Modeling Public Management: What we know and what we need to know

Sangyub Ryu
International University of Japan

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Sangyub Ryu
Public Management and Policy Analysis Program
Graduate School of International Relations
The International University of Japan
777 Kokusai-cho, Minami Uonuma-shi
Niigata, 949-7277, Japan
Email: sangyubr@iuj.ac.jp

Abstract

The field of public management has accumulated a great deal of knowledge, but current studies have investigated public management only partially and have failed to incorporate all aspects of public management. To correct any possible biases and encompass all of the aspects of public management, O'Toole and Meier (1999) proposed a contingent model of public management, which predicts organizational performance as a function of previous performance, organizational environments, organizational stability, internal management, and external management. Since their proposal, the model has been tested and mentioned 256 times as of this writing, and 30 peer-reviewed articles have actually adopted the model for their analysis. This study aims at investigating the validity and reliability of the model by reviewing the 30 journal articles that adopted the O'Toole-Meier model. After the review, this study suggests future research questions to develop the model.

INTRODUCTION

Researchers of public management have studied various aspects of public management and their possible effects on organizational outcomes and outputs. As a result, a significant amount of knowledge has been built up about public management, such as leadership, motivation, organizational structure, and networking. However, these efforts have been made separately, or sometimes jointly, without a systematic approach, and the accumulation of knowledge about public management is unorganized. For this reason, O'Toole and Meier (1999) developed a model of public management that incorporated management components with other factors in order to understand the outcomes and outputs of an organization/program. Their model included organizational stability, internal management, and external management, as well as organizational environments, which have been the themes of public management; thus, the model provided the potential for organizing and structuring the elements of public management. Since O'Toole and Meier developed their model, it has been tested and mentioned 256 times as of this writing, and 30 peer-reviewed articles have actually adopted the model for their analysis (either O'Toole or Meier was involved in 20 of the articles). In spite of this empirical testing, the model needs further investigation in order to confirm its credibility and reliability. For this purpose, the present study reviews the 30 journal articles that adopted the O'Toole-Meier model, and summarizes how the model was tested, how the management factors were operationalized, and the findings. In fact, similar efforts were made by Meier and O'Toole (2007) and O'Toole and Meier (2011). They divided their model into several components and explained each component, referring to their previous work. This study follows a similar structure, but expands the scope from O'Toole and

Meier's work to others' work, which investigates the model in different contexts. In so doing, the discussion about the model can be enriched and expanded to different populations. Furthermore, this study attempts to investigate any limitations and problems in the model, and suggests future research for improving the model. For this purpose, this study first introduces the O'Toole- Meier model, followed by the data used to investigate the model. Then, the ways in which the aspects of stability, internal management, and external management have been studied will be reviewed. Lastly, this study poses questions and suggestions that future research may have to deal with in order to improve the model.

THE MODEL

Research to reveal the management-performance link that management matters for organizational performance has been extensively conducted, but only a few efforts to specify the model of the link are made (O'Toole and Meier, 1999). Lynn, Heinrich, and Hill (2001) introduced reduced form a model that relates program outputs with environmental factors, clientele characteristics, treatment, structures, and management. However, this model is framed in a way that theoretical and causal linkages are not fully specified (O'Toole and Meier, 2011). As a result, a set of precise and testable hypotheses cannot be not derived from their model (O'Toole and Meier, 2011).[2]

To incorporate all aspects of public management and to explore the management-performance link with testable hypotheses, O'Toole and Meier (1999) formalized the relationship between management and performance in terms of a mathematical model (O'Toole and Meier, 2011). The following explains the model step by step.

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[2] Although the O'Toole-Meier model is distinct from the model by Lynn et al.(2001), Meier and O'Toole (2007: 508) admit the possibility that "one might interpret [their] approach as one theoretical model that fits within the Lynn et al. logic of governance."

The basic model begins with the simple principle that organizations have inertial characteristics as shown in Equation (1); in other words, what organizations perform at time t (O_t) is very much predicted by what they did at time t-1 (O_{t-1}) plus any shocks to the system (e_t). Here, b_0 represents some rate of stability that discounts the inertial relationship between current and past performance (O'Toole and Meier 1999).

$$O_t = b_0 O_{t-1} + e_t \quad \ldots\ldots\ldots \text{Equation (1)}$$

O'Toole and Meier (1999) divide b_0 into two parts: stability (S) and internal management (M_1). Stability refers to any organizational processes that stabilize the organization, such as standard operating procedures (Meier and O'Toole, 2009a). In their first model, O'Toole and Meier (1999) introduced the term H (hierarchy) rather than S to denote "the extent of hierarchically stable structure and in recognition of the theoretical point that institutional forms for management and public programs range between fully developed bureaucratic patterns and much more loosely structured networks" (Meier and O'Toole, 2007: 523). However, they broadened the concept of hierarchy by developing more sub-dimensions of stability, which include the structural aspect (Meier and O'Toole 2007; O'Toole and Meier 2003).

M_1, or internal management, is defined as managerial efforts to manage the organization, such as setting goals, motivating employees, and managerial leadership (Meier and O'Toole 2009a). Both the stabilizing process (S) and internal management (M1) moderate the relationship of current and past performance.

$$O_t = b_1(S + M_1)O_{t-1} + e_t \quad \ldots\ldots\ldots \text{Equation (2)}$$

If an organizations has such a stable environment that environmental shocks are ignorable, Equation (2) may be the final model for public management. However, organizations are

more or less influenced by their environmental shocks (see Rainey (2009) for details).

That is, some environmental shocks penetrate into the organizational buffering system

and affect organizational performance (O'Toole and Meier 1999). Here, environmental

shocks refer to "any sort of disruption emanating from outside the administrative system

and buffeting the core organization" (Meier and O'Toole, 2009b. p.487). Environmental

shocks may be positive or negative; some shocks, such as the public's support for public

programs, may positively influence organizational outcomes, while some other shocks,

such as budget cuts, may negatively affect organizational outcomes. The point is,

environmental shocks that go through an organization's buffering system affect

organizational performance. As a result, e_t in Equation (2) is divided into environmental

shocks (X_t) and a random component e_t.

$$O_t = b_1(S+M_1)O_{t-1} + b_2 X_t + e_t \quad \ldots\ldots\ldots \text{Equation (3)}$$

Some theorists, including population-ecology theorists, argue that when environmental

shocks are controlled, there is a very limited role for management (Rainey, 2009).

However, the literature on management keeps finding significant impacts of management

in the environment-performance link. Meier and O'Toole (2009a) contend that managers

can take two strategies to actively manage environmental shocks. First, managers can

develop concrete stability in their administrative system (S) so that negative

environmental shocks can be buffered or at least mitigated (Meier and O'Toole, 2009a).

For instance, workforce stability can protect the organization's core performance from

budget cuts (Meier and O'Toole, 2009b) or a natural disaster (Meier, O'Toole, and

Hicklin, 2010). Thus, the buffering effects of organizational stability are modeled as

follows:

$$O_t=b_1(S+M_1)O_{t-1}+b_2(X_t/S)+e_t \quad \ldots\ldots\ldots\text{Equation (4)}$$

Another way of managing environmental shocks depends on the characteristics of the shocks. As stated earlier, shocks can be negative or positive. According to O'Toole and Meier (1999), when environmental shocks have positive impacts on organizational performance, a manager's strategies might be to exploit them in order to make full use of the opportunities (M_3). They also contend that when organizations face negative environmental shocks, a manager might focus his/her management on buffering environmental threats (M_4). The model incorporating M_3 and M_4 is as follows:

$$O_t=b_1(S+M_1)O_{t-1}+b_2(X_t/S)(M_3/M_4)+e_t \quad \ldots\ldots\ldots\text{Equation (5)}$$

In regard to public management and administrative systems that deliver outcomes and outputs of public programs, this model integrates three basic principles (Meier and O'Toole, 2007). First, the model treats the delivery of a public program as an autoregressive system, so that the program tends to reproduce the same outputs over time (Meier and O'Toole, 2007. p. 505). The autoregressive system represents that any small change in the model, including management, can result in dramatic changes in future outcomes over time (Meier and O'Toole, 2007). However, Meier and O'Toole (2003) also found that the impact of this autoregressive nature is not constant. According to their analysis, as organizational performance increases, the size of the impact of the autoregressive nature decreases; that is, a high-performing organization has little autoregressive nature, and the least reliable organizations are most constrained by their past performance (Meier and O'Toole 2003).

Second, the model is nonlinear (Meier and O'Toole, 2007). The relationships between the organization's current outcomes and past outcomes or environmental shocks are moderated by stability and management. Thus, instead of a strictly additive manner, the model is tested in a multiplicative manner.

Third, the model is contingent; the impacts of management on organizational outputs are contingent on various other factors (Meier and O'Toole, 2007). For instance, when organizations have low stability in their administrative systems, the model tests how management influences organizational outputs in these unstable settings (Meier and O'Toole, 2007).

Finally, the model investigates organizational or program performance operationalized as outputs and outcomes, even if performance is just one estimate of the various measures of the outputs and outcomes of the organizations and programs (Meier and O'Toole, 2007).

The following sections will elaborate more on the model's components, as well as the data used to test the model.

DATA

The O'Toole-Meier model has been investigated in various contexts. For instance, Nicholson-Crotty and O'Toole (2004) studied 570 municipal police departments in the United States (U.S.). They combined the data from the Uniform Crime Report survey given to police chief officials produced by the Federal Bureau of Investigation in 1998 and 1999 and the Law Enforcement Management and Administrative Statistics survey conducted by the Office of Justice Programs that was responded to by head law enforcement officials in 1997 and 1999.

Another study by Jacobson, Palus, and Bowling (2010) sampled more than 2,000 state agency heads from about 90 different types of state agencies (e.g., Medicaid, mental health, corrections, transportation, etc.) in the 1990s.

More recently, Cohen, Vaughn, and Villalobos (2011) tested the O'Toole-Meier model in the context of the White House. They used a Chief of Staff Project survey that sampled individuals from the White House Office, the Executive Office of the President, and cabinet and deputy cabinet officials who served in the Reagan, George H.W. Bush, and the Clinton administrations.

Outside of the United States context, Thurner and Binder (2012) studied ministerial bureaucracies involved in negotiations at the European Union (EU) Intergovernmental Conference in 1996. They conducted analyses on 30 documents produced by the top lawyers of the EU Council's Legal Service and interviewed one member of each of the 15 national delegations just after the summit.

Along with these different samples across nations, most of the research that adopted the O'Toole-Meier model was conducted with a large sample from the Texas K-12 education system. Because a series of O'Toole and Meier's work analyzed their model in Texas's educational context, some scholars have pointed out the limitations of the work and the sample. For instance, Luton (2007) makes a critical argument about O'Toole and Meier's (2004a) work on the Texas education dataset. First, he points out that the Texas school system may not represent the general practices of public administration. By referring to Bohte and Meier (2000), Luton contends that the large dataset from the Texas schools is likely to face reliability issues, because the dataset and its measures may be compromised by the way they were administratively collected,

coded, or reported. He further argues that the variables in the Texas school districts

dataset do not actually capture what they ought to capture; for instance, the students' pass

rates on the Texas Assessment of Academic Skills, which O'Toole and Meier used as an

organizational performance measure, do not represent a reasonable performance

indication.

As far as these concerns about the Texas school district data, Meier and O'Toole

(2009a) present different ideas. First, they argue that in order to see if the O'Toole-Meier

model is valid, adequate datasets should be employed for systematic investigation, and

they constructed the Texas school district datasets for this purpose. Moreover, they point

out that more public employees work in the education sector than in any other policy

sector, and "this Texas sample represents more than 1 percent of all governments of any

types in the United States" (p.7). Not all public organizations are highly professionalized,

decentralized organizations with substantial discretion given to street-level bureaucrats

like school districts are, which limits generalizations, but school districts are "the most

common public organization in the United States." (Meier and O'Toole, 2009a: 7).

Therefore, the Texas dataset is a representative public organization sample. Furthermore,

they argue that their series of studies has developed multiple new measures of

performance, management, and other control variables, which enable them to control for

different explanations of their findings. They also argue that using longitudinal data from

the same organizations allows them to address causality issues and validity issues.

Although the Texas school district data, among others, contribute to investigating

the O'Toole-Meier model, O'Toole and Meier (2011) suggest that future research needs

to apply the O'Toole-Meier model to different policy or country contexts in order to hold

its reliability and generalizability.

STABILITY

Stability refers to consistency in an administrative system, and it has been regarded as an

indispensable characteristic for bureaucracy (Weber, 1946 cited in O'Toole and Meier

2003). However, the current emphasis on new public management outdates

organizational stability, which has been replaced with the opposite idea, such as

administrative reform, organizational change, and innovative management. However,

scholars such as Terry (1995), the Blacksburg group, represented by Wamsley and his

colleagues (1990), and Kaufman (1960) view bureaucrats as conservators or as the best

guarantors of the public interest (O'Toole and Meier, 2003), and still emphasize stability

in an administrative system. As a result, a new light needs to be shed on stability in this

era of administrative reform, organizational change, and innovative management.

O'Toole and Meier (1999) also stress the importance of stability in managing

organizational performance, and their research distinguishes five dimensions of stability

as following (O'Toole and Meier, 2003: 45-46):

> •*Structural stability.* The preservation of organizational features over time. Structural
> stability itself is multidimensional and includes such elements as size, formalization,
> differentiation, and span of control.

> •*Mission stability.* The consistency over time of the goals of an administrative unit. When
> bureaus are asked to change course with frequency, they may experience disruptions. One
> distinctive feature of public agencies, furthermore, is that their mission is for the most part
> externally determined (Wilson 1989): policy changes, as established by political
> executives, legislatures, or judicial determinations, exert profound impact on the missions
> of agencies and therefore on the stability these units experience.

> •*Production or technology stability.* Lynn, Heinrich, and Hill (2000) contend that
> governance systems are characterized by a mode of production or type of technology, and
> that altering the form of production essentially shifts governance arrangements.[2] Analysts
> of public administration have long been aware of the importance of agency technology,
> particularly "core technology" (Thompson 1967). The recent emphasis on information
> technology and the many difficulties agencies have in adapting to it in a productive

fashion (see Fountain 2001) should not obscure the more general point that stability or
instability in agency technologies of all sorts can be consequential for performance.

• *Procedural stability.* Related to production but distinct from it is the set of rules,
regulations, and standard operating procedures used in a public agency. Units that pursue
the same missions with similar technologies sometimes develop quite different procedures
for getting the job done. Welfare-to-work programs illustrate this variation across the
states and even across offices within a given state (Sandfort 1999). Stable procedures
create opportunities for coordinating action across large numbers of individuals without
overwhelming their capacity (Allison 1971).

• *Personnel stability.* The types of stability mentioned above all deal with features of the
administrative system. Bureaucracy, according to Weber, is characterized by career
employees, so the people who occupy positions within the organization are an additional
element of stable administration. If the positions or their relationships shift over time, a
system experiences instability. But even if the structural and procedural aspects remain
constant and the goal of a public agency persists, changes in personnel can represent an
important variety of instability.

Each stability dimension, according to O'Toole and Meier (1999), may have two roles in

performance management: a moderating role in an autoregressive relationship and a

buffering role in the environment-performance link. As a moderating role in the

autoregressive relationship, O'Toole and Meier (2003, 2004b) test the impact of

personnel stability. They measure management stability and employee stability as sub-

dimensions of personnel stability. Management stability is measured by superintendents'

longevity and employee stability is measured by teachers' retention rates. Their studies

find that both management stability and employee stability play significant roles in

improving organizational performance. More interestingly, O'Toole and Meier (2004b)

find that personnel stability matters more for organizational performance when

organizations operate in a more networked setting. They provide two possibilities for

their findings. First, at least some form of stability and intergovernmental network

dependence interact each other, which result in better program outcomes (O'Toole and

Meier, 2004b). Second, they point out that personnel stability may give a manager a

chance to build trust between the manager and the manager's key environmental actors

by allowing the manager to perform repeated network interactions. In either case, personnel stability is found to matter for organizational performance in heavily networked settings (O'Toole and Meier, 2004b).

Although stability is not a main variable of interest, O'Toole, Meier, and Nicholson-Crotty (2005), O'Toole and Meier (2006,2009), Meier, Doerfler, Hawes, Hicklin and Rocha (2006), and Meier and O'Toole (2008) test the impacts of stability using the Texas school data, and they consistently confirm the positive impacts of personnel stability – management stability and employee stability – in organizational performance.[3]

Unlike previous research on stability, which focuses on effects in the autoregressive relationship between past and current organizational performance, Meier, O'Toole, and Hicklin (2010) investigate the buffering role of employee stability as a part of organizational stability. According to O'Toole and Meier (1999), organizational stability plays a buffering role in the relationship between a negative environment and performance. Thus, the model expects that organizational stability relieves an environment's negative shock on organizational performance. Meier, O'Toole, and Hicklin (2010) examine the impacts of Hurricanes Katrina and Rita on organizational performance. They find that the extent to which school districts were severely hit by hurricanes negatively influenced students' test performance, but such negative impacts were moderated if the school districts had a high level of personnel stability. This finding supports the hypothesis that organizational stability buffers organizational core missions from negative environmental shocks.

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[3] O'Toole and Meier (2009) control for both management stability and employee stability, and the results show that only employee stability is found to be statistically significant.

Other research has investigated organizational stability in contexts other than the Texas schools. For instance, using the Chief of Staff Project survey data from the Reagan, George H.W. Bush, and Clinton administrations, Cohen, Vaughn, and Villalobos (2011) posit that the personnel stability of the chief of staff in the White House may influence administrative performance. Considering that a chief of staff's lack of political experience – any previous political experience in the political system, such as campaigning or governing – may cause a trial and error period at the beginning of a president's term, Cohen and his colleagues treat the chief of staff's length of previous political experience as personnel stability. Also, they point out that conflicts between a president and a chief of staff generate instability in the overall working environment; thus, they measure another aspect of personnel stability as the extent to which a working relationship between a president and the chief of staff is good. Their analysis finds that both stability measures significantly improve the chief of staff's effectiveness.

More recently, Thurner and Binder (2012) analyze stability effects in the intergovernmental negotiation of the European Union. They view formal authority structure as a part of organizational stability, and operationalize it as the "allocation of formal competencies like agenda-setting and shared decision-making rights for a given negotiation issue" (824). They find that ministries holding agenda-setting rights and ministries with shared decision-making rights are more likely to perform better in negotiations as compared with ministries without any decision-making rights. Between ministries with agenda-setting rights and shared decision-making rights in a negotiation issue, they find that ministries with agenda-setting rights perform better in negotiations than ministries with shared decision-making rights. Their findings suggest that

organizations that have full authority to make decisions are more likely to perform better in negotiations. This type of stability is similar to the kind of structural stability that allocates the formal authority to make decisions to a single or a few units in an organization.

Studies reviewed so far focusing on organizational stability support the O'Toole-Meier model that organizational stability positively influences organizational performance. However, current organizational studies emphasize reform, innovation, and planned change for better performance (See Rainey, 2009). Moreover, as O'Toole and Meier (2003) point out, stability does not always lead to positive outcomes; there are certain contexts in which change results in better outcomes than stability. Therefore, stability needs to be understood and applied with a deep understanding of the context and situation in which an organization resides.

INTERNAL MANAGEMENT

Internal management, or managing the organization, is "management's contribution to organizational stability through additions to hierarchy/structure as well as regular operations" (Meier and O'Toole, 2003. p691). Internal management includes various managerial techniques; both "do things right" and "do the right things" are parts of the managerial techniques for managing an organization. Among others, Meier and O'Toole (2002) develop a measure of managerial quality to capture what has been investigated partially under the name of internal management. They argue that good management is a critical determinant of successful program performance. Researchers have paid attention to leadership as an important factor of good internal management, and research on leadership has been actively conducted (see Rainey, 2009 for details). However, Meier

and O'Toole point out that the current studies fail to capture leadership in an adequate manner. Moreover, the current attention on "entrepreneurial" management emphasizing risk-taking entrepreneurial activities contrasts with administrative "conservatorship" emphasizing protective conserving efforts, which raises a basic issue: what is appropriate management (Meier and O'Toole, 2002).

Moreover, current studies on public management have a few limitations. First, in order to capture a satisfactory measure of quality management, a longitudinal dimension need to be analyzed, but current studies mostly analyze a cross-sectional dimension (Meier and O'Toole, 2002). Second, Meier and O'Toole (2002) contend that current studies use perceptual measure of performance, which has a biasness problem (Andrews, Boyne, and Walker 2006; Meier and O'Toole, 2010). Above all, Meier and O'Toole argue that "the measurements developed thus far capture only a limited part of the concept of quality management" (631). To measure managerial quality, they focus on a manager's base salary. They contend that a manager's base salary is composed of quality factors and non-quality factors, and by using a residual analysis, they attempt to derive a manager's quality factors. In a school district context, for instance, to capture a superintendent's managerial quality, Meier and O'Toole (2002) regress a superintendent's base salary on the following factors:

- District characteristics: the district's total budget, tax rate, and average revenue per student;
- Human capital characteristics: experience as a superintendent, tenure in the current job, age, and the possession of a doctorate;
- Personal characteristics: gender, ethnicity; and

- Past performance: the prior year's test scores.

They find that these factors explain the variation of a superintendent's base salary by 78 percent (R-squared: 0.78). The residual from this regression, according to Meier and O'Toole (2002), captures something that non-quality factors fail to capture from a superintendent's base salary, and it may be some measure of managerial quality.

Since Meier and O'Toole (2002) developed this managerial quality measure, it has been tested as the main independent variable of interest or as a control variable to predict a district's performance (for instance, Meier and O'Toole, 2002, 2008; Meier, Doerfler, Hawes, Hicklin, and Rocha, 2006; Meier, O'Toole, Boyne, and Walker, 2007; Meier, O'Toole, and Goerdel, 2006; O'Toole and Meier 2003, 2004b, 2006, 2009; O'Toole, Meier, and Nicholson-Crotty, 2005). Findings from different research consistently find positive effects of managerial quality on organizational performance, suggesting that managerial quality is a significant factor for improving organizational performance.

Other efforts have been made to measure internal management. For instance, Nicholson-Crotty and O'Toole (2004) operationalize internal management by a factor analysis on internal management variables that represent the managerial development of internal operations comprised of "human resources decisions, technological innovations, and comprehensiveness of written directives" to advance organizational processes and procedures (p. 12).[4] Their findings support the expectation that internal management promotes organizational performance.

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[4] In a law enforcement context, Nicholson-Crotty and O'Toole (2004) factor analyzed the following items: 1) the presence of educational requirements for officers; 2) the extent of classroom training for new recruits; 3) the degree of field training for those recruits; 4) the presence of a collective bargaining policy for officers; 5) investment in technology that allows officers to access criminal histories, arrest records, and

As a part of internal management, O'Toole, Meier, and Nicholson-Crotty (2005) adopt Moore's (1995) idea that managerial tasks need to be understood in three ways: managing upward, downward, and outward. Here, managing upward and downward is related to internal management. According to O'Toole, Meier, and Nicholson-Crotty, managing upward represents an interaction between a manager and a manager's principal (overhead political leader), and managing downward refers to an interaction between a manager and a manager's agents (subordinates). In a school district context, they find that managing upward, or interacting with school boards, results in negative impacts on organizational performance. The negative association is reported by Meier, Doerfler, Hawes, Hicklin, and Rocha (2006), Meier, O'Toole, Boyne, and Walker (2007), Meier and O'Toole (2008), and O'Toole and Meier (2009). O'Toole, Meier, and Nicholson-Crotty (2005) further investigate possible reasons behind the negative association between managing upward and organizational performance, and they find that the association depends on the level of support; managing upward results in positive organizational performance when school boards support their superintendents and managing upward leads to negative organizational performance when the level of support from school boards is low. This implies that the competing relationship between political leaders and top managers leads to negative organizational performance, but the size of those negative effects decreases or even become positive depending on the extent to which political leaders support managers (O'Toole, Meier, and Nicholson-Crotty, 2005). Meanwhile, O'Toole and his colleagues find a mixed association between managing

crime analysis tools in the field; and 6) the comprehensiveness of written directives (which include the use of deadly force, appropriate considerations for discretionary arrest, procedures for juvenile arrest, treatment of mentally ill suspects, and stipulated use of less-than-lethal force).

downward and organizational performance; managing downward negatively influences high-end performance indicators (college-bound student performance in their study), while it positively affects low-end performance indicators (reducing dropout rates and increasing attendance rates in their study). These findings may indicate that superintendents apply less effort to students' college prep work, or devote their time and management more to underperforming schools that suffer from low-end performance (O'Toole, Meier, and Nicholson-Crotty, 2005). They conclude that the mixed pattern results from a top manager's emphasis or de-emphasis on particular goals; one goal may be attained at the expense of others.

Meier, O'Toole, and Goerdel (2006) further investigate managing upward and downward by separating their sample into two groups: male and female managers. They argue that female managers are "less hierarchical and more participatory, interactional, flexible, and consociational"(26). These characteristics help female managers to obviate conflicts with their political overhead leaders better, while leading to situations in which female managers have difficulty establishing strong authority and credibility over their subordinates. As a result, female managers' managing upward may benefit the organization's success, and their managing downward may not result in positive performance impacts as compared to male managers' internal management operations. This argument is empirically supported in the context of the Texas school districts.

Meier, O'Toole, Boyne, and Walker (2007) introduce "defending" as a means of internal management. Defending, according to them, is a managerial strategy that focuses on efficiency as its core task. Such a strategy may include giving up any other activities unrelated to the core tasks or encouraging organizational members to focus on only a few

clearly expressed goals (Meier, O'Toole, Boyne, and Walker, 2007). This approach

emphasizes a selection and concentration strategy, and Meier, O'Toole, Boyne, and

Walker (2007) find that this defending strategy, which stresses the efficient or effective

outcomes of a core task, results in a better performance of the organizational core task.

Recently, Cohen, Vaughn, and Villalobos (2011) measure internal management in

a different way. In the context of the White House, they focus on the chief of staff's

coordinating and advising role as a part of internal management. First, they argue that the

chief of staff is responsible for coordinating administrative processes to ensure the overall

internal operations of the White House. Second, they contend that the chief of staff is

responsible for advising the president and other members of the White House on policy

options and politics in order to manage the executive branch and decision making on

public policy agendas. As hypothesized, they find that a chief of staff who is good at

internal management – coordinating and advising – is more likely to be perceived as

effective.

<div align="center">**EXTERNAL MANAGEMENT**</div>

External management, or managing the environment, is management's effort to exploit

opportunities in the environment and/or to protect the organization from environmental

threats (O'Toole and Meier, 1999). Organizational performance is influenced by the

environment, which could be positive or negative. When an organization faces positive

environmental shocks, such as an increase in external resources, management can make

use of the positive environment in order to improve organizational performance. When

negative environmental shocks threaten an organization, management can dampen the

negative impacts. To investigate external management, a series of O'Toole and Meier's

research has focused on public programs operating in a networked setting. By network, Meier and O'Toole (2001) mean "a pattern of two or more units, in which not all the major components are encompassed within a single hierarchical array" (p. 272). As Hall and O'Toole (2000) find, most public programs are designed to operate in a networked setting, and public management is required to put effort into managing outward (Moore, 1995) or managerial networking – "a manager's effort to interact with key stakeholders in the environment" (Meier and O'Toole, 2007. p. 10).

The first empirical test of the impacts of managerial networking on program performance adopting the O'Toole-Meier model is conducted by Meier and O'Toole (2001). Using the context of U.S. public education, Meier and O'Toole focus on the extent to which superintendents frequently interact with their key environmental actors "who are not direct line subordinates or superiors" (p. 281). They create a managerial networking scale via factor analysis for a superintendent's time allocation of interaction with five key actors, which loaded on the first factor. They derive a measure of managerial networking from the factor scores of the factor analysis with higher scores indicating active networking. Their empirical analyses clearly find that a superintendent's active networking improves organizational performance. Moreover, networking interacts with environmental shocks in such a way that active networking increases the positive impacts of environmental resources on organizational performance while it decreases the negative effects of environmental constraints on organizational performance (Meier and O'Toole 2001).

The positive effects of managerial networking on organizational performance have been empirically confirmed by various studies. For instance, Nicholson-Crotty and

O'Toole (2004) investigate the externally oriented networking activities of police chiefs in the context of municipal law enforcement,[5] and find that active networking is likely to increase crime clearance rates. In the context of the European Union, Thurner and Binder (2012) investigate the networking of bureaucratic agents by measuring the out-degree of communication and coordination within and across governmental sub-units, which are the Foreign Ministries and any other ministries and . Unlike the authors' expectations, domestic networking between the within-governmental sub-units is found to be statistically not associated with negotiation performance, regardless of whether the unit is the Foreign Ministries or any other ministries. As for the effects of trans-governmental networking, however, Thurner and Binder (2012) find different results. Trans-governmental networking by the non-Foreign Ministries negatively influences negotiation performance, while trans-governmental networking by the Foreign Ministries positively influences negotiation performance. This result may be due to the characteristics of the Foreign Ministries, which have responsibility for coordination within the cabinet and represent the government internationally (Thurner and Binder, 2012).

Some scholars have studied gender effects in managerial networking. For instance, Meier, O'Toole, and Goerdel (2006) examine whether gender difference influences the effects of managerial networking on organizational performance. They argue that male managers and female managers face different situations. First, they point out that male managers benefit more from their informal connections than female managers. Moreover,

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[5] The authors conduct a factor analysis on the following three survey items to derive a factor score measure of externally oriented networking activities: the "comprehensiveness of their community policing activities," the "comprehensiveness of their networking activities," and the "comprehensiveness of the public feedback system for the department."

women in upper management positions are rare especially in Texas school districts; thus, female managers may have fewer opportunities to engage in this type of important networking (Meier, O'Toole, and Goerdel, 2006). Meanwhile, according to Meier, O'Toole, and Goerdel (2006), women are more consociational than men. As a result, it may be easier for female managers to improve their boundary-spanning capabilities; as a result, female managers may benefit more from networking (Meier, O'Toole, and Goerdel, 2006). Given these mixed expectations, the authors find that a male superintendent's networking positively influences students' test performance, while a female superintendent's networking negatively influences this performance. However, this does not necessarily confirm their hypothesis, and more research needs to follow. As for gender differences in management, Jacobson, Palus, and Bowling (2010) examine managers in state agencies. They investigate male and female administrators' networking, and find that female administrators' networking with citizens and clientele groups negatively influences governmental reform, while female administrators' networking with other agencies improves reform as compared to male administrators' networking. Such mixed results suggest the need for future research on gender differences in the effects of networking. Moreover, studies by Meier, O'Toole, and Goerdel (2006), Jacobson, Palus, and Bowling (2010), and Thurner and Binder (2012) imply that networking matters, but its effect size differs in accordance with the characteristics of the networkers.

A different approach to understanding the effects of networking has been attempted. For instance, based primarily on managerial networking as measured and used by Meier and O'Toole, Goerdel (2006) differentiates proactive network management and

reactive network management. Proactive network management refers to managerial networking initiated by the manager, and reactive network management refers to managerial networking initiated by environmental actors. Goerdel (2006) argues that proactive managers are more likely to create a favorable environment in order to control the agenda. As a result, proactive managers are able to frame and synthesize network interactions which lead to meaningful cooperation and better organizational performance (Goerdel, 2006). By the same token, reactive network management fails to control the agenda, fails to frame and synthesize network interactions, which eventually negatively influences organizational performance (Goerdel, 2006). Based on the data of who initiates the last contact, Goerdel (2006) empirically confirms that proactive network management is critical for organizational performance. However, she admits that managers who do not initiate the last contact are not necessarily strategically ineffective. Thus, future research with improved initiation measures needs to follow to confirm her argument.

The effects of managerial networking on organizational performance are even more crucial in intergovernmental networks. O'Toole and Meier (2004b) investigate the structural networks of Texas school districts with their funding sources as an intergovernmental dimension of their organizational environment. Their analyses find that managerial networking matters more for organizational performance when school districts receive higher amounts of state aid. Here, higher state aid means more dependence on a single key player in the network, and external managerial effort exploits the financial benefits from the network (O'Toole and Meier, 2004b). Moreover, from their analyses on managerial networking and network complexity, O'Toole and Meier

(2004b) find that a simple network structure allows top managers to concentrate their external managerial efforts on managing the actors in their networks more effectively, so that their managerial networking effects become maximized. For top managers, this finding implies that the effects of managerial networking on performance are contingent on the network settings in which the top managers interact.

As for measuring managerial networking, Sargent (2011) takes a different approach. Using the superintendent's management survey in the Texas school districts, he differentiates between internal management and external management based on formal accountability. He measures internal management based on the factor analysis of the superintendent's frequent contacts with external organizations to which superintendents are directly accountable. The external organizations include school board members, the Texas Education Agency, and federal education officials. He derives external networking from the superintendent's frequent interactions with parents, local business leaders, state legislators, other superintendents, and teachers associations. He contends that internal networking may focus on issues of compliance and implementation to satisfy accountability, while external networking may aim at other goals, such as obtaining information from parents or other superintendents to improve student performance. His analysis finds that internal networking does not significantly influence performance, while external networking improves students' performance. He concludes that "all managers practice [internal networking] and that those that go above and beyond are those that network externally. Another possibility is that [internal networking] is simply associated with some other form of performance" (348).

Not all research adopting the O'Toole-Meier model has treated managerial networking as external management. For instance, Meier, O'Toole, Boyne, and Walker (2007) develop the concept of reactor and prospector. Reactors are a manager's strategic choice not to take an action in response to the environment and to wait until something occurs. To measure reactors in the context of Texas school districts, the authors focus on the extent to which a regulatory agency (the Texas Education Agency) influences policies set by a district. Prospectors are a manager's strategic choice to seek opportunities to exploit the environment (Meier, O'Toole, Boyne, and Walker, 2007). Meier and his colleagues contend that prospectors may pursue changes and proactive actions; thus, to measure prospectors, they incorporate proactive network management as introduced by Goerdel (2006) and the extent to which superintendents advocate major changes in school policies. Their findings show that both reactors and prospectors clearly influence high-end performance indicators (high college board scores and SAT scores), but they do not strongly influence an organization's core performance (Texas Assessment of Knowledge and Skills (TAKS) pass rates) since the organization may not want to take risks. They conclude that prospecting strategies take the initiative to explore new or innovative possibilities; thus, prospecting strategies fit more with high-end performance than with an organization's core performance, which is pursued in a regulated context that does not favor risks.

Meier and O'Toole (2008) investigate possible buffering effects by incorporating organizational stability (S) and external management (M4) into their model. According to the O'Toole-Meier model, an organization's outcome is autoregressive, so that the effects of environmental shocks at time T on an organization's outcome at time T+1 is a product

of the size of the autoregressive term at time T and the size of the environmental shocks at time T (Meier and O'Toole, 2008). In this process, buffering operates either on the environmental shocks or on the autoregressive system, and Meier and O'Toole focus their buffering process on the latter. That is, to measure managerial buffering, they measure the correlation coefficient between the outcomes at time T and the outcomes from time T+1 for multiple years, and subtract the correlation coefficient from 1.0, which means that the larger the number, the greater the level of buffering. Using the Texas school district data, they find that managerial buffering positively influences organizational performance.

Cohen, Vaughn, and Villalobos (2011) take a different approach to examining external management's buffering effect. They focus on networking and buffering in the context of the chief of staff at the White House. Unlike previous studies that focus on the frequency of contact or out-degree of communication, which are widely used to measure networking, Cohen and his colleagues measure networking based on the extent to which a chief of staff is accessible to other staff members. As for managerial buffering, they measure the extent to which a chief of staff plays a guardian role in buffering the president's decision making from outside influences. Although a single survey item may not fully capture a manager's buffering role, it is a quite new approach to measuring external management's buffering role, because most research adopting the O'Toole-Meier model focuses on networking as buffering. Their analysis finds that both accessibility and guardianship are likely to increase the staffs' perception of the chief of staff's effectiveness.

Although studies on managerial networking mainly focus on positive effects, managerial networking does not always offer the positive effects on performance. For instance, Hicklin (2004) investigates the role of managerial networking when organizations have stable networks. First, she finds that school board stability (infrequent changes in school board members) and tax base stability (infrequent changes in the tax base) increase the probability of high performance. Given that, the interaction between network stability and active network management decreases the level of organizational performance, meaning that stability and network management are inversely related, or that the managerial role is not to exploit environmental opportunities but to buffer instability (Hicklin, 2004).

Another example is found in Hicklin, O'Toole, and Meier (2008). They argue that active managerial networking, in a certain sense, means exploiting more resources from the environment, but finite resources limits the benefits of managerial networking at a certain point. Moreover, active managerial networking makes top managers spend more time on external management and less on internal management; as a result, at a certain point, active managerial networking fails to pay off the benefits of internal management (Hicklin, O'Toole, and Meier, 2008). Thus, Hicklin and her colleagues hypothesize a possible nonlinear association between managerial networking and organizational performance, and empirically support the nonlinearity of managerial networking.

There may even be a dark side of managerial networking. O'Toole and Meier (2004c, 2006) investigate the effects of managerial networking on different program targets – advantaged (white) students and disadvantaged (non-white/low income) students – and find that managerial networking improves advantaged students'

performance, while no effects of managerial networking on disadvantaged students'

performance are found. When the effects of a superintendent's dyadic interaction with

external actors are analyzed, O'Toole and Meier find a superintendent's cooptation effect;

for instance, a superintendent's interaction with local business leaders improves

advantaged students' performance, but negatively influences disadvantaged students'

performance. In this case, the local business leaders are important stakeholders who are a

source of the district's revenue, and they pressure the superintendents to exert more effort

on the elite end of the educational continuum because their own children are likely to be

advantaged (O'Toole and Meier, 2004c, 2006). This finding draws cautious managerial

attention to the negative side of managerial networking.

The positive association between managerial networking and organizational

performance has been consistently confirmed by many other studies in the contexts of the

Texas school districts (see Goerdel, 2006; Hicklin, O'Toole, and Meier, 2008; Meier and

O'Toole, 2003, 2008; Meier, Doerfler, Hawes, Hicklin, and Rocha, 2006; Meier, O'Toole,

Boyne, and Walker, 2007; Meier, O'Toole, and Goerdel, 2006; O'Toole and Meier,

2003,2004b, 2004c, 2006, 2009; O'Toole, Meier, and Nicholson-Crotty, 2005; Owens

and Kukla-Acevedo, 2012; Sargent, 2011), law enforcement (Nicholson-Crotty and

O'Toole, 2004), state agencies (Jacobson, Palus, and Bowling, 2010), the European

Union (Thurner and Binder, 2012), and the White House (Cohen, Vaughn, and Villalobos,

2011).

However, the measurement of managerial networking has some issues of concern.

First, most managerial networking studies have been based on surveys. The surveys list

key environmental actors, such as other superintendents, school board members, and

local business leaders, and ask the superintendents how often they interact with each of them on a 6-point scale from daily to never. Second, a factor analysis is conducted from which all of the factors were loaded onto one factor. Then, a factor score is derived to capture the superintendent's networking style.

This method has limitations. As Meier and O'Toole (2005) point out, surveys does not capture the whole set of a superintendent's networks due to the limited lists of the key actors. As a result, the factor score-based managerial networking measure only captures the dyadic interaction between a superintendent and a few key actors only (Meier and O'Toole 2005). However, Meier and O'Toole argue that analyzing whole networks requires the thorough investigation of a small number of network actors, which may cause the "too few cases, too many variables" problem. Meanwhile, a factor score approach with factor analysis of the manager's interaction with a few limited key actors in a large-*n* study allows researchers to tap a manager's networking behavior and to examine the managerial networking impacts on performance. Moreover, a series of ongoing surveys allows testing of the validity and reliability of the managerial networking measure. All in all, Meier and O'Toole find that a managerial networking measure is valid and reliable. First, factor scores using the same nodes from different time periods with only a partial overlap in respondents are found to be similar. Second, factor scores derived from a different number of nodes are found to be correlated. These findings indicate that, although a factor score measure does not fully capture network interaction, it does capture managerial networking behavior.

WHAT IS NEXT? What we need to know about the model

Quite a number of studies have studied the role of public management using the O'Toole-Meier model, and remarkable achievements have been made. All in all, the studies commonly find that public management matters in terms of organizational performance.

However, some limitations and questions remain for future research. First, a question that might be of interest is whether the model is universal across sectors; or do different sectors have different management impacts on organizational outputs or outcomes? In this regard, Meier and O'Toole (2011) set multiple assumptions and develop hypotheses that some management impacts are different between the public and private sector. Future research may want to empirically test their hypotheses or further investigate the possible application of the O'Toole-Meier model to the private sector.

Another question is whether personnel stability and some of the benefits that result from turnover are compatible. Research, including O'Toole and Meier (2003), treats teacher retention rates as employee stability, and finds positive relationships between employee stability and organizational performance because street-level employees can take advantage of their longer periods on their job when they get things done. The research finds that employee stability positively influences performance. However, other studies find possible benefits of employee turnover. For instance, previous studies on employee turnover suggest a non-linear relationship between turnover and performance (Meier and Hicklin, 2008). Using the Texas school dataset, Meier and Hicklin (2008) find that turnover and organizational performance is an inverted U-shaped relationship when a task is difficult. This finding implies that employee stability and organizational performance may have a U-shaped relationship.

Related to the previous point, another question is whether stability and innovation can both be taken into account in the model. Since new public management (NPM) has attracted scholars' attention, public administration has emphasized "running a government like a business." The NPM movement has driven public organizations to change, reform, and innovate. Innovation is certainly an important factor for improving organizational performance. Meanwhile, O'Toole and Meier (2003) introduce production stability, which emphasizes consistency in the production mode. Of course, too much and frequent changes and innovation can cause confusion in the administrative process, which in turn results in the failure of adoption and application of technology. However, adapting to new technology and production mode innovation is critical to surviving in such a fast changing environment. Thus, some consideration on the benefits of instability needs to be taken into account in the model.

As for external management, most of the research adopting the O'Toole-Meier model treats managerial networking as a means of external management. However, management practices other than networking may be taken into account as external management strategies. For instance, Cohen, Vaughn, and Villalobos (2011) focus on manager's guardianship as external management. Meier and O'Toole (2008) measure a buffering process, although they did not separate stability and external management from the buffering function. By definition, external management includes any management that either exploits environmental opportunities or buffers environmental threats. Therefore, more management variables that capture each of these roles need to be investigated.

As for network management per se, a more elaborate measure for networking needs to be developed. Most studies adopting the O'Toole-Meier model use a factor score-based managerial networking measure to capture the level of networking action. However, as Meier and O'Toole (2008) point out, this measure does not distinctively capture the buffering effect itself or exploiting effect itself. Future research may want to create more elaborate survey questions by asking about the precise content of networking. If what people share or do through networks is identified, researchers can find out about the buffering effects or exploiting effects of networking.

Related to network management, some management practices, such as activation, framing, mobilization, and synthesizing, as proposed by Agranoff and McGuire (2001), may be applied. Individuals in networks activate or deactivate networks to arrange or rearrange network structures by attracting potential partners or removing extant participants (Agranoff and McGuire 2001). Framing behaviors in networks create new visions or goals of a network, while mobilizing behaviors motivate network participants to commit to the joint undertaking (Agranoff and McGuire, 2001). Lastly, Agranoff and McGuire point out that synthesizing behaviors fend off conflicts among network participants. Future research may want to examine each of these managerial functions in networks.

Last but not least, public organizations are expected to focus their management on not only competency values, such as efficiency, effectiveness, timeliness, and reliability, but also responsiveness values, such as accountability, fairness, and openness (Rainey, 2009). However, studies adopting the model focus on competent values, such as efficient outputs or the outcome performance of organizations and programs. Performance is an

important variable for public managers' concern, but performance is not the *only* variable; an emphasis on performance based on efficiency is sometimes not compatible with other normative values, such as equity or fairness. As O'Toole and Meier (2004c and 2006) find, public management can be coopted by political groups such that an emphasis on program performance can result in favoring the advantaged clients of the program only. In a certain context, due to political pressure, public management sometimes pursues the second best outcome in order to balance equity and efficiency. In such a case, the value of equity influences the level of program performance. This happens in real public management, and the model may want to add a normative variable to its equation to capture influences of responsiveness in organizational performance.

Conclusion

This study has reviewed 30 previous empirical studies that sought the management-performance link by applying the O'Toole-Meier model. Mostly they find that management matters in terms of organizational and program performance, and that the model has validity in explaining the effects of public management. Some critics argue that the Texas school district data are biased, so that studies applying the O'Toole-Meier model to the Texas school data are limited (Luton, 2007). However, authors using the Texas school district data to test the O'Toole-Meier model find the data valuable based on several reasons, such as its representativeness and the accumulation of longitudinal data (Meier and O'Toole, 2007). Moreover, different samples from law enforcement to state agencies to the White House and the European Union have been analyzed, and overall the findings are consistent with the Texas school district findings: management matters.

Overall, the current studies have revealed positive effects of organizational stability, internal management, and external management on organizational performance. However, some questions still remain unanswered, and future studies need to investigate them to improve the model. The agendas listed in this study are only a few; future research may have to modify the model in a developmental direction in order to improve the understanding of public management.

Although some limitations of the O'Toole-Meier model may remain, the findings of the current studies have consistently supported some key relationships that the O'Toole-Meier model theorizes (Meier and O'Toole, 2007). More work needs to be done to expand the model into various contexts with different or untested aspects of organizational stability and internal and external management. In so doing, challenging limitations will result in constructive modifications of the model and a better understanding of public management.

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