
The Value Added by Professional Certification of Municipal Finance Officers

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Abstract

Many academics and practitioners value professional training and certification programs as important ways to improve management practice and organizational performance. However, these programs often are among the first cutback targets in times of fiscal stress. Evidence that documents the actual impacts of specialized training and certification on public organizational performance is sparse. This longitudinal panel study examines the effects of a state-mandated Certified Municipal Finance Officer program on cities' financial management performance and finds that the program had a statistically significant independent impact on the observed reduction in the number of annual outside audit findings. The program's impact on improved financial management performance underscores the need for scholars to evaluate similar programs, the results from which may help to alter public officials' cutback calculus and restore public confidence in the public service.

Keywords

training and certification, financial management, performance, local government, state mandates

For those who work in or teach public administration, the merits of having a highly trained public workforce populated by professionals who understand their fiduciary responsibilities are obvious. While the benefits of professional training and certification regimes are clear to most practitioners and academics, they are much less apparent to some elected officials and citizens. The consequences of this divergence are abundant and frequently translate into reductions in or elimination of training and professional development budgets especially during times of fiscal stress.

Bridging this perceptual gulf is especially challenging in an era when popular trust in government and respect for those who toil in its trenches are at historic lows (Pew Research Center for the People and the Press 2017). What

might help to restore trust and confidence in government and promote broader recognition of the merits of retaining a highly trained corps of professionals? Performance information theory suggests that there is great unexploited potential in documenting and communicating to stakeholders the findings from credible evaluations of government investments in training and certification programs for public-sector

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professionals (James and Moseley 2014). Evidence from carefully designed outcome evaluations of professional training and certification programs may help to alter perceptions among both elected officials and citizens about the value of these investments for improving organizational performance (James 2011).

Scholars have long recognized the need for and inherent value of producing systematic evaluations of professional development and specialized certification programs (Mosher 1968; Hays and Duke 1996; Ammons and Newall 1989; Jones 1985; Clarke and Bland 1998; Hildreth 1998; McDonald 2010). Brintnall (1998, 4) called for “practical ways to improve evidence of quality in management, and to advertise it” as a strategy to help enhance “public trust in government and respect for its servants.” During that era, Conant (1993, 173) described the lack of research on the connection between management training and performance results as a “dearth of systematic, empirically based efforts to examine human capital investment.”

Unfortunately, little has changed in subsequent decades. While scholars in education and public health investigated the benefits of some credential programs for professionals in those fields, few studies in public administration, beyond the occasional case study or analysis of participant surveys, examined the impacts of management training and certification programs on valued organizational outcomes (Owens 2006; Bryson, Ackermann, and Eden 2007; Seidle, Fernandez, and Perry 2016). This research gap seems to persist despite an abundance of models and methods that provide guidance for how to evaluate the potential impacts of professional training and certification programs (Kirkpatrick and Kirkpatrick 2006; Phillips and Stone 2002; Ban and Faerman 1990). In summarizing the contemporary state of research on training and performance, Barrett and Greene (2015, 56) concluded that:

In human resources, it’s an article of faith that training is valuable . . . [but] . . . there’s little question that training budgets are one step from the guillotine when states are under pressure. . . . You

would think that one solution would be providing the legislature with clear evidence that the training has real value Unfortunately . . . we haven’t done the research to make state legislatures hesitate to reduce training.

Specialized training can enhance the technical competency of public managers and *should* result in improved organizational performance. That assertion is the central focus of the organizational capacity literature, particularly the stream that views capacity as organizational ability to perform well on key success factors (Bryson 2004; Bryson, Ackermann, and Eden 2007; Wolf and Bryan 2009; Ingraham, Joyce, and Donahue 2003; Andrews and Boyne 2010; Seidle, Fernandez, and Perry 2016). Seidle, Fernandez, and Perry (2016), for instance, propose a general model of training and developmental intervention in which knowledge and self-awareness coupled with coaching, mentoring, classroom training, and feedback comprise important causal mechanisms to enable a training regime to enhance managerial competency that in turn should improve organizational performance. Yet these authors observe that “scholars have rarely explored *whether* [emp. added] leadership training and development programs are effective” (Seidle, Fernandez, and Perry 2016, 603–4).

Even the sizable literature on the presumed performance benefits of professional managers and reformed government has yielded uneven results (Clingermyer and Feiock 2001; Ha and Feiock 2012; Folz and Abdelrazek 2009; Krebs and Pelissero 2010; Svara and Nelson 2008; Newell and Ammons 1987). Carr (2015, 686) synthesized relevant empirical studies and concluded that the evidence for improved performance of the council–manager form of government “is not as strong as many advocates likely expect” Consequently, evidence in the discipline remains sparse to support the connection between training, improved managerial competence, and better organizational performance.

The purpose of this study is to assess whether a state-mandated Certified Municipal Finance Officer (CMFO) training program for

municipal finance officers had any impact on indicators of municipal financial management performance. We examine the panel data for sixty Tennessee cities over an eight-year period to determine whether significant differences occur in the mean number and severity of audit findings recorded by outside independent auditors before and after municipal finance officers completed CMFO training.

Evidence that specialized training of municipal finance officers helps to improve financial management performance will support theoretical frameworks that link training, enhanced management capacity, and improved organizational outcomes. Credible evidence that professional certification of city finance officers leads to better financial management may also have a positive impact on citizen perceptions about the value of investing in similar training programs. When replicated across time and organizations, such findings may enhance citizen satisfaction with and trust in government and the professionals who manage and provide public services.

The Municipal Finance Officer Certification and Education Act

The Municipal Finance Officer Certification and Education Act was enacted by the Tennessee General Assembly in 2007 (TCA 2007) to assure that the chief financial officer in all Tennessee cities possessed the qualifications and training to “ensure competence in the handling of municipal funds and the protection of public moneys” (Durham 2016). The law required that all cities (with limited exceptions) have in their employ a chief financial officer (not a consultant or contractor) who obtained the CMFO credential. The only cities exempt are those that employ a certified public accountants with local government experience or individuals certified as a certified government finance manager or a certified public finance officer. All cities must employ a finance officer who completes at least twenty-four hours of continuing professional education annually.

Following the provisions of the CMFO Act, the Municipal Technical Advisory Service

(MTAS), a unit of the University of Tennessee Institute for Public Service, developed and offered the curriculum for CMFO training program. The curriculum consisted of eleven sessions that covered the relevant law, procedures, and responsibilities related to the fundamental aspects of municipal budgeting, accounting, financial management, and comprehension of the information necessary to understand and successfully perform the tasks and responsibilities of a municipal finance officer. An MTAS personnel with expertise in municipal finance and accounting served as instructors for each eight-hour class held monthly in different regions of the state over an eleven-month period. At the end of each class session, participants tackled a closed book, fifty-question multiple-choice exam. Correct answers to at least 74 percent of the questions constituted a passing score. Participants received the CMFO credential only after passing all eleven exams.

State officials perceived the CMFO program as an effective means to embed sound municipal financial practices and improve public financial management (Durham 2015). A survey of program participants sponsored by the Tennessee comptroller’s office reinforced this perception (Shults and Wolford-Bowling 2016). Large majorities of participants agreed that the program improved job-related performance and knowledge, and all participants recommended the CMFO training for other finance employees (Shults and Wolford-Bowling 2016). While both state officials and participants believed that the CMFO program succeeded in advancing its objectives, empirical evidence is more compelling and persuasive proof of its value.

Data and Method

The logic of the CMFO program (the independent variable) is that graduates will promote and apply the financial policies, practices, and procedures that advance the values of compliance, efficiency, accuracy, transparency, and accountability in financial affairs. This study employs two dependent indicators to measure

the effectiveness of the CMFO program in improving municipal financial management: (1) the number of annual audit findings and (2) the severity of annual audit findings. Reductions in both measures are desirable, since they indicate that a city has fewer problems that represent risks to financial operations, accuracy of financial statements, and compliance with applicable local, state, and federal laws and regulations. If causal evidence links CMFO training with such improvements, claims about the program's value and impact on financial management performance acquire stronger credibility.

Municipal Audit Report Data

State law authorizes the comptroller to establish standards and requirements for local government financial audits. Unlike some states (Kim, McDonald, and Lee 2018), Tennessee requires all cities to submit annual financial statements that adhere to generally accepted accounting principles and audits that are prepared by outside independent professional auditors. Generally Accepted Auditing Standards and Governmental Auditing Standards (often called the "Yellow Book") guide the work of the outside auditors (American Institute of Certified Public Accountants 2018; Comptroller General 2018).

The state comptroller requires Tennessee cities to establish and maintain an internal control system that conforms to the principles in the state's manual for internal control and compliance (Wilson 2017). Annual audit reports contain the auditor's opinion about the city's conformity to these standards and are publicly accessible on the comptroller's Web site (TN Comptroller 2017). These reports are the source for the number and type of annual audit findings. Following established standards and guidelines for the profession, an auditor classifies a finding as either a "material weakness" or a "deficiency" (Public Company Accounting Oversight Board 2018). This auditor classification is the source for the number of material weaknesses and deficiencies reported in the study.

A material weakness is a significant deficiency or a combination of deficiencies in internal control. It means that the timely prevention, detection, and correction of a material misstatement of the city's financial statements are unlikely. A deficiency may represent a significant deficiency or a combination of deficiencies in internal control that is less severe than a material weakness, yet important enough to merit attention by local officials. An internal control deficiency exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, detect, or correct misstatements on a timely basis. The professional auditor decides whether to classify an audit finding as a material weakness or a deficiency.

The authors' inspected each city's annual report and recorded the frequency and type of audit findings. In only two instances did an auditor not clearly identify a finding as being either a material weakness or deficiency. In those two cases, the authors classified the findings as deficiency. In this study, it is presumed that cities with fewer audit findings exhibit better financial management performance in meeting applicable professional standards for financial reporting and internal control.

Based on the external auditors' description and explanation of the findings in each city's annual audit report, the authors matched each audit finding with one of the nine topics covered in the CMFO curriculum. The purpose was to document the prevalence of particular types of audit findings and to identify what change, if any, occurred in the frequency of findings in each of the topics addressed by the curriculum. The objective was to highlight potential strengths and weaknesses of the training regime and to ascertain how to revise the curriculum to advance financial management performance, a long-standing concern in the discipline (McDonald 2018).

Hypotheses

The CMFO curriculum trains municipal finance officers how to design, implement, and

manage sound financial policies, practices, and internal controls. It emphasizes the importance for leaders to model the behaviors expected by other city employees. That theme permeates the curriculum. Accordingly, cities should have fewer audit findings and fewer serious types of issues in managing city finances during the post-CMFO period.

There are two hypotheses tested in this study.

Hypothesis 1: Cities will have fewer audit findings during their post-CMFO years compared to the years before the finance officer obtained the credential.

Hypothesis 2: Cities will have fewer serious types of audit findings (material weaknesses) during their post-CMFO years compared to the years before the finance officer obtained the credential.

Method

To test these hypotheses, a before and after research design was employed that involved collecting data on audit findings for an eight-year period (2007–2014). This study period provided at least three years of pre-CMFO audit data and at least three years of post-CMFO audit data for the cities represented by the first two cohorts of finance officers to earn the CMFO credential. The first cohort obtained the CMFO in 2010 and the second cohort earned it in 2012.

For the cities subject to the CMFO Act, two screening criteria helped to eliminate possible sources of variation in the dependent indicators other than the CMFO training. The first criterion required the *same* individual to occupy the position of chief financial officer during the entire eight-year study period. This screen helped to assure that any variation in audit findings was not due to different levels of knowledge, experience, or performance that different individuals might bring to the position of chief finance officer.

The second criterion required that the community contract with the *same* auditing firm

to perform the audit for each of the years in the study period. This screen eliminated the possibility of “auditor shopping” by local officials as a potential explanation for any observed change in the frequency or type of audit findings over time. It also minimized honest differences that may arise in the professional judgment, perceptions, and practices among auditors who work for different auditing firms (Tepalagul and Lin 2015).

The application of these two screens yielded a study population of sixty cities. Data on the number and type of audit findings for these cities were collected for the eight-year period (2007–2014) and yielded 480 cases (60 cities \times 8 years = 480). The city-year is the unit of analysis. The initial graduating cohorts of finance officers obtained their certification in late 2010 and 2012, respectively. Those particular years are included in the respective post-CMFO periods, since we presumed that finance officers would use what they learned as they completed the eleven-month long curriculum.

Model Estimation

To test whether the CMFO training had any independent effect on the number of annual audit findings (Hypothesis 1), a cross-sectional time-series regression was estimated and organized as panel data for the cities. Panel data make it possible to address problems associated with the unobserved factors that differ across units but are time consistent. Panel data may exhibit issues with unit effects, heteroskedasticity, or serial correlation. A key issue with panel data concerns consistency in the individual effect of each unit, or in this case, the city (Park 2011). If the individual effect of each city is consistent, then the same regression equation characterizes all cities at all points in time (Beck and Katz 1995). However, the presence of unit effects suggests that each city systematically differs on the dependent variable. History, culture, or other city characteristics may account for these differences.

The panel data in this study exhibited unit effects, heteroskedasticity, and serial correlation. Accordingly, a feasible generalized least

squares (FGLS) model with corrections for heteroskedasticity, serial correlation, and city fixed effects was the method for testing the Hypothesis 1. The variance inflation factor was 1.58 well below the 10.0 threshold for evidence of collinearity among the independent variables.

To test whether cities had fewer serious types of audit findings (material weaknesses) in the post-CMFO period (Hypothesis 2), we examined the magnitude of change in both deficiencies and material weaknesses. If sizable and significant reductions occurred in both material weaknesses and deficiencies, then that finding indicates that finance officials did not focus on just the easier to remedy deficiencies but also worked to resolve more serious risks to city finances.

Control Variables

Following previous research, several control variables were included in the analysis: population size, type of municipal executive leadership (professional or elected), number of employees per capita, median household income, and the mean household education level (Folz and Abdelrazek 2009; Andrews and Boyne 2010). The results from the cross-sectional time-series FGLS fixed effects model that specifies the impact of the CMFO program on the number of municipal audit findings controlling for differences in these community features follows the subsequent section that describes trends in the frequency of audit findings.

Trends in Municipal Audit Findings

The total number of audit findings for the sixty cities during 2007–2014 was 952. Audit findings declined 44 percent between 2007 (160 findings) and 2014 (90 findings; additional data are available in Online Supplemental Figure 1). This pattern of decline suggests continued improvement in cities' financial management performance, but it presents a challenge for causal analysis. The task is to ascertain what,

if any, portion of the observed decline in audit findings post-CMFO might be attributable to the program. We speculated that expanded regulatory and oversight activities by the Tennessee Comptroller's Office might account for the decline observed in the number of audit findings before implementation of the CMFO program.

A statistically significant difference occurred in the mean number of audit findings pre- and post-CMFO. The number of audit findings declined from 612 during the pre-CMFO years to 349 in the post-CMFO years (a 44 percent reduction). The pre-CMFO mean was 6.91 findings compared to a mean of 4.75 findings in the post-CMFO years. (Detailed data are available in Online Supplemental Table 1.) These means suggest the kind of expected improvement in financial management performance if the CMFO training was effective. Nonetheless, this evidence is correlational and by itself does not mean that the CMFO program caused the observed decline in audit findings. A statistically significant difference in the mean number of annual audit findings pre- and post-CMFO is necessary but not sufficient evidence for causation.

Means can mask considerable variation in performance among cities, and therefore, it is useful to examine whether any particular features distinguished cities with different levels of success in reducing the number of annual audit findings. For example, might smaller cities with fewer staff resources find it more difficult to implement internal controls to meet standards for segregation of duties? Might cities with different forms of government or types of chief executives have variable levels of success in reducing audit findings? In other words, how broad and widely shared was the success in reducing the mean annual number of audit findings?

There was variation among cities in the extent to which they reduced the number of their audit findings post-CMFO. Overall, twenty-six cities recorded a decline in audit findings, twenty-three had no change in the number of audit findings, and eleven communities actually had more audit findings in their

post-CMFO period. Among the twenty-three cities that had the same number of audit findings during their pre- and post-CMFO periods, ten (43.5 percent) had “clean” audit reports with zero audit findings. Consequently, the CMFO training had the potential to help officials in fifty cities to reduce the number of audit findings.

The mean population of the cities in each of these categories suggests that the population size was unrelated to financial management performance. Cities with a higher mean number of post-CMFO audit findings had the largest population mean, while cities with no change in the number of audit findings had the smallest mean population. Cities with fewer audit findings had a mean population that fell between the means for the other two groups. (Detailed data are available in Online Supplemental Table 2.)

Previous research suggested that professional managers and administrators may affect municipal service performance (Carr 2015; Folz and Abdelrazek 2009; Feiock, Jeong, and Kim 2003). Accordingly, we expect that cities served by an appointed city manager or city administrator will exhibit better performance in annual audits than cities led by elected chief executives. The assumption that underlies this expectation is that professional managers and administrators are likely to have more training, education, and experience in municipal finance operations that should translate into “cleaner” audit reports compared to their popularly elected counterparts.

A city manager or a professional administrator served as the chief executive/operating officer in thirty-five cities (“appointed”). Elected mayors without an appointed city administrator or chief operating officer (COO) served as chief executives in twenty-five cities (“elected”). Table 1 compares the mean number of audit findings in each group pre- and post-CMFO. Overall, cities with an “appointed” leader (professional manager or administrator) had a statistically lower mean number of audit findings during both their pre- and post-CMFO certification periods. Cities with an elected chief executive leader had a higher mean number of

Table 1. Mean Number of Audit Findings Pre- and Post-CMFO for Cities with Elected or Appointed Leadership.

| | Elected | Appointed |
|---|---------|-----------|
| Mean number of audit findings pre-CMFO | 7.36 | 5.91 |
| Mean number of audit findings post-CMFO | 5.20 | 5.08 |
| Difference | -2.16 | -0.83 |
| t Value | 2.51 | -1.3 |
| p Value | .02 | .20 |
| Number of cities | 25 | 35 |

Note: CMFO = Certified Municipal Finance Officer.

audit findings in both periods. This pattern comports with previous research that suggests professional management can make a positive difference in service performance.

The magnitude of the mean reduction in audit findings in cities with elected leaders suggests that CMFO certification may have had a larger impact in these communities than in those with appointed leaders. Audit findings in cities with elected leaders declined by an average of 2.16 during the post-CMFO years, a difference of about 30 percent. Audit findings in cities with appointed leadership experienced a more modest .83 mean decline. This result suggests that cities without the services of professional manager or administrator might expect to have a more dramatic performance improvement after their finance officer completes the CMFO program.

Model Results

To test the hypothesis that CMFO certification leads to a reduction in municipal audit findings, cities’ audit findings are regressed on the CMFO program (coded 0 or 1, respectively, for pre- or post-CMFO city-years), and several community features identified as relevant in research cited previously. These variables include type of city leadership (elected = 0 or appointed = 1), population size, number of employees per capita, percentage of city population with at least a high-school level

Table 2. Cross-sectional Time-series FGLS Estimates of the Number of Municipal Audit Findings with City Fixed Effects, 2007–2014.

| Variable | Coefficient |
|--|-------------|
| CMFO | −0.1089** |
| Total population | −0.0000154 |
| Type city leadership (elected or appointed) | 2.20** |
| Number of city employees per capita | 52.06 |
| Percent high school graduate or higher in city | 0.00758 |
| Median household income | 1.55 |
| Number of observations | 480 |
| Number of groups | 60 |
| Wald χ^2 | 1,604.03 |
| χ^2 probability | .000 |

Note: The FGLS model has corrections for city-fixed effects, heteroskedasticity & autoregression (AR1). Coefficients are unstandardized. FGLS = feasible generalized least squares. ** $p \leq .05$.

education, and median household income. (Summary statistics for the community features are available in Online Supplemental Table 3.)

The data in the model consist of pooled cross-sectional, time-series, panel data for cities for years 2007–2014. The city-year is the unit of analysis. With panel data, it is possible to address problems associated with the unobserved factors that differ across units but are time constant. Fixed effects specification accounts for unobserved factors by including a binary variable in the model for each city except one (Park 2011).

Diagnostic tests indicated that the data exhibited heteroskedasticity and serial correlation.¹ To address these issues, the model was estimated using a FGLS routine with corrections for heteroskedasticity, serial correlation, and city fixed effects. The results of the test for Hypothesis 1 in Table 2 show that the CMFO program had a statistically significant independent impact on reducing the number of audit findings controlling for the effects of type of community leadership type and several community features. While the magnitude of the impact of the CMFO certification was a modest reduction of .11 audits per year, the noteworthy

finding is that the CMFO program did have an independent effect on improving financial management performance as measured by a reduction in audit findings controlling for the effects of the other variables in the model. Only one other variable, type of city leadership attained statistical significance, but it was not in the expected direction.² None of the other variables in the model had a statistically significant impact on the number of audit findings.

Paths to Performance Improvement

Considering that CMFO certification contributed to some of the observed decline in the number of municipal audit findings, it is worth exploring how this may have occurred. What did city finance officers do after their CMFO training to achieve this outcome? Did some focus on correcting just the easier to remedy audit deficiencies rather than the more challenging and difficult to correct material weaknesses? In other words, was improved performance the result of targeting the “low-hanging fruit” among audit findings or did CMFO-trained finance officers seek to fix both types of audit findings?

The results in Table 3 suggest that city finance officers addressed both deficiencies and material weaknesses with success. Overall, audit findings declined by 44.4 percent. Deficiencies dropped by 47.5 percent, and the number of material weaknesses fell by an impressive 40.0 percent. The *t*-test results indicated a statistically significant mean reduction in deficiencies and a mean reduction in material weaknesses of nearly comparable magnitude, although the difference did not quite attain statistical significance. Nonetheless, the large percentage reductions in both types of audit findings post-CMFO suggest modest support for Hypothesis 2.

Resolving the more serious threats to the accuracy of financial statements and proper management of city finances is a daunting challenge. That CMFO-trained finance officers made substantial progress in this arena suggests that they did not “game the metric” by focusing on just the easier to resolve audit deficiencies.

Table 3. Reduction in Audit Findings by Type, Pre- and Post-CMFO Certification, 2007–2014.

| Type Deficiency | Pre-CMFO Certification | | Post-CMFO Certification | | Percent Change Pre to Post CMFO Certification |
|---------------------|------------------------|---------|-------------------------|---------|---|
| | N | Percent | N | Percent | |
| Material weaknesses | 250 | 40.8 | 150 | 44.1 | –40.0 |
| Deficiencies | 362 | 59.2 | 190 | 55.9 | –47.5 |
| Totals | 612 | 100 | 340 | 100 | –44.4 |

Note: CMFO = Certified Municipal Finance Officer.

The practical significance of this finding is that the CMFO training appears to have communicated the importance of correcting *both* major and minor issues that represent risks to the accuracy, transparency, and control of city finances.

Matching external audit findings with the CMFO topic most closely related to the nature of the audit finding provides some perspective on the most common types of challenges in managing city finances in Tennessee and the CMFO curriculum topics that may need particular emphasis. The largest number of audit findings involved problems related to internal controls. This category accounted for almost half (462 or 48.5 percent) of all audit findings identified by external auditors. These problems generally related to a lack of or an insufficient level of oversight and segregation of duties to provide a reasonable level of assurance that fraud, waste, corruption, or noncompliance with applicable law and policies would be detected and prevented in the community.

Problems related to governmental accounting and cash management accounted for the next two largest proportions of audit findings with 18.5 percent and 14.4 percent, respectively. Accounting issues spanned a broad range of concerns that included, for example, a lack of adequate, accurate, or timely documentation of financial transactions, accounts payable, or reconciliation of account balances. Cash management problems involved, for example, inadequate custodial care of municipal resources, failure to follow or adopt deposit or investment policies to safeguard assets, or an inability to maintain adequate liquidity to cover payroll or other expenditures. (More detailed information about the distribution of audit

findings by subject, pre- and post-CMFO is available in Online Supplemental Table 4.)

Altogether, internal control, governmental accounting, and cash management accounted for 81.4 percent of audit findings. During the post-CMFO years, city finance officers made substantial progress in reducing all three types of findings, but they had the most success (–50 percent) in reducing problems associated with governmental accounting. Internal control remained as the most challenging arena. For cities with small staffs in particular, implementation of adequate controls to prevent and detect undesirable events represents an enduring challenge. Proper segregation of duties, for instance, requires that the person initiating a transaction will not be the person who approves the transaction. This is a difficult standard to meet when there are few personnel available and authorized to handle financial transactions.

Continued progress in reducing the number of audit findings will depend at least in part on the extent to which local officials choose to invest in the design and operation of an internal control system that meets “Green Book” standards (Wilson 2017). The implication for those who design and deliver the CMFO curriculum and for those who offer the required continuing education credits is clear: build on the program’s success by tracking and communicating to finance officers the best practices for internal control, accounting, and cash management.

Conclusion

The results from this analysis indicate that the CMFO program helped city finance officers

to reduce the total number of annual audit findings. Sizable reductions in both the number of deficiencies and material weaknesses post-CMFO suggest that credentialed city finance officers embraced and worked to implement the policies and practices that lead to a cleaner audit. The resulting improvement in financial management performance represents a significant reduction in cities' exposure to a variety of serious operating risks. In other words, better financial management means improved risk management.

Good risk management means that a city has in place the necessary preventive and detective controls to reduce the city's exposure to fraud, errors, omissions, and delays, any one of which could result in immeasurable damage to a city's public image, financial stability, and service quality, not to mention the possible career ending implications for elected and appointed city officials. A cleaner audit means that a city is less likely to lose assets or grants due to fraudulent reporting, misappropriation of assets, or illegal acts by employees or vendors. A cleaner audit also means that the city has a financial management system in place that is less likely to tolerate or ignore poor business decisions that result in the inefficient or ineffective use of scarce tax resources. Finally, a cleaner audit suggests that the city's chief finance officer has endeavored to model integrity and the ethical values that inspire emulation by other city employees. These are all important ways that professional certification of city finance officers adds value to local governance.

When it comes to handling city finances in ways that meet auditing standards, this analysis finds that a state mandate for local government finance officers to complete a rigorous professional certification program as a job requirement appears to be a strategy that can help communities to advance a professional organizational culture in which fiduciary responsibilities assume premier importance. City officials rarely welcome state mandates. However, when there is credible evidence to show that better performance follows, they may be more likely to embrace these policy initiatives.

While the results from this analysis apply to communities in one state, expanded research on the impacts of professional training and certification in other service operations and in other governments can provide additional documentation of the return on the investment in training. If empirical evidence continues to demonstrate the value of professional training for improving performance outcomes, then the groundwork is established to build stronger support for and enhanced public confidence and trust in the ability of local government to manage fiscal resources legally, responsibly, and in ways that are transparent and accountable. Such evidence is a reasonable starting point to build a foundation for a revitalized connection between citizens and their government.

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Supplemental Material

Supplementary material for this article is available online

Notes

1. Heteroskedasticity occurs when the variance of the unobserved error conditional on the explanatory variables is not constant. Heteroskedasticity yields biased variances that result in confidence intervals and *t* statistics that are not valid (Wooldridge 2010). Serial correlation occurs when a value for a variable is influenced by its own value at a previous time (Kennedy 2005). A Wooldridge test for serial correlation indicated the presence of first-order autocorrelation.
2. The inverse relationship between the number of audit findings and type of city leadership may be attributed to what Kennedy (2005) described as "dynamic confusion." While fixed effects estimates enable the control of unobserved factors, it estimates short-run reactions and consequently

the sign of the coefficient may be influenced by short-term factors. A random effects specification can detect the presence of short-term effects. This procedure resulted in the expected negative coefficient for type of city leadership indicating that cities with professional leadership did indeed have fewer audit findings.

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