as a philosophy of law enforcement. Also, over seven-in-ten of them (72 percent) provide community-oriented policing training to new recruits, and about two-thirds of them provide a minimum of 8 h of

Variables	*n* (%)	Min.	Max.	Mean	SD
Dependent variables					
Use of Facebook	1,016 (67.8)	0	1	0.68	0.47
Use of Twitter	573 (38.2)	0	1	0.38	0.49
Use of YouTube	302 (20.1)	0	1	0.20	0.40
Independent variables					
Organizational complexity					
Number of special units	–	0	137	3.85	5.85
Multi-jurisdictional task forces	1,301 (86.8)	0	1	0.87	0.34
Percentage of civilian employees	–	0	0.88	0.28	0.16
CEO/officer Salary gap	–	6	324	57.63	29.94
Size of police agencies					
Number of personnel (natural log)	–	1	10	4.70	1.33
Funding sources					
Municipal	1,102 (73.5)	0	1	0.74	0.44
City	573 (38.2)	0	1	0.38	0.49
State	724 (48.3)	0	1	0.48	0.50
Federal	764 (51.0)	0	1	0.51	0.50
Technology preparation					
Civilian IT duties	555 (37.0)	0	1	0.37	0.48
Deliver information to the public	–	0	4	1.49	1.48
Gather information from the public	–	0	3	1.77	1.11
Community policing					
Written COP statement	1,214 (81.0)	0	1	0.81	0.39
COP training for recruits	1,085 (72.4)	0	1	0.72	0.45
COP in-service training	994 (66.3)	0	1	0.66	0.47
Community survey	552 (36.8)	0	1	0.37	0.48
Types of police agencies					
Local police agency	1,091 (72.8)	0	1	0.73	0.45
Sheriff's office	378 (25.2)	0	1	0.25	0.43
State police agency	30 (2.0)	0	1	0.02	0.14

Table I.
Descriptive statistics

Note: $n = 1{,}499$

in-service training on community-oriented policing over the course of a year. Additionally, over a third of the agencies (37 percent) report that they have utilized some information from surveys of residents in police planning and in policy and program development.

Binary logistic regression is used to explore the relationships between the three dependent variables and the various independent variables. Table II sets forth the results of a set of binary logistic regression analyses. The model of police use of Facebook is statistically significant ($\chi^2 = 150.51$, $p < 0.00$), with about 13 percent of the variance in the dependent variable being explained by the several independent variables. Police agencies which participate in multi-jurisdictional task forces are 1.64 times more likely to use Facebook compared to those that do not. Larger agencies with many personnel are more likely to use Facebook than are smaller agencies with fewer personnel. Regarding technology preparation, the predicted outcome that police agencies already using their websites to distribute information to the public would be more likely to use Facebook than those that do not; such agencies are 16.7 percent more likely of doing so. Similarly, compared to police agencies which are not using their official websites to collect information from the public, police agencies using their websites to gather citizen information are 1.18 times more likely to also make use of Facebook. Also, police agencies that utilize information from surveys on residents are 1.44 times more likely to use Facebook than those agencies that do not use such information.

Variables	Use of Facebook *B*	SE	OR	Use of Twitter *B*	SE	OR	Use of YouTube *B*	SE	OR
Organizational complexity									
Number of special units	0.045	0.027	1.05	−0.007	0.013	0.993	0.010	0.016	1.010
Multi-jurisdictional task forces	0.494	0.169	1.639**	0.495	0.222	1.640*	1.149	0.438	3.156**
Percentage of civilian employees	−0.625	0.462	0.535	0.585	0.477	1.795	−0.224	0.580	0.799
CEO/officer Salary gap	−0.004	0.003	0.996	0.001	0.003	1.001	−0.005	0.003	0.995
Size of police agencies									
Number of personnel (natural log)	0.223	0.090	1.250*	0.541	0.087	1.718***	0.693	0.104	2.000***
Funding sources									
Municipal	0.023	0.187	1.024	0.018	0.186	1.018	−0.094	0.212	0.910
City	−0.056	0.177	0.946	0.224	0.172	1.252	0.135	0.198	1.145
State	−0.001	0.159	0.999	0.072	0.165	1.075	−0.127	0.206	0.881
Federal	0.070	0.163	1.073	0.199	0.167	1.220	0.592	0.213	1.808**
Technology preparation									
Civilian IT duties	−0.094	0.143	0.910	−0.053	0.139	0.948	0.271	0.166	1.311
Deliver information to the public	0.154	0.046	1.167**	0.184	0.043	1.202***	0.200	0.053	1.222***
Gather information from the public	0.166	0.055	1.180**	0.142	0.058	1.153*	0.162	0.074	1.176*
Community policing									
Written COP statement	0.061	0.157	1.063	0.230	0.173	1.259	−0.026	0.218	0.974
COP training for recruits	0.113	0.157	1.119	0.185	0.169	1.203	0.173	0.219	1.189
COP in-service training	0.045	0.149	1.049	−0.039	0.154	0.962	0.067	0.190	1.069
Community survey	0.367	0.133	1.443**	0.199	0.127	1.220	0.231	0.154	1.259
Types of police agencies									
Local police agency	−0.690	0.616	0.502	0.124	0.485	1.133	0.441	0.495	1.553
Sheriff's office	−0.454	0.607	0.635	−0.813	0.475	0.444	−0.044	0.486	0.957
State police agency (reference)									
Constant	−0.589	0.703	0.555	−4.476	0.622	0.009***	−7.309	0.787	0.001***
Model fit	$\chi^2 = 150.51$***, $r^2 = 0.134$			$\chi^2 = 321.71$***, $r^2 = 0.263$			$\chi^2 = 327.62$***, $r^2 = 0.310$		

Notes: $n = 1{,}499$. OR, odds ratio. No variable has VIF greater than 3. *,**,***Significant at 0.05; 0.01; 0.001 α levels, respectively

Table II. Binary logistic regressions on police use of social media

The multivariate model for police use of Twitter is also statistically significant ($\chi^2 = 321.71$, $p < 0.00$). The R^2 is 0.26, indicating that about a quarter (26 percent) of the variance in this dependent variable can be explained by the set of independent variables. These findings are similar to those reported in the Facebook model with respect to multi-jurisdictional task force involvement; the odds of using Twitter are 64 percent greater among agencies engaged in multi-jurisdictional task forces. The number of personnel in the police agency is likewise another significant indicator. Large police agencies are more likely to use Twitter than small police agencies. Also, compared to police agencies which do not utilize their websites to disseminate information to citizens, agencies that use their websites to disseminate information of varying kinds and collect information from their citizens are more likely to use Twitter.

Lastly, the model of police use of YouTube is also statistically significant ($\chi^2 = 327.62$, $p < 0.00$). Compared to police agencies not participating in multi-jurisdictional task forces, police agencies that do participate are 3.16 times more likely to use YouTube. Just as in the case of Facebook and Twitter use, this model also indicates that larger police agencies are more likely to use YouTube than smaller police agencies. The odds of using YouTube are 80.8 percent greater in agencies with federal grants than those without federal grants. Similarly, police agencies using their official websites to send information to the public are more likely to use YouTube than those which do not do so. Compared to police agencies which do not collect information from the public through their official website, police agencies doing so are 1.18 times more likely to use YouTube.

The results of three logistic regressions partially support the first hypothesis holding that organizational complexity is associated with police use of social media. While the indicators of vertical differentiation, occupational differentiation and functional differentiation (also see Nowacki and Willits, 2018) are not significant predictors of use, the indicator of whether police agencies participate in multi-jurisdictional task forces is significant across all three binary logistic regression models. The prediction set forth in the second hypothesis, holding that large police agencies with more resources are more likely to use social media, finds support here in this study. The size of the agency workforce is a positive and significant indicator of police use of social media across all three models.

The third hypothesis predicts that police agencies with ongoing information technology operations are more likely to use social media than those which do not. The study reported on here only partially supports this hypothesis. Police agencies that are currently using their websites to communicate with the public are indeed more likely to use all three kinds of social media. However, it should be noted that having civilian employees responsible for IT duties is not a significant predictor. Finally, the fourth hypothesis gains very little support from the analysis reported here. Only one of the several variables related to community-oriented policing proves to be a statistically significant predictor in the model of police use of Facebook.

Discussion and conclusion

The area of police use of social media has attracted the attention of many criminal justice researchers in the recent years. Over the period 2010–2018 studies have explored police use of social media with content analysis, case study approaches and quantitative analyses of various kinds (e.g. Beshears, 2017; Crump, 2011; Dai *et al.*, 2017; Grimmelikhuijsen and Meijer, 2015; Harms and Wade, 2016; Heverin and Zach, 2010; Hu *et al.*, 2018a, b; Kelly, 2014; Lieberman *et al.*, 2013; O'Connor, 2017; Procter *et al.*, 2013; Schneider, 2016). Generally speaking, researchers have been interested primarily in what the police do on social media. Very little research, however, has investigated the organizational characteristics associated with police active use of social media.

The current study endeavors to fill in this research gap by analyzing the 2013 *LEMAS* data set to determine which elements of organizational setting are predictive of use of social media by police. The analyses reported upon here indicate that organizational complexity has only a limited impact on police use of social media. None of the three innovative

indicators of organizational complexity developed in the Nowacki and Willits's (2018) study (i.e. vertical differentiation, functional differentiation and occupational differentiation) have a statistically significant relationship with police use of social media. However, whether the police participate in multi-jurisdictional task forces is indeed a significant indicator of police use of social media. A possible explanation for this is that police agencies which have multi-jurisdictional task forces may wish to communicate to their respective publics that they are a valued agency held in esteem by neighboring police agencies. It is, of course, efficient to broadcast this type of legitimacy- enhancing information through social media to promote a favorable social image (also see Hu *et al.*, 2018a).

The findings of the current study lend some support to resource dependency theory in explaining police use of social media (Walker and Katz, 2018). The resources tested by the current study entail two distinct components, one regarding workforce size and one regarding information technology. Similar to some previous findings indicating that larger police agencies are more likely to innovate than smaller agencies (Carter *et al.*, 2014; Morabito, 2010; Nowacki and Willits, 2018; Roberts *et al.*, 2012), the current study reports that more sizeable police agencies are more likely to make use of social media than their smaller counterparts. A rather reasonable explanation is that it is easier for large police agencies to employ a group of agency employees who can be brought together to explore the uses of social media in policing than smaller police agencies wherein such a "critical mass" is not present. The lack of effect of the variable "civilian employees perform IT duties" suggests that sworn police officers such as PIOs are the likely "lightning rods" for the use of social media. Regarding the presence of information technology resources, two variables investigated entailing agency use of official websites to broadcast information to the public and use of the website to gather information from the public lend support to the Nowacki and Willits (2018) argument. In their study on police use of body-worn cameras, they speculate that once a police agency is willing to use some new tools in policing, it is likely they will continue using them and make use of additional new tools in the future. Taken together, if a police agency is already blessed with a group of agency employees using its official website to communicate with the public, it is not difficult for them to establish social media accounts and start communicating with the public through those media as well.

In Hu's (2016) work, he proposes that police use of social media can be viewed as a form of electronic community-oriented policing (E-COP). In terms of institutional theory, Walker and Katz (2018) suggest that community pressure may be an important reason why the police start to make some changes, such as using social media. Once a police agency comes to understand that the majority of people it serves are making progressively more use of social media, and come to appreciate the potential benefits of using social media to reach difficult to engage populations such as the youth (see Beshears, 2017; Harms and Wade, 2016; Hu, 2016; Hu *et al.*, 2018a), police agencies will likely to be pressured by citizens and elected officials to use social media to communicate more effectively with community members.

Considering Hu's (2016), E-COP concept and the logic underlying institutional theory (Walker and Katz, 2018), this study tests the relationship between community-oriented policing efforts and police use of social media. The results, however, provide only limited support for the existence of this connection. In all three models only one COP-related variable – the police utilize information from surveys on the public – is shown to be related to police use of the specific social media platform of Facebook. A possible explanation for this unexpected outcome is that the police may simply pull out information from their community surveys and post it on their Facebook pages. It seems this finding is at odds with Hu's (2016) advocacy of the E-COP concept. However, the 2013 *LEMAS* data set is based on surveys of police organizations conducted back in 2012. According to IACP Social Media Surveys done in 2010 and in 2012, the rate of police agency use of social media increased dramatically afterward. For Facebook, the adoption percentage was 66 percent in 2010 and 90 percent in 2012. For Twitter, the adoption percentage was 30 percent in 2010 and 50 percent in 2012. For YouTube, the adoption

percentage was 18 percent in 2010 and 37 percent in 2012 (International Association of Chiefs of Police, 2010, 2012). Consequently, it is reasonable to believe that when the 2013 *LEMAS* was conducted many US police agencies had either just started using social media or were in the process of deciding on their agency policies regarding social media. According to Rogers's (2003) theory of diffusion of innovations, the routinization of innovation requires a substantial time beyond that of initial adoption. Given these considerations, whether police agencies make use of social media as tools for promoting community-oriented policing (see Hu, 2016) cannot be fully determined by the data used in the current study.

These findings give rise to several policy implications for police agencies. First, since the relationship between police organizational complexity and police use of social media is only partially supported, there is ample room for small, less complex police agencies to use social media innovations in their operations. Second, a police agency's technology preparedness as evidenced by active use of its official website is predictive of police use of social media. It follows that establishing and maintaining social media channels to the public does require some police agency investment in the form of the allocation of personnel time, appropriate training and associated IT hardware and software resources. Unlike police official websites, however, social media channels do not require the police agency to hire someone to build them and maintain them. Using existing tools developed by social media companies, the police can do many things to build effective communication bridges to the communities and stakeholders they serve (see Dai *et al.*, 2017; Hu *et al.*, 2018a).

The significant relationship between police agency size of workforce and the use of social media suggests that there may be a certain floor *vis-à-vis* personnel on hand. However, it is also the case that previous studies report that larger police agencies are often not more active on social media than smaller ones (Lieberman *et al.*, 2013). Relatively small police agencies can also be very successful on social media (Hu *et al.*, 2018a). Taken together, these findings suggest it is more an active desire to make use of social media to enhance communication with the public than a matter agency size of workforce that occasions use of social media in policing.

The study reported here has some clear limitations, ones which lead to a need for future research. First, as Nowacki and Willits (2018) point out in their study using the 2013 *LEMAS*, the measurement of police organizational complexity in that data set cannot fully reflect Maguire's (2003) argument on vertical differentiation, spatial differentiation or functional differentiation. Specifically, the 2013 *LEMAS* data set does not include variables related to the spatial differentiation (also see Nowacki and Willits, 2018). Future research should use data on additional police organizational variables, including spatial differentiation.

Second, the proponents of resource dependency theory and institutional theory both correctly note that environmental contextual variables are quite important for understanding organizational structural changes (Crank, 1994; Helms and Gutierrez, 2007; Katz *et al.*, 2002; Walker and Katz, 2018). Although the study reported here indirectly measures environmental variables by taking into consideration actions related to community-oriented policing, the direct measurement of environmental contextual variables remains lacking. Future research should make use of data on community characteristics of the communities served – e.g., degree of access to high bandwidth internet, mean educational attainment, UCR and NIBRs crime reports, racial and ethnic diversity – by the *LEMAS* agencies studied.

Third, police organizational variables likely interact with environmental variables (Walker and Katz, 2018), a fact which leads to another limitation in the current study insofar as it does not examine potentially noteworthy interactions. Future research should include the investigation of such likely interaction effects. Future research ought to involve use of alternative statistical methodologies capable of capturing and analyzing these interactions, such as is done with structural equation modeling.

Fourth, as Nowacki and Willits (2018) rightfully observe, the *LEMAS* data set only selects a sample of police agencies operating in the USA. Since any social media pages used

by the police can be viewed from almost everywhere in the world (see Hu, 2016; Hu *et al.*, 2018a), a global comparative study should be conducted in the future to explore other factors such as economic status, internet availability, cultural values and mores or other contextual factors have an impact upon police use of social media.

Finally, the 2013 *LEMAS* measures police use of social media up to 2012. It is likely that police agencies today can, and likely are, doing much more on social media than they were in earlier years. The technology providing for the use of social media has continued to mature, and now offers a wider range of options for adoption and systematic use. The patterns of predictive organizational traits reported in the current study may vary somewhat from those to be found in the next iterations of the *LEMAS* data set. The replication of this study with future *LEMAS* data is clearly most called for and highly recommended. However, the current study's findings are still valuable because some significant relationships between police use of social media and police organizational characteristics are documented. The findings reported here can help researchers to study new social media platforms that may be used by the police in the future more effectively.

In conclusion, viewed as a pioneering study testing theories related to police use of social media the current study sets forth findings that help deepen our collective understanding of contingency theory, institutional theory, and resource dependency theory as frameworks for explaining organizational behavior in policing. It is our sincere hope that the research reported here will likewise prove of benefit to the IACP and to police agencies in the USA and elsewhere in the world, promoting the goal of making the best possible use of social media in law enforcement agencies' ongoing effort to serve and protect their communities.

References

Androutsopoulos, J. (2015), "Networked multilingualism: some language practices on Facebook and their implications", *International Journal of Bilingualism*, Vol. 19 No. 2, pp. 185-205.

Beshears, M.L. (2017), "Effectiveness of police social media use", *American Journal of Criminal Justice*, Vol. 42 No. 3, pp. 489-501.

Burruss, G.W., Giblin, M.J. and Schafer, J.A. (2010), "Threatened globally, acting locally: Modeling law enforcement homeland security practices", *Justice Quarterly*, Vol. 27 No. 1, pp. 77-101.

Carter, J.G., Phillips, S.W. and Gayadeen, S.M. (2014), "Implementing intelligence-led policing: an application of loose-coupling theory", *Journal of Criminal Justice*, Vol. 42 No. 6, pp. 433-442.

Chan, J.B.L. (2001), "The technological game: how information technology is transforming police practice", *Criminal Justice*, Vol. 1 No. 2, pp. 139-159.

Crank, J.P. (1994), "Watchman and community: myth and institutionalization in policing", *Law & Society Review*, Vol. 28 No. 2, pp. 325-352.

Crump, J. (2011), "What are the police doing on Twitter? Social media, the police and the public", *Policy & Internet*, Vol. 3 No. 4, pp. 1-27.

Dai, M., He, W., Tian, X., Giraldi, A. and Gu, F. (2017), "Working with communities on social media: varieties in the use of Facebook and Twitter by local police", *Online Information Review*, Vol. 41 No. 6, pp. 782-796.

Damanpour, F. (1991), "Organizational innovation: a meta-analysis of effects of determinants and moderators", *Academy of Management Journal*, Vol. 34 No. 3, pp. 555-590.

Damanpour, F. (1996), "Organizational complexity and innovation: developing and testing multiple contingency models", *Management Science*, Vol. 42 No. 5, pp. 693-716.

George, D. and Mallery, P. (2016), *IBM SPSS Statistics 23 Step by Step: A Simple Guide and Reference*, 14th ed., Routledge, New York, NY.

Giblin, M.J. and Nowacki, J.S. (2018), "Organizational decline and fiscal distress in municipal police agencies", *Police Quarterly*, Vol. 21 No. 2, pp. 171-195.

Grimmelikhuijsen, S.G. and Meijer, A.J. (2015), "Does Twitter increase perceived police legitimacy?", *Public Administration Review*, Vol. 75 No. 4, pp. 598-607.

Harms, J. and Wade, L. (2016), "Reconnecting with the public: police use of social media", *The Journal of Law Enforcement*, Vol. 6 No. 1, pp. 1-10.

Helms, R. and Gutierrez, R.S. (2007), "Federal subsidies and evidence of progressive change: a quantitative assessment of the effects of targeted grants on manpower and innovation in large US police agencies", *Police Quarterly*, Vol. 10 No. 1, pp. 87-107.

Heverin, T. and Zach, L. (2010), "Twitter for city police department information sharing", *Proceedings of the American Society for Information Science and Technology*, Vol. 47 No. 1, pp. 1-7.

Hinds, L. (2009), "Public satisfaction with police: the influence of general attitudes and police-citizen encounters", *International Journal of Police Science and Management*, Vol. 11 No. 1, pp. 54-66.

Hu, X. (2016), "Moving toward the electronic community-oriented policing era: content and strategies of police use of social media", PhD dissertation, Sam Houston State University, Huntsville, TX, available at: https://search.proquest.com/docview/1860917926?pq-origsite=gscholar (accessed December 3, 2018).

Hu, X., Rodgers, K. and Lovrich, N.P. (2018a), "'We are more than crime fighters:' social media images of police departments", *Police Quarterly*, Vol. 21 No. 4, pp. 544-572.

Hu, X., Rodgers, K. and Lovrich, N.P. (2018b), "Public preferences toward police Facebook posts: a macro-level analysis", *Police Practice and Research: An International Journal*, pp. 1-19, available at: https://doi.org/10.1080/15614263.2018.1531753

International Association of Chiefs of Police (2010), *IACP Social Media Survey*, IACP, Alexandria, VA, available at: www.iacpsocialmedia.org/wp-content/uploads/2017/01/Survey-Results-Document.pdf (accessed December 3, 2018).

International Association of Chiefs of Police (2012), *IACP Social Media Survey*, IACP, Alexandria, VA, available at: www.iacpsocialmedia.org/wp-content/uploads/2017/01/2012SurveyResults.pdf (accessed December 3, 2018).

International Association of Chiefs of Police (2015), *IACP Social Media Survey*, IACP, Alexandria, VA, available at: www.iacpsocialmedia.org/wp-content/uploads/2017/01/FULL-2015-Social-Media-Survey-Results.compressed.pdf (accessed December 3, 2018).

International Association of Chiefs of Police (2016), *IACP Social Media Survey*, IACP, Alexandria, VA, available at: www.theiacp.org/Portals/0/documents/pdfs/2016-law-enforcement-use-of-social-media-survey.pdf (accessed December 3, 2018).

Katz, C.M. (2001), "The establishment of a police gang unit: an examination of organizational and environmental factors", *Criminology*, Vol. 39 No. 1, pp. 37-74.

Katz, C.M., Maguire, E.R. and Roncek, D.W. (2002), "The creation of specialized police gang units: a macro-level analysis of contingency, social threat and resource dependency explanations", *Policing: An International Journal of Police Strategies & Management*, Vol. 25 No. 3, pp. 472-506.

Kelly, A. (2014), "Managing the risks of public discourse on the New South Wales police force Facebook site", *Salus Journal*, Vol. 2 No. 1, pp. 19-42.

Lieberman, J.D., Koetzle, D. and Sakiyama, M. (2013), "Police departments' use of Facebook: Patterns and policy issues", *Police Quarterly*, Vol. 16 No. 4, pp. 438-462.

Maguire, E.R. (2003), *Organizational Structure in American Police Agencies: Context, Complexity, and Control*, State University of New York Press, Albany, NY.

Mai, L.S., Freudenthaler, R., Schneider, F.M. and Vorderer, P. (2015), "'I know you've seen it!' Individual and social factors for users' chatting behavior on Facebook", *Computers in Human Behavior*, Vol. 49, pp. 296-302.

Matusiak, M.C., Campbell, B.A. and King, W.R. (2014), "The legacy of LEMAS: effects on police scholarship of a federally administered, multi-wave establishment survey", *Policing: An International Journal of Police Strategies & Management*, Vol. 37 No. 3, pp. 630-648.

Mawby, R.C. (2010), "Police corporate communications, crime reporting and the shaping of policing news", *Policing & Society: An International Journal of Research and Policy*, Vol. 20 No. 1, pp. 124-139.

Miller, P.R., Bobkowski, P.S., Maliniak, D. and Rapoport, R.B. (2015), "Talking politics on Facebook: network centrality and political discussion practices in social media", *Political Research Quarterly*, Vol. 68 No. 2, pp. 377-391.

Miron, E. and Ravid, G. (2015), "Facebook groups as an academic teaching aid: case study and recommendations for educators", *Journal of Educational Technology & Society*, Vol. 18 No. 4, pp. 371-384.

Morabito, M.S. (2010), "Understanding community policing as an innovation: patterns of adoption", *Crime & Delinquency*, Vol. 56 No. 4, pp. 564-587.

Murphy, K. (2009), "Public satisfaction with police: the importance of procedural justice and police performance in police-citizen encounters", *The Australian and New Zealand Journal of Criminology*, Vol. 42 No. 2, pp. 159-178.

Nowacki, J.S. and Willits, D. (2018), "Adoption of body cameras by United States police agencies: an organizational analysis", *Policing & Society: An International Journal of Research and Policy*, Vol. 28 No. 7, pp. 841-853.

O'Connor, C.D. (2017), "The police on Twitter: image management, community building, and implications for policing in Canada", *Policing & Society: An International Journal of Research and Policy*, Vol. 27 No. 8, pp. 899-912.

Oliver, W.M. (2000), "The third generation of community policing: moving through innovation, diffusion, and institutionalization", *Police Quarterly*, Vol. 3 No. 4, pp. 367-388.

Oliver, W.M. (2008), *Community-Oriented Policing: A Systemic Approach to Policing*, 4th ed., Prentice Hall, Upper Saddle River, NJ.

Pribeanu, C., Balog, A., Lamanauskas, V. and Slekiene, V. (2015), "Social capital on Facebook as perceived by Lithuanian university students: a multidimensional perspective", *Journal of Baltic Science Education*, Vol. 14 No. 1, pp. 132-141.

Procter, R., Crump, J., Karstedt, S., Voss, A. and Cantijoch, M. (2013), "Reading the riots: What were the police doing on Twitter?", *Policing & Society: An International Journal of Research and Policy*, Vol. 23 No. 4, pp. 413-436.

Rae, J.R., Lonborg, S.D., Steward, S. and Turel, O. (2015), "Do motivations for using Facebook moderate the association between Facebook use and psychological well-being?", *Frontiers in Psychology*, Vol. 6, pp. 1-9.

Roberg, R., Novak, K., Cordner, G. and Smith, B. (2012), *Police and Society*, 5th ed., Oxford University Press, New York, NY.

Roberts, A., Roberts, J.M. Jr and Liedka, R.V. (2012), "Elements of terrorism preparedness in local police agencies, 2003-2007: impact of vulnerability, organizational characteristics, and contagion in the post-9/11 era", *Crime & Delinquency*, Vol. 58 No. 5, pp. 720-747.

Roche, T.M., Jenkins, D.D., Aguerrevere, L.E., Kietlinski, R.L. and Prichard, E.A. (2015), "College students' perceptions of inappropriate and appropriate Facebook disclosures", *Psi Chi Journal of Psychological Research*, Vol. 20 No. 2, pp. 86-96.

Rogers, E.M. (2003), *Diffusion of Innovations*, Simon & Schuster, New York, NY.

Rosenbaum, D.P., Schuck, A.M., Costello, S.K., Hawkins, D.F. and Ring, M.K. (2005), "Attitudes toward the police: the effects of direct and vicarious experience", *Police Quarterly*, Vol. 8 No. 3, pp. 343-365.

Ruddell, R. and Jones, N. (2013), "Social media and policing: matching the message to the audience", *Safer Communities*, Vol. 12 No. 2, pp. 64-71.

Schafer, J.A., Huebner, B.M. and Bynum, T.S. (2003), "Citizen perceptions of police services: race, neighborhood context, and community policing", *Police Quarterly*, Vol. 6 No. 4, pp. 440-468.

Schneider, C.J. (2016), "Police presentational strategies on Twitter in Canada", *Policing & Society: An International Journal of Research and Policy*, Vol. 26 No. 2, pp. 129-147.

Statista (2018a), "Number of monthly active Facebook users worldwide as of 2nd quarter 2018", available at: www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/ (accessed September 15, 2018).

Statista (2018b), "Twitter: statistics and facts", available at: www.statista.com/topics/737/twitter/ (accessed September 15, 2018).

Statista (2018c), "Number of YouTube users worldwide from 2016 to 2021", available at: www.statista.com/statistics/805656/number-youtube-viewers-worldwide/ (accessed September 15, 2018).

Surette, R. (2015), *Media, Crime, and Criminal Justice: Images, Realities, and Policies*, 5th ed., Cengage Learning, Stamford, CT.

Sveningsson, M. (2014), " 'I don't like it and I think it's useless, people discussing politics on Facebook': Young Swedes' understandings of social media use for political discussion", *Cyberpsychology*, Vol. 8 No. 3, pp. 106-120.

Trochim, W.M. and Donnelly, J.P. (2006), *The Research Methods Knowledge Base*, 3rd ed., Atomic Dog Publishing, Cincinnati, OH.

United States Department of Justice, Office of Justice Programs, Bureau of Justice Statistics (2015), *Law Enforcement Management and Administrative Statistics*, Inter-university Consortium for Political and Social Research, Ann Arbor, MI, available at: https://doi.org/10.3886/ICPSR36164.v2 (accessed April 21, 2018).

Walker, S. and Katz, C. (2018), *The Police in America: An Introduction*, 9th ed., McGraw-Hill Education, New York, NY.

Weisburd, D. and Lum, C. (2005), "The diffusion of computerized crime mapping in policing: Linking research and practice", *Police Practice and Research*, Vol. 6 No. 5, pp. 419-434.

Weitzer, R. (2002), "Incidents of police misconduct and public opinion", *Journal of Criminal Justice*, Vol. 30 No. 5, pp. 397-408.

Wells, W. (2007), "Type of contact and evaluations of police officers: the effects of procedural justice across three types of police-citizen contacts", *Journal of Criminal Justice*, Vol. 35 No. 6, pp. 612-621.

Wessels, B. (2009), "Information and communication technologies and policing: the dynamics of changing police-public communication in the East end of London", *The Howard Journal of Criminal Justice*, Vol. 48 No. 5, pp. 501-513.

Willits, D. and Nowacki, J. (2016), "The use of specialized cybercrime policing units: an organizational analysis", *Criminal Justice Studies*, Vol. 29 No. 2, pp. 105-124.

Willits, D.W. (2014), "The organizational structure of police departments and assaults on police officers", *International Journal of Police Science & Management*, Vol. 16 No. 2, pp. 140-154.

Yar, M. (2012), "Crime, media and the will-to-representation: reconsidering relationships in the new media age", *Crime Media Culture*, Vol. 8 No. 3, pp. 245-260.

Zhao, J., Lovrich, N.P. and Thurman, Q. (1999), "The status of community policing in American cities: facilitators and impediments revisited", *Policing: An International Journal of Police Strategies & Management*, Vol. 22 No. 1, pp. 74-92.

About the authors

Xiaochen Hu is Assistant Professor in the Department of Criminal Justice, Fayetteville State University. He received the PhD Degree in Criminal Justice from Sam Houston State University. He conducts both quantitative and qualitative studies related to police decision making, police culture, community-oriented policing, gangs, criminal justice interaction with mass media and police use of social media. Xiaochen Hu is the corresponding author and can be contacted at: xhu@uncfsu.edu

Nicholas P. Lovrich is Regents Professor Emeritus and Claudius O. and Mary W. Johnson Distinguished Professor of Political Science in the School of Politics, Philosophy and Public Affairs, Washington State University. He is a graduate of Stanford University, and received the PhD Degree in Political Science from U.C.L.A. He has worked with federal, state, tribal, campus, county and municipal law enforcement agencies on applications of community policing concepts in carrying out the missions of those agencies over the course of the past four decades.