Assessing law enforcement websites: a comparative analysis exploring types, quantity and quality of information available

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Abstract

Purpose – The purpose of this study is to explore the availability of information on law enforcement websites in the state of Wisconsin.

Design/methodology/approach – The study conducted a content analysis of all 179 county and municipal local law enforcement agency websites within Wisconsin. The authors then implemented a comparative analysis that explored whether the quantity and quality of information available on law enforcement websites are similar to those of local governments and school districts. The authors then estimated models to test whether there is a relationship between the population size served and gender distribution of law enforcement departments to the availability of information on law enforcement websites.

Findings – Law enforcement websites contain a noticeable lack of information. The finding is even more apparent when comparing law enforcement websites to the websites of local governments and school districts. Finally, the authors show a positive link between information sharing on law enforcement websites and the proportion of the civilian staff at an agency that are women.

Originality/value – Past studies that reviewed the make-up of law enforcement websites analyzed large law enforcement departments rather than local law enforcement departments, which notably represent the majority of most law enforcement departments. The authors also explicitly demonstrate that the commitment to information sharing is lagging within law enforcement websites compared to local-level governments. Future scholarship and law enforcement departments may benefit from exploring the employment of female civilians.

Keywords Police, Websites, Police and gender, Gender, Information sharing, Local government

Paper type Research paper

In the Internet age, governmental entities have a direct path to citizens in order to convey a range of important information through their official websites. Research demonstrates that a high level of transparency and the information available online from local governmental agencies has a statistically significant impact on citizens' level of trust in those agencies (Grimmelikhuijsen, 2010; Kim and Lee, 2012; Piotrowski and Van Ryzin, 2007). At present, research on governmental agency websites is still ripe for academic investigation. At the local

governmental level, there are only a handful of studies that explore county or city government websites for the types and amount of information made publicly available (Armstrong, 2011; Baker and Chin, 2016; Bearfield and Bowman, 2017;; Bernick *et al.*, 2014; Hansen *et al.*, 2021; Harder and Jordan, 2013; Lowatcharin and Menifield, 2015). Similarly, information availability and the quality of this information on law enforcement agency websites have garnered academic interest (Aiello and Gumbhir, 2016; Barthe and Lateano, 2006; Dykehouse and Sigler, 2000;; Farmer and Copenhaver, 2021;; Jones and de Guzman, 2012; Kilburn and Krieger, 2014; Madichie and Hinson, 2014; Rosenbaum *et al.*, 2011; Sillince and Brown, 2009; Tully and McKee, 2000; Yavuz and Welch, 2014). At present, these studies limited their empirical focus to websites of law enforcement for other countries (Madichie and Hinson, 2014 and Sillince and Brown, 2009) or websites of the largest police departments in the USA (Aiello and Gumbhir, 2016; Farmer and Copenhaver, 2021; Jones and de Guzman, 2012; Kilburn and Krieger, 2014) with only one study concentrating on a specific state (Barthe and Lateano, 2006). Many of these studies are dated with the most comprehensive study on the topic by Rosenbaum *et al.* (2011), which looks at law enforcement websites of all sizes, a decade old.

In this study, we seek to build upon the literature on law enforcement agency websites by performing a content analysis on all local-level law enforcement agency websites in a singular state. In particular, this study is focused on three research questions. First, what types of information and how much of each type are available on law enforcement agency websites? To investigate this question, we conducted a content analysis of all 179 local-level law enforcement agencies with active websites within the state of Wisconsin. Law enforcement employment statistics of Wisconsin agencies are on par with other states, thus providing increased generalizability of our findings, averaging equivalent numbers of law enforcement officers and civilians (both male and female) who serve an average population of 5.7 million (FBI, 2021). Second, we ask whether the level of information available on law enforcement agency websites is similar to the levels found on comparable local-level government websites. When exploring this research question, we perform a comparative analysis that examines the information available on county government, city government, village government and school district websites. Then, we compare the information available on these websites to the types and amount of information available on law enforcement websites. Finally, we ask whether there is a relationship between the employment of women at law enforcement agencies and the availability of information on these websites. We estimate multivariate, multiple regression statistical models to predict the presence of seven types of information on the websites that involves an interactive feature: information on crime statistics, filing an officer complaint, paying parking tickets, paying other tickets and fines, accident reports, police reports and anonymous tips.

Overall, we find that law enforcement agency websites contain a noticeable lack of information. The finding is even more apparent when comparing law enforcement websites to the more robust websites of local governments and school districts. Finally, we uncover a link between the presence of important information on law enforcement websites and the proportion of the agency civilian staff who are women. In particular, a higher proportion of women civilians working at the agency is associated with a higher level of information and transparency on the websites. While we do not purport to have uncovered a causal relationship, this exploratory analysis provides a potential area for future research.

Research on law enforcement online presence
The investigation of law enforcement websites (Aiello and Gumbhir, 2016; Barthe and Lateano, 2006; Dykehouse and Sigler, 2000; Farmer and Copenhaver, 2021; Jones and de Guzman, 2012; Kilburn and Krieger, 2014; Madichie and Hinson, 2014; Rosenbaum *et al.*, 2011; Sillince and Brown, 2009; Tully and McKee, 2000; Yavuz and Welch, 2014) and law enforcement social media or online recruitment (Aiello, 2020; Hu and Lovrich, 2019; Lieberman *et al.*, 2013) have sustained

significant interest by scholars. Three studies on law enforcement websites are cross-national studies (Colbran, 2018; Madichie and Hinson, 2014; Sillince and Brown, 2009). In the earliest study, Sillince and Brown (2009) examine the rhetoric that law enforcement agencies employ across English and Welsh constabularies, finding that agencies employ different types of rhetoric on their websites to convey legitimacy to the mass public. In fact, Colbran (2018) points out that police websites throughout the United Kingdom give the impression of increased transparency to the public. However, she argues that law enforcement agencies utilize this perception of legitimacy to restrict the amount of information they provide. Similarly, a study conducted by Madichie and Hinson (2014) on sub-Saharan African law enforcement websites also found a lack of dissemination of information. That being said, the authors note that there is potential for these websites to provide useful information that citizens would want to access.

Six studies explore the availability of information on law enforcement websites in the largest cities in the United States (Aiello and Gumbhir, 2016; Barthe and Lateano, 2006; Dykehouse and Sigler, 2000; Farmer and Copenhaver, 2021; Jones and de Guzman, 2012; Kilburn and Krieger, 2014). These studies explore access to very different types of information. For instance, Jones and de Guzman (2012) investigate the availability of a range of information on law enforcement websites in 162 large municipal agencies, such as crime statistics, crime complaints, police complaints and additional citizen services. Overall, there was wide variance in terms of the types and amount of information available on these websites. The authors find that resource restraints had no impact on the availability of information. In comparison, officer education and population size do impact the availability of information. In a more recent study, Farmer and Copenhaver (2021) demonstrate that there is wide variance in the types and amount of coronavirus disease (COVID-19) information available on law enforcement websites in the 200 largest cities. For example, the authors find that less than a majority of these websites had any information on restrictions on public gatherings or stay-at-home orders where these orders were present.

Rosenbaum et al. (2011) conducted the most comprehensive study on law enforcement websites. In the study, the authors randomly sample 666 municipal police agencies from the 1999 Law Enforcement Management and Administrative Statistics (LEMAS) survey. Then, the authors implemented a content analysis of the agencies' websites. At the time, the authors find that only 42% of agencies nationwide had official websites. Further, the authors find vast differences in the amount and type of information on these websites. Rosenbaum et al. (2011) also find that population size was an important predictor of the creation of a website and content. The authors conclude over a decade ago that law enforcement agency websites are underutilized by both the police and research communities. As we would expect almost all law enforcement agencies to have a website today, it would be important to explore variance in the information available on these websites, as well as its predictors, in the present time period.

Additional studies on law enforcement agency presence online support that there are differences in the types and amount of information these agencies promote in the USA (Aiello, 2020; Hu and Lovrich, 2019; Lieberman et al., 2013). Lieberman et al. (2013) find variance at the 23 largest agencies regarding whether they post on social media and the content of those posts. Hu and Lovrich (2019) confirm this observation using the 2013 LEMAS survey and find that workforce size (commissioned and civilian) helps predict which agencies are most likely to communicate online. Related, Aiello (2020) investigates 131 law enforcement agencies and finds that the gender composition of a law enforcement agency can impact the narrative employed in online recruitment materials.

There is some evidence that law enforcement agencies have the capacity for vast information dissemination but selectively decide which information to disseminate to the mass public (Aiello and Gumbhir, 2016; Kilburn and Krieger, 2014). Other supporting research on county and city websites demonstrates that governmental agencies have a fairly large capacity to disseminate information (Baker and Chin, 2016, Bearfield and Bowman, 2017; Bernick et al., 2014; Hansen et al., 2021; Harder and Jordan, 2013; Lowatcharin and

Menifield, 2015; Yavuz and Welch, 2014). While there is variance in terms of the amount of information on these websites, overall, these websites do a fairly good job of demonstrating a commitment to information sharing. It is noteworthy that neither government resources nor the digital infrastructure of the local government affected the amount and quality of information available on county and city websites (Baker and Chin, 2016; Harder and Jordan, 2013). In comparison, as Rosenbaum *et al.* (2011) note, law enforcement agency websites are underutilized by the police. The lack of law enforcement involvement in managing their websites is in stark contrast to the resources devoted toward disseminating booking photographs to local news organizations (Bidgood, 2015; Stelloh, 2017). As Bidgood (2015) points out, booking photographs could be utilized as propaganda for law enforcement agencies. Therefore, law enforcement agencies have an incentive to disseminate this information. In fact, many of the agencies we investigate in this study disseminate booking photographs but do not present other easily obtainable information on their websites. Given previous research on law enforcement dissemination of information online, we develop two hypotheses as follows:

H1. There will be substantial variance in terms of the amount of information available on law enforcement websites.

H2. There will be less information available on law enforcement websites when compared to other local-level governmental agencies.

Research on women and transparency
A handful of studies have explored the relationship between women's representation in government and governmental transparency. First, studies find that women legislators and elected leaders are less prone to corruption (Dollar *et al.*, 2001; Swamy *et al.*, 2001). Overall, women tend to be less tolerant toward governmental corruption in places where it is stigmatized, such as the USA (Esarey and Chirillo, 2013). Research demonstrates that women governmental figures are more likely to be transparent in these contexts when compared to men.

In terms of general information, a recent study by Funk (2020) finds that women city mayors were more likely than their male counterparts to be transparent about decision-making in regards to COVID-19 policies. When mayors made decisions to implement policies related to the virus, women mayors were more likely to publicize their decisions, as well as provide accompanying scientific information to support their decisions to the public. The observation aligns with previous research that demonstrates that women legislators are more likely to consider and promote information dissemination from a range of sources when compared to men (Nownes and Freeman, 2019).

There have been two studies conducted by Araujo and Tejedo-Romero (2016, 2018) that specifically explore the proportion of women represented in local-level bureaucracies and the level of transparency and public access to information within the bureaucracies. Araujo and Tejedo-Romero (2016) find that a higher proportion of women represented within 100 Spanish municipalities over four years was associated with a higher level of transparency from the municipal governments, as well as a greater access to information from the municipalities. Overall, the authors explore "80 indicators grouped into five areas of transparency: information about municipal corporations, relationship with citizens and society, economic and financial transparency, information about municipal service contracts bidding and transparency about urban development/public works" (p. 892). In their follow-up study, Araujo and Tejedo-Romero (2018) replicate the analysis by exploring additional years. Again, the authors find that a larger proportion of women within the governmental agency was associated with greater transparency and information dissemination.

Similar trends have been found when exploring the relationship between women and the transparency of law enforcement agencies. For example, Mrozla and Hellwege (2020) find that agencies with a greater percentage of women patrol officers were more likely to acquire body cameras for transparency reasons. In particular, agencies with more women sought bodycam use in order to improve community relations, increase professionalism, improve training, reduce use of force and strengthen leadership. Likewise, Aiello (2020) uncovers that more women in a police department correspond to a greater focus on community relations and community policing. Therefore, we would expect law enforcement agencies with a larger share of women employed within the agency to be associated with greater transparency and promotion of information useful for citizens. Given previous research on women and governmental and law enforcement transparency, we develop the hypothesis as follows:

H3. A higher proportion of the female civilian law enforcement agency workforce will be associated with a higher probability of information availability.

Website data
We performed a content analysis on all local-level county and municipal law enforcement agency websites in the state of Wisconsin between the dates December 1st to December 15th, 2020. A research assistant sought each county and municipal law enforcement agencies' website. When web searching did not yield a website, contacts were made through phone calls to ensure whether the department did indeed have some form of web presence [1]. Each law enforcement agency website was coded for the availability of several types of information that citizens might be most likely to search for on these websites. One research assistant coded these websites by clicking through web pages in conjunction with using the search function to ascertain the presence or absence of the collected information. Another coder served as a reliability check, who coded the full sample to ensure consistent categorization. The original coder and intercoder achieved an intercoder reliability of 100% since the search function was a reliable tool for confirming the presence of information [2]. Websites were coded in this condensed time period to ensure external timing factors did not cause differences.

Overall, 180 law enforcement websites were explored, which includes 72 sheriff's departments. Out of the 180 law enforcement websites, only 1 department did not have a website (Madison Park Rangers). Additionally, four small law enforcement agencies (Arena, Augusta, Reeseville and Silver Lake) were excluded from the multivariate analyses because these agencies did not provide employment data to the Federal Bureau of Investigation's Uniform Crime Reporting Program (FBI, 2021). We have chosen to explore all county and municipal law enforcement websites in the state because previous research largely neglects smaller law enforcement agencies and only focuses on the most populated cities through the USA. Therefore, in addition to Wisconsin sharing similar employment figures of law enforcement departments across the nation, on average, the generalizability of the collected data is increased since most police departments are fairly small.

Dependent variables
In Table 1, we provide the coding scheme for the availability of 12 informational items on law enforcement websites. At the top of Table 1, we provide the coding scheme for the first five items. Here, we simply explore whether the information exists on the website (0 = no information and 1 = presence of information): current or previous budget, most recent annual report, previous annual reports, an organizational command chart and information on filing a non-emergency complaint. Four of these items represent the most basic transparency information an individual might inquire into regarding the administrative functions of any

Informational component		0		1
Budget		No info		Presence of current or previous budget
Annual report		No info		Presence of annual report
Previous annual report		No info		Presence of previous Year's reports
Organizational chart		No info		Presence of organizational chart
File criminal complaint		No info		Info to file non-emergency complaint

Informational component	0	1	2
Crime statistics	No info	General crime statistics	Interactive system map of crime statistics
File officer complaint	No info	Instructions for filing complaint	Online system to file officer complaint
Parking tickets	No info	Instructions on paying parking tickets	Online system to pay parking tickets
Other fines or tickets	No info	Instructions on paying other fines/tickets	Online system to pay fines
Accident report	No info	Instructions on filing accident report	Online system to file accident report
Police report	No info	Instructions on obtaining police report	Online system to obtain police report
Anonymous tip	No info	Instructions on submitting anonymous tip	Online system to submit anonymous tip

Table 1.
Police website coding scheme

agency in general. The fifth item, filing a non-emergency criminal complaint, is logically the most central policing action a citizen might engage in online.

The seven items at the bottom of Table 1 provide the second set of information, characterized by their degree of variation relating to user interaction with the police websites specific to functions of law enforcement. First, the websites are coded for whether they contain crime statistics (0 = no information, 1 = general crime statistics or 2 = interactive system map of crime statistics). Next, the subsequent informational items are coded for whether there is 0 = no information, 1 = instructions on completing the task or 2 = an online system to complete the task. These six items represent the most common points of contact between the police and a citizen, including filing a complaint against an officer, paying a parking ticket, paying other fines and tickets, filing an accident report, obtaining a police report and submitting an anonymous tip.

Method
It has been two decades since law enforcement agency websites of a single state have been systematically analyzed for content (Barthe and Lateano, 2006). Therefore, this study is mostly an exploratory analysis where we are attempting to uncover trends regarding which information is available to citizens on these government websites. Here, we perform three distinct analyses. First, a content analysis of these websites is conducted and descriptive statistics of the findings are presented and discussed. Second, we compare the availability of information on these websites with comparable information on other local government websites. This comparative analysis aims to reasonably gauge whether law enforcement websites contain more or less information than other types of local government websites. Third, a multivariate analysis is conducted to predict the availability of seven different informational items where there is wide variance in information availability on these

websites. In particular, logistic regression is utilized in order to determine whether $0 =$ no information at all is available or $1 =$ general instructions or an online system is present [3]. As this study is exploratory, the multivariate analyses should be viewed as investigatory rather than attempting to find casual relationships. Here, we include three independent variables as follows: the overall population of the area, [4] the proportion of women law enforcement officers working for the department and the proportion of women civilian employees working for the agency (FBI, 2021) [5].

Results

Descriptive statistics

In Table 2, we provide descriptive statistics for the availability of the 12 informational items on law enforcement websites. Exploring the five items at the top of Table 2 first, it is clear that there is a noticeable lack of transparency on these websites. Only around 6% of law enforcement agencies post their current or a previous year's budget on their official website. The recent calls for defunding or cutting law enforcement agencies' budgets would incentivize departments not to reveal this information. By comparison, a larger share of law enforcement websites provides an annual report (27.37%) or previous annual report (31.84%) on their websites. However, the total amount is still relatively low as less than one-third of all law enforcement agencies' websites shared a current or previous annual report. Less than 10% of agencies display an organizational chart on their website. Finally, only around 1 in 17 agencies (6.15%) have any information at all for citizens on how to file a non-emergency criminal report. Since citizens are aware that 911 is only to be used in the case of an emergency, it is surprising that less than 10% of agencies do not provide any information on filing a non-emergency report.

At the bottom of Table 2, descriptive statistics are presented for seven informational items that are particular to citizens' interactions with law enforcement agencies. First, we find that around 65% of agencies do not provide any information on crime statistics, 24% have general statistics, and only 11% have an interactive system available for viewing crime statistics (for example, an interactive map). Since police officers commonly call for their increased presence as a tool for crime reduction, it is surprising that so many agencies do not provide the citizens that they serve with these statistics. Second, a similar lack of transparency exists when dissecting law enforcement websites looking for

Informational component	No information		Information present
Budget	93.86%		6.14%
Annual report	72.63%		27.37%
Previous annual report	68.16%		31.84%
Organizational chart	92.18%		7.82%
File criminal complaint	91.06%		6.15%

Informational component	No information	General information	Interactive system
Crime statistics	65.36%	24.02%	10.60%
File officer complaint	62.01%	25.14%	12.85%
Parking tickets	42.46%	12.29%	45.25%
Other fines or tickets	49.16%	11.73%	39.11%
Accident report	23.46%	39.66%	36.87%
Police report	25.14%	50.84%	24.02%
Anonymous tip	49.72%	17.88%	32.40%

Table 2.
Police website descriptive statistics

information on filing a complaint against an officer. Only around 13% of departments have an online system for filing a complaint against an officer, 25% provide directions or contact information on filing a complaint, and just over six in ten departments have no information at all on filing a complaint.

The following two items explore the availability of information related to paying parking fines or tickets on the websites. Overall, 45% of law enforcement agencies have an online system for paying parking tickets, 12% have information on paying parking tickets, and around 43% have no information at all on paying parking tickets. To dissect this finding further, we explore whether there was a relationship between having an autonomous parking authority and the lack of information on paying parking tickets. We find that those localities with an autonomous parking authority, for example, the city of Milwaukee, also contained the presence of information on paying parking tickets on their official law enforcement agency websites. A similar pattern exists when searching for information on paying other fines and tickets, such as speeding tickets. Around 40% of law enforcement agencies' websites contained an online system for paying fines and tickets, about 12% had general information on paying, and 49% contained no information at all on paying other fines or tickets. The fact that almost half of agency websites contained no information on paying fines and tickets is concerning, given the relationship between missed payments and the likelihood for future punishment related to missing these payments.

Besides paying parking tickets and other fines, citizens may need information on filing an accident or police report with the law enforcement agency. Compared to the information on paying fines or tickets, information on filing accident or police reports was available at higher rates. Just over three-quarters of law enforcement websites had information available on filing an accident report, with almost 37% providing an online system for filing an accident report. Similarly, just fewer than three-quarters of law enforcement websites provided information on filing a police report, with almost a quarter (24%) of them having an online system for filing a police report. While these statistics indicate greater transparency, it is important to acknowledge that 1 in 4 law enforcement websites do not provide any information at all on filing an accident or police report on their website. Thus, the burden of seeking out this information falls on the citizen to make person-to-person contact with law enforcement.

The final type of information we explored on law enforcement websites is the availability of information on submitting an anonymous crime tip. The use of submitting an anonymous tip can be useful for citizens concerned about a crime but fearful of the potential backlash that might occur from personable contact with a law enforcement agency. Here, we find that 32% of law enforcement agencies allow citizens to submit an anonymous crime tip directly on their website. In comparison, 18% of law enforcement agencies provide directions and information on submitting an anonymous tip. Strikingly, around half of law enforcement agency websites provide no information at all on submitting an anonymous tip. This lack of information on these websites would make it incredibly difficult for a citizen to submit an anonymous tip without contacting the agency through a phone call or in-person inquiry. Overall, the descriptive statistics provide support for H1.

Comparative analysis
Exploring the availability of information on law enforcement agency websites in isolation only conveys a portion of the story. We employ the same methodological approach with law enforcement websites and dissect the availability of information on comparable local-level government websites in the state of Wisconsin: county governments ($n = 72$), city governments ($n = 190$), village governments ($n = 412$) and school districts ($n = 429$). We also conducted inter-coder reliability tests on these datasets (see, Endnote 2).

Obviously, not all local governmental entities provide citizens with the same types of services. Law enforcement agencies provide different services than do school districts to the citizens within their district/jurisdiction. Therefore, we attempt to explore both the availability of comparable information and the availability of information most particular to the governmental entity, such as we did with the law enforcement agency websites. Table 3 displays the descriptive statistics for several different pieces of information on the four local-level types of governmental websites.

Comparable Information: We explored five pieces of information that were consistent across all four types of local government websites. These pieces of information include the availability of a current budget, the currently scheduled meeting agenda, most recent meeting minutes, previous meeting minutes and elected representative information. First, the availability of the budget is something we directly explored on the law enforcement agency websites. In Table 3, we see that all four agencies are more likely to provide their recent budget on their website when compared to law enforcement agencies. Almost 80% of county governments post their budget, 56% of city governments, 35% of village governments and 35% of school districts, compared to just 6% of law enforcement agencies. The result further supports that law enforcement agencies' transparency is undervalued compared to other related governmental organizations that serve the community, at least, regarding the sharing of budget reports.

The availability of the most recent meeting agenda, recent meeting minutes and previous meeting minutes is comparable to the presence of an annual or previous report on law enforcement agency websites. In all instances, all four types of local governments are over two times more likely (and in most instances, three times more likely) to post their current meeting agenda, current meeting minutes and previous meeting minutes on their websites compared to law enforcement agencies posting a singular annual report or any previous annual reports Overall, it is increasingly becoming apparent that the commitment to information sharing among local governments is unlike that of law enforcement agencies.

County governments Informational component	Info present	City governments Informational component	Info present
Budget	79.17%	Budget	56.32%
Meeting agenda	97.22%	Meeting agenda	77.37%
Meeting minutes	94.44%	Meeting minutes	88.95%
Previous meeting minutes	98.61%	Previous meeting minutes	87.54%
Representative information	98.61%	Representative information	100.00%
Land records	93.06%	Waste information	75.79%
Marriage license	88.89%	Water information	77.37%
Health information	98.61%	Building inspection	77.89%

Village governments Informational component	Info present	School districts Informational component	Info present
Budget	35.41%	Budget	34.95%
Meeting agenda	82.72%	Meeting agenda	87.17%
Meeting minutes	86.40%	Meeting minutes	82.08%
Previous meeting minutes	87.54%	Previous meeting minutes	90.80%
Representative information	92.92%	Representative information	95.89%
Voting information	78.75%	Enrollment information	85.71%
Water information	70.25%	Special needs education	74.82%
Tax information	63.74%	School lunch information	85.71%

Table 3.
Local government website descriptive statistics

In our fifth and final item that is comparable across all four local government websites, we explore whether information on elected representatives is available on local government websites. In particular, we code whether all elected representatives' names, phone numbers and constituency information are available. This type of information is closely related to the presence of the organizational structure information that we explored on law enforcement agency websites. We should note that if not all of this information is available for every elected representative on the government website, we code it as unavailable. Over 90% of all of the websites for each of the four types of local governments shared this information for all elected officials, compared to the roughly 8% of law enforcement agencies' websites providing any sort of organizational chart.

Particular Information: We also explored information specific to the type of government that a citizen would be most likely to access for each of the four types of local-level governments. First, we code for the availability of information related to land records, marriage licenses and health information at the county level. We find that around 90% or more county websites provide information on all three of these services. Second, we explore whether waste, water, and building inspection information is available on city websites. Over 75% of city websites contain information on all three services. Third, we code for whether voter registration, water and property tax information are available on village government websites. We find that over 63% of websites contain information on all three types of services. Finally, we explore whether enrollment, special needs education and reduced school lunch information is available on school district websites. Three-quarters or more of the school district websites contained information on all three pieces of information.

Local government websites generally provide more information specific to their public service functions than law enforcement agencies. An overwhelming majority of local government websites provide information related to their public service functions. In comparison, a majority of law enforcement agencies provide no crime statistics or information on filing an officer complaint, and around half of the agencies provide no information on paying parking tickets, paying other fines or tickets or submitting an anonymous tip. That being said, three-quarters of law enforcement agency websites do provide information on accident or police reports, which aligns with the level of particular information available on city and village government websites. The results provide strong support for H2.

Multivariate analysis

The final analysis performed in this study is an exploratory multivariate analysis. In Table 4, statistical output from models predicting the availability of the seven pieces of information with the largest variance on law enforcement agency websites is presented: crime statistics, filing an officer complaint, paying parking tickets, paying other fines or tickets, accident report, police report and anonymous tip. The results indicate that the population of the jurisdiction only has a statistically significant relationship with the availability of information on filing an officer complaint. Indeed, the agencies with large jurisdictions, such as the Milwaukee Police Department, Milwaukee County Sheriff's Department, City of Madison Police Department, etc. were more likely to provide this information on their website. When conducting robustness tests, we also find that the number of law enforcement officers and number of civilian employees had no statistical relationship with the presence of any of the pieces of information. Similarly, model output in Table 4 indicates that the proportion of the officers that are women has no statistical relationship with the presence of any of the seven pieces of information.

We find that the proportion of women civilian employees does have a statistically significant relationship with the presence of several pieces of information on law enforcement

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	Crime statistics	Officer complaint	Parking tickets	Other fines	Accident report	Police report	Anonymous tip
(Intercept)	−1.87* (0.49)	−1.70* (0.47)	−0.38 (0.39)	−0.01 (0.38)	−0.11 (0.43)	−0.21 (0.42)	−1.01* (0.42)
Population	0.00 (0.00)	0.00* (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Proportion women officers	−0.09 (2.19)	1.85 (2.15)	−1.48 (2.09)	−1.97 (2.04)	4.36 (2.74)	2.80 (2.57)	2.74 (2.11)
Proportion women civilians	1.65* (0.59)	1.16* (0.56)	1.31* (0.51)	0.37 (0.49)	1.36* (0.57)	1.57* (0.56)	0.86 (0.50)
N	175	175	175	175	175	175	175
AIC	223.48	228.43	237.84	248.94	178.76	188.12	240.69
BIC	274.12	279.07	288.47	299.58	229.40	238.76	291.33
Log-likelihood	−95.74	−98.21	−102.92	−108.47	−73.38	−78.06	−104.35

Note(s): Standard errors in parentheses

*$p < 0.05$

Table 4.
Models predicting
information on law
enforcement agency
websites

agency websites. In particular, as the proportion of women civilians working for a law enforcement agency increases, there is an increase in the probability that information relating to crime statistics, officer complaints, parking tickets, accident reports and police reports exist on the website. This finding aligns with the research indicating that increased women's presence in governmental agencies is associated with increased transparency. Therefore, we have some support for H3. While our analysis does not seek to explore a causal link, we believe that the finding should lead to a call for more research on women and transparency in law enforcement.

Conclusion

In the study, we explored the availability of information on law enforcement websites in the state of Wisconsin. In particular, this analysis occurred in three stages. First, we conducted a content analysis of all 179 local-level law enforcement agency websites in existence within the state. We find that law enforcement websites contain a noticeable lack of information. In fact, we find that critical information that a citizen might need to access, such as information on paying fines and tickets, was lacking on a large proportion of websites. Law enforcement agencies should think about this deficiency when attempting to create a stronger relationship with the public.

Second, we implemented a comparative analysis that explores whether the quantity and quality of information available on law enforcement websites are similar to those of county governments, city governments, village governments and school districts. We found that law enforcement websites contained less information in the comparative analyses than their respective local government and school district websites. The finding demonstrates that law enforcement agencies underutilize this useful medium for citizen engagement.

Finally, we estimated multivariate multiple regression models in order to test whether there is a relationship between the proportion of women employees and the availability of information on law enforcement websites. We uncover a link between the presence of important information on law enforcement websites and the proportion of the agency civilian staff who are women. In particular, a higher proportion of women civilians working at the agency is associated with a higher level of information and transparency on the websites, specific to crime statistics, office complaints, parking tickets and accident and police reports. This finding should be explored further in future research.

Overall, there is variation in what information is being shared by the websites of local-level entities, with websites of law enforcement agencies consistently less likely to contain important information relevant to visitors (Armstrong, 2011; Yavuz and Welch, 2014). Our findings lead to much speculation as to why law enforcement websites are less likely to disseminate information than other comparative local-level governments. An argument can be made that law enforcement agencies are not deliberately withholding information. However, this perspective is weakened, as other local-level governments within their respective communities demonstrate a considerable degree of website transparency; thus, suggesting that law enforcement agencies are choosing not to provide information and resources that may be relevant to the public. This viewpoint has empirical support as increased organizational control has demonstrated decreased website transparency and interactive features (Yavuz and Welch, 2014). As the evidence points to website transparency of law enforcement agencies being an endogenous product, this public institution's larger deprivation of relevant information that other local-level governments more often communicate to communities generates wonderment.

Notes

1. Most law enforcement websites were housed within its local government's website. After performing robustness tests, we found no systematic differences between association with an agency website

being connected to a broader local government website (i.e. types of law enforcement, level of government or local-level demographics) and a stand-alone agency website.

2. The sample size for the intercoder reliability sample for the police website dataset was 100% of the sample. The intercoder reliability sample sizes for the non-police government websites were randomly selected $n = 100$ for each of the datasets (city, village and school district), except for the county dataset, which only contains 72 cases. For the county dataset, the intercoder reliability sample was 100% of the sample. On average, intercoder reliability scores for these four datasets were higher than 98% congruence.

3. Although the coding scheme for several informational variables are measured at the ordinal level (i.e. 0, 1 and 2), the small number of observations means that convergence of ordinal logistic regression models was not statistically probable. Therefore, a scholar would have limited confidence in any results obtained from these models. Therefore, we combine the 1 (= general instructions present) and 2 (= online system available) categories together. This coding choice allows us to compare websites with no information to websites with any information on the topics.

4. The population variable correlated with the overall number of law enforcement officers working for the agency at 0.596 and the overall number of civilians working for the agency at 0.799. Therefore, due to these collinearity issues, these two variables were not included in the statistical models. In addition, population density was excluded from the final models since our prior testing determined it had no relationship.

5. The proportion of women law enforcement officers variable ranges from 0 to 0.5 (Spring Green Law Enforcement has 1 man and 1 woman officer), with a mean of 0.11 and a median of 0.11. The proportion of women civilians' variable ranges from 0 to 1, with a mean of 0.66 and a median of 0.64.

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Appendix

	Crime statistics	Officer complaint	Parking tickets	Other fines	Accident report	Police report	Anonymous tip
(Intercept)	0.15* (0.05, 0.38)	0.18* (0.06, 0.44)	0.68 (0.31, 1.46)	0.99 (0.46, 2.12)	0.89 (0.38, 2.08)	0.81 (0.35, 1.84)	0.36* (0.15, 0.80)
Population	0.00 (0.99, 1.00)	1.00* (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
Proportion women officers	0.91 (0.01, 66.11)	6.37 (0.09, 463.48)	0.23 (0.00, 13.95)	0.14 (0.00, 7.36)	78.40 (0.44, 21,332.15)	16.52 (0.12, 3054.42)	15.56 (0.26, 1100.95)
Proportion women civilians	5.20* (1.72, 17.39)	3.21* (1.12, 10.00)	3.69* (1.39, 10.25)	1.44 (0.56, 3.79)	3.90* (1.28, 12.15)	4.79* (1.62, 14.61)	2.36 (0.89, 6.49)

Note(s): 95% confidence bounds in parentheses
*$p < 0.05$

Table A1.
Model output – odds
ratio statistics

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