Towards a Theory of Public Value Managerialism: Examining CEO attitudes towards technological innovation in hospitals

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Introduction

Despite application in assorted policy domains, important theoretical and practical questions pertaining to public value remain unexamined. Not least among which pertain to how managers in social enterprises incorporate public value considerations into their managerial behaviors including strategy development, decision-making, and priority setting. This is particularly important with blurring of lines between public and private sectors within industries, health care being an example (see Lutz 2008). Further, Quadango (2010 p.126) suggests that “although health care systems are bound by policy legacies, embedded constituencies, and path dependent processes, they are not rigid, static, and impervious to change.” Through their management decisions health care institutions can be responsive to shifts in societal concerns and public values.

In this paper we consider mechanisms (i.e. role perceptions and organizational context) through which US hospital CEOs may connect public value concerns to managerial action (i.e. organizational priority setting), with or without consideration for larger policy considerations. We argue that the practice of setting managerial priorities affects how public values are pursued within the context of an organization. We utilize previous work on managerial priority setting as well as studies of role theory to develop a framework for understanding how both organizational context and CEOs’ perceptions of their roles as organizational leaders can affect their managerial priorities. Then, we identify a specific managerial priority, technological innovation, and investigate the empirical linkages between both of these types of variables and CEO reports of the priority of technological innovation for their organization. In addition, following Jørgenson and Bozeman (2007 p. 373-74) who state that “public values and public value are not the exclusive province of government, nor is government the only set of institutions having public
value obligations,” we explore whether hospital differences matter with respect to CEO emphasis on technological innovation, recognizing that technological innovation may exceed the specific economic interests of the hospital or hospital system. Finally, we provide a discussion of our findings and their broader implications.

Our findings are informed by 2010 survey data\(^1\) from more than 1,000 public, non-profit, and private hospital CEOs combined with operations data from the American Hospital Association survey. This paper contributes to the literature on public values by exploring linkages between existing theories of public value and public values as well as examining areas of convergence and divergence of public value priorities across industry sectors. It also contributes to the growing body of dimensional publicness research that suggests that sector differences alone are insufficient predictors of an organization’s value and value sets; in other words, managerial actions and beliefs may also play a significant role in guiding organizational value pursuits.

**Background and Theory**

The study of public value in public management theory and practice incorporates a number of diverse lines of inquiry and, accordingly, can begin from a number of perspectives. Bryson and colleagues (2015) provide a recent overview of public administration scholarship related to the analysis and application of public value frameworks. Specifically, they contrast Mark Moore’s (1995, 2013) managerial focused theory of creating public value and Barry Bozeman’s (2007) societal or policy level theory of public value failures and success. They argue that, “the challenge of integrating managerial action with societal or policy values is…difficult, because public values are numerous, often contested, and indeed may be in conflict

\(^{1}\) Funding to collect survey data from hospital managers and to purchase data from the American Hospital Association.
or even contradictory” (p. 14). However, they make a case for the importance of connecting and integrating these two approaches to public value by highlighting six practices through which connections may be constructed, including the processes of policy analysis, design, and evaluation; leadership; dialogue and deliberation; institutional and organizational design; formal and informal processes of democracy; and strategic management.

We concur that strategic management may be a particularly fruitful area of linkage between the two major theoretical approaches to public value. For instance, in Moore’s (1995) strategic triangle approach to creating public value, he argues that in addition to organizational capacity, public sector actors must consider their authorizing environment and the stakeholders in that environment who ultimately control whether the actions of public managers are legitimate. As such, the existence of the authorizing environment greatly constrains the actions that public sector managers may unilaterally take in pursuit of public value, meaning that within a given set of (broad policy level) public values whose pursuit stakeholders in an organization’s authorizing environment would endorse as legitimate, there is likely to be a lack of technical knowledge and consensus among all of the stakeholders regarding how this constellation of legitimate values should be prioritized and pursued.

We posit that organizational leaders are thus able to affect these legitimate public value pursuits through managerial action, a practice we label ‘public value managerialism’. In some sense, any theory of public value managerialism is, in part, a theory of public value priority setting. Scholars in the realm of science policy (Maricle, 2011) have described this as developing a public value logic – constructing relationships between instrumental and primary values including potential value hierarchies in order to pursue specified public values. Therefore, in this
paper we argue that understanding managerial priority setting is key to understanding an organization’s overall value pursuits.

In the hospital context, we argue that CEOs are guided by both current organizational context and their own perceptions of their role as chief executive officer, as they develop these priorities. Executive management of hospitals is widely recognized as making a significant contribution to organizational performance, although there is limited empirical evidence of this relationship (Vance and Larson 2002). There is a rich literature describing the impact of management practices on business success in other industries (Bass 1981), but the health care industry has a long history of claiming that standard management approaches and practices do not apply due to the internal and external environments unique to hospitals and their related delivery systems (Fottler 1987). While some organizations have considerable latitude in management practices, hospitals are thought to operate under greater constraints, related in particular to their public value pursuits and the perception of their legitimate role in the communities they serve (Hinings and Greenwood, 1988). For this and other reasons, hospital management practices have had limited empirical analysis (Kaissi and Begun 2008).

Organizational Context and Strategic Priority Setting

In order to pursue this line of inquiry related to managerial priority setting by hospital CEOs, we begin by examining research pertaining to managerial priorities and processes as they relate to organizational context more broadly. The proliferation of research pertaining to priorities and priority setting is explained by both the inherent value of understanding priorities but also the natural connections research on priorities has with other important domains of organization and management research. While much of the research pertaining to managerial priorities comes from research on business firms, we are cognizant that there are many lessons
here for public sector management theory development and practice. Moreover, we contend that theories of public value managerialism are not necessarily public sector specific.

Resource-based theories of competitive advantage (Santos 2000) contend that organizations have limited capacities to maximize a given set of objectives and, accordingly, must prioritize objectives (Christiansen, Berry, Bruun, and Ward, 2003). A key managerial decision then is which of the competing priorities to pursue at a given time (Verbeeten and Boons 2009). This choice involves balancing competing priorities of short-term and long-term business interests, as well as external stakeholders such as NGOs (Gladwin, Kennelly, and Krause 1995; Wu and Pagell 2011). Although managers may not have complete control over the way their priorities are carried out within an organization, they can affect change through performance feedback such as incentives and formal orders, as well as developing organizational culture and bringing in new personnel (Moynihan, Pandey, Wright 2012; Nielsen 2014).

Management scholars have also observed that managerial priorities are affected by a wide variety of factors including, for example, market and political constraints (Donaldson 2001; Pfeffer and Salancik 1978) as well as stakeholder involvement (Johansen and Zhu 2013). Organizational priorities can reveal much about an organization, especially for comparative purposes. For example, Miller and Roth (1994) use observations about managerial priorities as a basis for organizing manufacturing firms into three categories: caretakers, marketers, and innovators. Similarly, Youndt and colleagues (1996) clusters manufacturers into four strategic orientations; quality, delivery flexibility, scope flexibility and cost. There is a high degree of agreement that at least these four concerns described by Youndt and colleagues are key managerial priorities (Dangayach and Deshmukh 2001; Christiansen, Berry, Bruun, & Ward, 2003).
Business scholars have also identified a variety of “orientations” that managers and firms can use to structure their priorities. They argue that strategic priorities typically align around one of three orientations: market orientation, production orientation, and selling orientation (Noble, Sinha, and Kumar 2002). These orientations serve as guiding principles that influence an organizations managerial priorities and performance. For example, market oriented managers focus on providing long-term value for their customers (Morgan and Strong 1998; Noble, Sinha, and Kumar, 2002; Ruekert 1992) whereas, “production” oriented organizations prioritize efficiency, cost minimization, and mass distribution in order to deliver quality, low cost goods to a broad audience (Noble, Sinha and Kumar 2002). Meanwhile, selling oriented managers prioritize advertisement and high-pressure sales techniques, emphasizing short term gain over long-term relationships with customers (Noble, Sinha, and Kumar 2002; Lamb, Hair, and McDaniel 2000). The selling oriented approach typically involves significant advertising expenditures and marketing pressures that do not add to the value of the product (Day 1994).

While some studies indicate that market-oriented firms frequently outperform their competitors in traditional economic measures of performance (Pelham 2000; Narver and Slater 1990; Slater and Narver 1994;), others have shown more complex results; Bhuian (1998) finds no effect of market orientation on performance in international settings. Narver and Slater (1990) find that performance effects vary depending on other contextual factors, and contrary to expectations that selling orientation would be negatively associated with organizational performance, Noble, Sinha and Kumar (2002) find that selling-orientation strengthens performance at least in some situations. Depending on the culture of the firm and the external environment, any of these orientations can provide a competitive advantage. These seeming
conflicts reveal the need for further study on the relationship between market-based priorities, organizational orientation, and performance (Noble, Sinha, and Kumar 2002).

Particularly given the trend toward contracting government services out to private and nonprofit entities, cross-sector differences in management pressures and priorities are of interest to public management scholars. Public managers generally have to balance competing demands of a wider variety of interest groups than their private sector counterparts. The implications of that influence for governance are unclear (Nicholson-Crotty and Nicholson-Crotty 2004). Along with pressure from outside groups, a growing political movement is calling to measure performance in public organizations (Jennings and Haist 2004; Yang and Hsieh 2007; Moynihan et al. 2011; Nielsen 2014).

In contrast to private firms which focus primarily on economic achievements though, goals and performance in public organizations is much more difficult to define (Chun and Rainey 2005; Pandey and Wright 2006; Nielsen 2014). However, some cross-sectoral studies of ethical climate and ethical management exist (e.g. Wittmer and Coursey 1996; Berman and West 1994) as well as managerial value comparisons exist (e.g. Posner and Schmidt 1996; Stackman, Connor, and Becker 2006). Some scholars argue that there are key values such as accountability and reliability are broadly shared across sectors (Kaptein and Wempe 2002; Van der Wal, Graaf and Lasthuizen 2008); while the converse argument is that the public sector value of impartiality does not typically merit high importance in the private sector, while private sector values such as innovativeness and profitability are generally not as important to public sector managers. This indicates that while there are some similarities, public and private sector management priorities are significantly different (Posner and Schmidt 1996).
Role theory and strategic priority setting

In addition to sector differences that may contribute to variations in approaches to managerial priority setting, individual values and beliefs of managers may also underlie this type of priority setting. For instance, most literature on corporate priorities relating to values and social responsibility focuses on the individual values of managers (Maclagan 1998; Hemingway and Maclagan 2004). They identify corporate social responsibility (CSR) as a process through which “managers take responsibility for identifying and accommodating the interests of those affected by the organization’s actions” (Maclagan 1998, p.147). The personal values and interests of executives, mid-level managers, and employees who bring their values to work with them are generally seen as the driving force behind a firm’s socially beneficial actions (Hemingway and Maclagan 2004). However, Kahle et al. (1988) notes that personal values are not separable from public values. “As elusive societal goals change, individuals’ values will sometimes lead and sometimes reflect this change” (Kahle et al. 1988, p.35). For example, many firms view the pursuit of environmental goals as a corporate value (Russo and Fouts, 1997; Christmann, 2000; Melnyk et al., 2003). It is likely that corporate sustainability initiatives stemmed not solely from one or the other, but from the intermingling of the individual interest of executives and the broader public value of resource conservation and sustainability.

This approach to priority setting aligns well with role theory. “In a workplace setting, a role is a pattern of behaviors associated with responsibilities for certain processes, tasks, or outcomes” (Nesbit, Rimes, Christensen, & Brudney p.4). Role theorists argue that roles are social constructs, created both by the expectations that others place on a role occupant and by the actions and beliefs of the role occupant themselves (Miles, 2012). Scholars have examined roles in a variety of contexts (See Biddle 1986 for an overview). Empirical work on managerial roles
has utilized manager’s self-reports of the importance of various activities to provide a general description of the managerial role and tasks performed by managers in many different workplace settings (See Dierdorff, Rubin, and Morgeson, 2009). Importantly, different perceptions of a role may result in different types of role performance; for instance, when investigating managerial roles, Dansereau and colleagues (1975 p. 46) find that, “the degree of latitude that a superior granted to a member to negotiate his role was predictive of subsequent behavior on the part of both superior and member”. Therefore, drawing on these previous findings we argue that CEO role perceptions may also affect their managerial priorities.

**Hypotheses**

In order to examine the arguments made in the above discussion we choose a specific managerial priority, technological innovation, and develop three sets of hypotheses aimed at understanding why CEOs may prioritize this pursuit more or less highly. Technological innovation as a managerial priority is particularly interesting because it intersects both public and economic value pursuits. In terms of public value, technological innovation can be seen as both a primary and an instrumental value. As a primary value, hospitals pursue innovation for its own sake. Although ultimately any single innovation’s value must be judged by the impact that it has over time, a hospital may invest in information and medical technology innovations with the expectation that in general these investments will expand the societal knowledge base and result in a public return that exceeds the hospital’s economic return. Alternatively, innovation can, and perhaps more commonly is, regarded as an instrumental value, one that facilitates the achievement of other public values. Technology, especially information and medical technology, can be a major source of social change. For example, Stanton and colleagues (2002) in their work, *Innovations in Health and Medicine: Diffusion and resistance in the twentieth century,*
provide a historical perspective on social change occurring from technological innovations that vary as widely as ultrasound technology and organ donation. Further, in terms of generating public value, adopting a new medical product or process may allow the hospital to achieve greater efficiency. In other cases, innovations may enhance a hospital’s ability to treat certain types of patients, thereby generating public value by increasing the hospital’s ability to provide equitable care.

Notably, we do not argue that technological innovation is solely a public value interest. In many cases, hospitals may also pursue innovation with economic motives of increasing return on investment or augmenting their client base. Scholarly works on economic incentives for innovation and economic considerations of innovation diffusion provide insights by elucidating economic factors and considerations that are often central to the decision of whether to adopt a new technology (See Hall and Kahn 2003 for an overview).

Drawing on technological innovation’s potential for aligning with both public and economic value sets, we develop two related hypotheses related to the connections between CEOs’ role perceptions and the emphases that they place on either public or economic value in terms of technological innovation.

**Hypothesis 1a:** CEOs who agree that their role is to consider competition in the local health care market when making managerial decisions will prioritize technological innovation more highly.

**Hypothesis 1b:** CEOs who agree that their role is to find opportunities to serve the community with managerial decisions will prioritize technological innovation more highly.

Our second hypothesis stems from the literature related to sector differences and managerial priority setting. Van der Wal, Graaf and Lasthuizen (2008) make the case that there are fundamental value differences underlying priority variance between public, private and
nonprofit organizations. As evidenced by our previous discussion of managerial priority setting and organizational context, many of the arguments for differences in priority setting between the public, private, and nonprofit sectors draw on notions of different levels of market competition and political constraint. The implication is that private sector managers, primarily concerned with economic outcomes, prioritize service cost, efficiency, and competition more than either their public or nonprofit counterparts. Meanwhile, public, and to a lesser extent nonprofit, managers focus more on the political and public policy environment when setting their priorities and while efficiency may play a role, scholars argue that they are primarily driven by equity and other values that are difficult to clearly define (Fredrickson 2010; Johansen and Zhu 2013; Nielsen 2014). Regardless of whether sectoral value distinctions are quite so clear cut, especially as lines between sectors in many industries continue to blur, we draw on the idea that organizational and managerial priorities vary depending on the sector. Therefore, we hypothesize that we will also see sector differences, manifested in priority differences, among hospital CEOs.

**Hypothesis 2: CEOs in different industry sectors (government-owned, for-profit, nonprofit) will exhibit differences in priority levels for technological innovation.**

Finally, based on the general innovation literature we also construct hypotheses about CEO priority setting related to their organizational context. In particular, organizational size is often linked to propensity to innovate (Damanpour 1991; Camisón –Zornoza et al. 2004). Using meta-analysis techniques of studies of innovation across many different organizational contexts Camisón –Zornoza and colleagues (2004) find that this is a consistently positive and significant relationship in many different contexts. Further, studies specific to the hospital context have found organizational characteristics of hospitals to be related to their likelihood to adopt technological innovations (Kimberly and Evanisko 1981). In particular, Kimberly and Evanisko (1981) discuss larger size as being associated with economies of scale that make adopting new
technological innovations easier. Additionally, hospital occupancy is a key organizational context variable. Ultimately, the bottom line of hospitals is based on maintaining appropriate occupancy levels. We expect that when occupancy levels are low that technology innovation as a priority with become secondary to other pursuits that allow the hospital to maintain higher occupancy levels.

**Hypothesis 3a:** CEOs in larger hospitals will prioritize technological innovation more highly.

**Hypothesis 3b:** CEOs in higher occupancy hospitals will prioritize technological innovation more highly.

**Data**

In order to investigate these hypotheses we utilize data on managerial practices and priorities from a 2010 mail survey to over 6,000 top-level managers (CEOs) in hospitals providing health care ranging from general medical and surgical services to highly specialized services such as heart, cancer, chronic disease, pediatric and psychiatric care. The survey generated over 1,000 responses, producing a 16% response rate, considered high compared to other hospital surveys (Goldstein & Naor, 2005). In previous use of the data comparing managerial practices across hospital ownership sectors, the authors evaluated survey non response rate based on key organizational characteristics (such as ownership, region, service type, size, etc.) and did not find problematic non-response bias (Johansen & Zhu, 2013: 167). The Hospital CEO survey that provided self-reported measures of managerial priorities, was merged with the American Hospital Association (AHA) Annual Hospital Survey Database to provide numerous control variables such as ownership, size and services provided\(^2\). A key data note is important here. The survey data on CEO managerial practice is cross-sectional in nature.

\(^2\) See this website for citation information. http://www.ahadataviewer.com/about/hospital-database/.
However, with guidance of Johansen and Zhu (2013), we make sure that the control variables describing hospital ownership and structure were measured prior to the CEO survey using the AHA data.

**Dependent Variable**

Our key dependent variable is the level of priority that chief executive officers ascribe to technological innovation within their hospital. Surveys queried respondents about their hospital’s management priorities. Given a list of seven management priorities including community outreach, cultural sensitivity and diversity, customer satisfaction, employee turnover, facility expansion and improvement, performance indicators, and technological innovation, managers ranked these management priorities from most important (1) to least important (7). These responses produce an ordinal dependent variable; the categories, ranging from most important to least important, estimate each respondent’s underlying perception of the priority level of technological innovation. In order to facilitate data analysis and interpretation, responses to this question are reverse coded so that lower numbers represent lower priority levels and higher numbers represent higher priority levels. Table 1 below provides descriptive statistics for both dependent and independent variables.

**Independent Variables**

Several articles in the literature relate hospital chief executive officer characteristics to hospital performance (Clark, Murphy & Singer, 2014; Reiter, Sandoval, Brown & Pink, 2009). The most common personal characteristics that determine hospital performance include tenure in job (Souza, 2012), gender (Sexton, Lemak, & Wainio, 2014), physician status including educational degrees (Matthews, Collins, Collins, & McKinnies, 2013), and affiliation with a
professional association (Khaliq & Waltson, 2014). Due to current data limitations our study includes only tenure in position and physician (MD) status of the respondent.

In addition to these CEO characteristics we add a set of independent variables to capture various perspectives that respondents hold regarding their roles as chief executive officers. By asking CEOs to agree or disagree with statements about their role as chief executive officer we are able to develop an understanding of differing managerial approaches to performing the hospital CEO role. Surveys presented respondents with a series of statements about the CEO role and asked them to indicate their level of agreement with the statement on a Likert type scale ranging from strongly disagree to strongly agree. These statements included 1) whether competition in the local health care market is taken into consideration when making management decisions; 2) whether the CEO continually looks for opportunities to serve the community in which the hospital is located; 3) whether the CEO always considers last year’s performance when making management decisions; 4) whether the CEO always compares the hospital’s performance with peer hospitals when making management decisions; 5) whether patient feedback is taken into consideration when making management decisions; 6) whether patient outcomes are taken into consideration when making management decisions; 7) whether the CEO adjusts hospital structures and activities in response to external stakeholders; and 8) whether the CEO involves practicing physicians in hospital decision making processes. Although directional hypotheses are proposed for only the first two of these role perceptions, we include responses to the other statements as independent variables because the other statements capture performance management oriented roles may have an impact on a CEO’s decision to prioritize and pursue technological innovation. Further, we exclude from analysis responses to three additional role perception survey items. Two of these items deal solely with the CEO’s role in managing
external events and the third asks the CEO to report on his or her role in reconciling employee disagreements. Because there are no theoretical linkages between these types of roles and the priority level of technological innovation, they are not added to the model as independent variables.

Although we argue that role perceptions are likely important for understanding CEO public value pursuits, we do not believe that they are sufficient for total explanation of the variation found among hospitals. A hospital’s organizational context likely also affects the types of public values that CEOs ultimately decide to prioritize and pursue. There are various commonly utilized organizational level control variables for studies that include hospital data, including occupancy, bed size, Medicare payer mix, Medicaid payer mix, operating margin, system connection, JACHO accreditation, for-profit status, urban location, case mix index or complexity of patients, and per capita income in the hospital location (Kim, 2012). The Medicare and Medicaid payer mix is especially important given the recent Affordable Care Act health care reforms that are designed to address health status as well as health care delivery (Hardcastle, Record, Jacobson & Gostin, 2011; Gostin & Connors, 2010).

We are able to capture most, but not all of these variables related to hospital organizational context in the current study. First, we include occupancy as a control variable. We create this variable by dividing each hospital’s average daily census by the hospital’s total number of beds. Next, we create Medicare and Medicaid payer mix variables by calculating both Medicare and Medicaid inpatient days as a percentage of total hospital inpatient days. Two additional variables, reflect hospital size-- total number of hospital beds and the natural log of total annual expenditures. Additionally, we include Joint Commission accreditation status as well as whether the hospital is a sole community provider. Finally, we include hospital sector
(government-owned, for-profit, nonprofit) as a key aspect of organizational context. Given current data constraints, we are unable to include some of the other variables from the aforementioned list such as operating margin and case mix index.

Table 1: Descriptive Statistics

<table>
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<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>Min</th>
<th>Max</th>
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<td>1.54</td>
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<td>7</td>
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<td></td>
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<td>7.78</td>
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<tr>
<td>Respond to Stakeholders</td>
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<td>.61</td>
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<td>4</td>
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<td>3.06</td>
<td>.64</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
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<td>2.89</td>
<td>.71</td>
<td>1</td>
<td>4</td>
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<tr>
<td>Consider Patient Feedback</td>
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<td>.56</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Consider Patient Outcomes</td>
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<td>.50</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
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<td>3.21</td>
<td>.67</td>
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<td>4</td>
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<tr>
<td>Involve Physicians</td>
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<td>.52</td>
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<td>4</td>
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**Method and Results**

We employ an ordinal logistic regression model to estimate the effect of CEO and organizational characteristics on respondents’ perceived priority level of technological
innovation. Because of the structure of the dependent variable, the ordinal logistic regression model is the appropriate statistical tool for estimating the relationship (Liao, 1994). The model estimates log-odds of observing a particular score or less on the dependent variable (Norusis, 2011; Liao, 1994). Table 2 below summarizes the results of the model.

Table 2: Ordered logistic regression for the priority level of technological innovation

<table>
<thead>
<tr>
<th>Variable</th>
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<th>S.E.</th>
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<td><strong>CEO Characteristics</strong></td>
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<td>Physician Status</td>
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<td><strong>CEO Role Perceptions</strong></td>
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<td>Respond to Stakeholders</td>
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<td>.14</td>
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<tr>
<td>Serve Community</td>
<td>.378**</td>
<td>.14</td>
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<td>Consider Last Year’s Performance</td>
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<td>Compare Performance to Peers’</td>
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<tr>
<td>Consider Patient Feedback</td>
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<td>Consider Patient Outcomes</td>
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<td>Consider Market Competition</td>
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<td>-.255</td>
<td>.16</td>
</tr>
<tr>
<td><strong>Hospital Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Hospital Beds</td>
<td>.002*</td>
<td>.00</td>
</tr>
<tr>
<td>Occupancy</td>
<td>-1.20**</td>
<td>.44</td>
</tr>
<tr>
<td>Log of Total Expenditures</td>
<td>.011</td>
<td>.11</td>
</tr>
<tr>
<td>Joint Commission Accreditation</td>
<td>-.551**</td>
<td>.19</td>
</tr>
<tr>
<td>Sole Community Provider</td>
<td>.241</td>
<td>.22</td>
</tr>
<tr>
<td>Percent Medicaid</td>
<td>-.922</td>
<td>.53</td>
</tr>
<tr>
<td>Percent Medicare</td>
<td>-.787</td>
<td>.42</td>
</tr>
<tr>
<td>Government Owned</td>
<td>-.566**</td>
<td>.19</td>
</tr>
<tr>
<td>For-Profit</td>
<td>-.766**</td>
<td>.24</td>
</tr>
</tbody>
</table>

n= 561  
pseudo $r^2 = .036$  
prob $\chi^2 = 0.000$

*p<.05; **p<.01

We find variables associated with CEO personal characteristics, CEO role perceptions, and characteristics of the hospital in which the CEO works each related to the priority level that
CEOs give to technological innovation. First, tenure in position is significant (p<.05). The positive coefficient suggests that the longer a CEO has held his or her current position, the more likely he or she is to rank technological innovation as a higher priority for the hospital. It may be the case that as a CEO gains tenure in the job he or she has either more latitude or more social capital (or both) to pursue technological innovation. Another significant control variable is whether the CEO works in a hospital that is Joint Commission Accredited. The negative coefficient on this variable indicates that CEO’s at accredited hospitals are less likely to rank innovation as a high priority than those at hospitals that are not accredited by the Joint Commission. The Joint Commission is a nonprofit organization that states its mission as, “To continuously improve health care for the public, in collaboration with other stakeholders, by evaluating health care organizations and inspiring them to excel in providing safe and effective care of the highest quality and value” (Joint Commission, 2015). This results is difficult to explain as the Commission’s mission seems well-aligned with prioritizing technological innovation. More study is needed to determine whether some of the annual accountability or performance measures required from accredited hospitals may encourage CEOs to prioritize other types of performance ahead of innovation.

In addition to these two control variables, five of the key independent variables associated with our hypotheses are also significant in the model. These are discussed in more detail in the subsequent section, but briefly, CEOs who see the role of the hospital as serving the community are more likely to place a higher priority level on technological innovation. This finding, combined with the lack of significance for the variable describing the CEO role as considering market competition when making managerial decisions, evidences a lack of support for Hypothesis 1a and positive support for Hypothesis 1b. Further both CEOs and both
government-owned and for-profit hospitals are less likely than those at non-profit hospitals to prioritize technological innovation. This finding provides partial support for Hypothesis 2 related to sector differences and managerial priority setting. Hypothesis 3a also receives partial support. one of the hospital size variables, bed size, is positively related to the priority level a CEO places on technological innovation. However, log of total annual expenditures, a second size variable, is not significantly related to technological innovation priority level. Finally, CEOs at higher occupancy hospitals also do not demonstrate a higher propensity to prioritize technological innovation. Therefore, Hypothesis 3b is not supported. Table 3 below summarizes the support or lack thereof for each of the hypotheses, and implications of these results are discussed in the subsequent section.

Table 3: Summary of Support for Hypotheses

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CEO Role</strong></td>
<td></td>
</tr>
<tr>
<td>Hypothesis 1a: Consider market competition</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hypothesis 1b: Serve the community</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>Industry Sector</strong></td>
<td></td>
</tr>
<tr>
<td>Hypothesis 2: Sector differences</td>
<td>Partial Support</td>
</tr>
<tr>
<td><strong>Organizational Characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>Hypothesis 3a: Larger hospitals</td>
<td>Partial Support</td>
</tr>
<tr>
<td>Hypothesis 3b: Higher occupancy hospitals</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>

**Discussion**

The support for Hypothesis 1b suggests that hospital CEOs whose role perception is aligned with public value pursuits (e.g. agree their role is to serve the community) will prioritize technological innovation more highly. This finding, coupled with the lack of support for Hypothesis 1a, suggests that perhaps a higher prioritization of technological innovation is associated with a hospital CEO’s public value orientation or mindset, as opposed to a market-
based motivation, such as a desire to bolster the organization’s competitive advantage or to consider competition in the local health care market. One explanation for this finding is that investments in technological innovations are typically expensive and oftentimes risky. The initial investment is often steep and the promise of an economic return on investment is far from guaranteed. Perhaps CEOs who view their role as one that is in service to the community are simply more willing to make the investment and to prioritize the risk.

The partial support for hypothesis 2 suggests that more research is required to fully tease out the sector-based differences in hospital CEOs prioritization of technological innovation. Our preliminary findings suggest that CEOs of both for-profit and government-owned hospitals prioritize technological innovation less highly than their nonprofit hospital counterparts. Considering the public value benefits of technological innovation in the healthcare sector discussed previously, it’s possible that the value pursuits of nonprofit CEOs are more strongly aligned with technological innovation—and thus these CEOs prioritize this function more highly. This could be for a variety of reasons that require further inquiry and theory development. Perhaps CEOs of for-profit hospitals are simply more risk averse to investments in new and untested technologies, or perhaps nonprofit hospitals, because of their tax exempt status, are simply better positioned or more highly incentivized to invest in innovative technologies that they believe will pay dividends to the communities they serve. Another explanation is that nonprofit hospitals tend to be more specialized—requiring a greater prioritization or emphasis on technological innovation than their government or for-profit counterparts. Again, more research is required to fully understand the relationship between technological innovation prioritization and hospital sector. Previous research on diffusion technological innovation may be a useful frame for deeper inquiry. For instance, much inquiry, both in and outside of the health care
sector, has focused on when innovations are adopted, creating categories such as early vs. late adopters (e.g. Berwick 2003; Castle 2001; Mahajan, Muller, and Sirvastava 1990). The significance of CEO perceptions of their role as community servants may be a variable that relates to whether they become early or late adopters of innovation.

Finally, the partial support for Hypothesis 3a and lack of support for Hypothesis 3b also suggest that more research is required to understand the relationship, if any, between hospital size; hospital occupancy; and the prioritization of technological innovation. While the model suggests that CEOs of hospitals with more beds may prioritize technological innovation more highly than CEOs of smaller hospitals, there is no evidence to suggest that CEOs with higher levels of occupancy are more likely to prioritize tech innovation. In fact, our model finds a statistically significant, negative relationship between occupancy and technological innovation prioritization. One explanation for this finding is that CEOs of hospitals with already high occupancy rates may not be as motivated to invest in expensive or risky innovative technologies, whereas CEOs of hospitals that are not at capacity or are struggling to fill beds may view technological innovation as a higher priority because they see it as a vehicle for improving their occupancy rates overtime. In any case, our model does not find overwhelming support that CEOs of bigger or fuller hospitals prioritize technological innovation more highly.

Conclusion

Though preliminary, these findings and model development suggest a promising path forward for research concerned with bridging the gap between public value theory and management theory. Deeper theoretical development and rigorous empirical inquiry is required to understand the relationship between public value pursuits, managerial prioritization, and managerial role perceptions. Ideally, future research would be longitudinal in nature, allowing
for deeper analysis into how CEO priorities shift and change over time and how managerial actions, over time, affect public value pursuits. We invite our fellow community of scholars to join us in our pursuit of a deeper understanding of the connections between and across these domains.
References


