

The Effects of CEO Succession and Tenure on Failure of Rural Community Hospitals

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Little research has examined the independent and interactive effects of CEO succession and tenure on organizational failure. In this study, the authors found independent effects of CEO succession and tenure on organizational failure in a group of small rural hospitals. Consistent with the authors' predictions, CEO succession increased risk of organizational failure, whereas tenure affected failure in a U-shaped fashion. Risk of failure first declined with CEO tenure but increased steadily after the sixth year of tenure. No interaction was found between CEO tenure and succession.

INTRODUCTION

Organizational scholars advance two general perspectives on the role of organizational top management. The first suggests that chief executive officers (CEOs) simply reflect the organizations they manage. CEOs are chosen to complement the existing strategy, culture, and decision-making style of the organization, and their influence is limited largely to ensure that these established practices are maintained (Salancik & Pfeffer, 1977; Smith & White, 1987). A second view holds that organizations are

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profoundly influenced by top managers and the decisions they make (Chaganti & Sambharya, 1987; Hambrick & Mason, 1984; Miller, Kets De Vries, & Toulouse, 1982). The CEO is the agent ultimately responsible for action on an organization's strategy, design, performance, and environment (Dalton & Kesner, 1985).

Although both perspectives can be used to describe most organizations, the latter is especially compelling in small firms where the influence of the CEO is likely to be directly and keenly felt (Carroll, 1984; Haveman, 1993; Levinthal, 1990; Miller & Droge, 1986). This is so because small organizations are more susceptible to direct managerial control by virtue of their loose specialization of function, simple structures, and short managerial hierarchies (Haveman, 1993; Levinthal, 1990; Miller & Droge, 1986; Mintzberg, 1979; Preisendoerfer & Voss, 1990). Leadership is also more idiosyncratic in small organizations. The role of CEO is virtually synonymous with the individual attributes of the incumbent (Kanter, 1977; Preisendoerfer & Voss, 1990). By contrast, large organizations tend to be structured bureaucratically, thereby diffusing the influence of the CEO and rendering him or her interchangeable with others who might occupy the CEO position (Levinthal, 1990; Miller & Droge, 1986). To the extent that leadership matters in organizations, the effects of CEO change and experience will be more pronounced in small organizations than in large ones.

Further, because small organizations are highly susceptible to environmental and competitive pressures, the actions, experience, and skills of their leaders may be significant in determining the organization's very survival (Amburgey, Dacin, & Kelly, 1994; Preisendoerfer & Voss, 1990). It follows that change or continuity in the CEO position in small organizations is potentially related to risk of organizational failure. In this investigation we attempt to differentiate how two related but distinct properties of top management—succession and tenure—affect risk of failure in small organizations. Adequate conceptual and empirical differentiation of these concepts and their effects has been lacking in the growing stream of literature on executive succession (Kesner & Sebor, 1994).

CEO Succession and Tenure

The question addressed in the majority of empirical studies on leadership is "What impact does change (succession) in top management have on organizations?" This extensive body of research has been reviewed elsewhere (see, e.g., Kesner & Sebor, 1994). However, there has been relatively little consideration given to how variation in tenure in the CEO position affects organizational performance and survival. Although CEO tenure and succession connote temporal qualities of the CEO position, they are potentially distinct, both conceptually and empirically.

Empirically, tenure is not simply the obverse of succession. CEO succession is typically operationalized either as a discrete event corresponding to the exiting and replacement of a CEO, or as a rate (frequency of succession). CEO tenure reflects the length of time that an incumbent CEO has held that office and is operationalized as a continuous variable (e.g., number of years in office). CEO succession, as a discrete event, may be largely independent of how long the departing CEO has served (March & March, 1977; Vancil, 1987). A CEO who leaves the organization may have held office

for 2 months, 2 years, or 2 decades. Similarly, CEO tenure tells us relatively little about the probability of change in the officeholder (except, perhaps, for retirements or deaths among very long tenured CEOs). Despite the intuitive temptation to view succession and tenure as operating on the same continuum, there is no a priori reason to expect a strong empirical association between the two.

Perhaps more important, the conceptual distinction between succession and tenure may lead to very different predictions regarding failure in small organizations. Our perspective on CEO tenure and succession assumes that the CEO position functions as an integral structural component within a broader organizational context. Thus change or lack of change in the CEO position carries implications over and above those attributed to the personal characteristics of the CEO or the idiosyncratic circumstances surrounding succession and tenure (e.g., retirement, firing, personal leadership style). From this perspective, succession creates the transition of power and reorganization, resulting in potential disruption of standing routines and strategies (Carroll, 1984; Haveman, 1993; Miller, 1993). Tenure, on the other hand, is associated with leadership development and experience. With increased tenure of the CEO comes reliability of organizational practices, and acceptance and legitimacy of the organization by important external actors (Hart, 1993; House, Singh, & Tucker, 1985). To the extent that these two concepts emphasize respectively change and stability in small organizations, their likely impact on organizational failure may also differ.

This article examines four research questions related to succession and tenure and their relationship to risk of failure in small organizations:

1. How are CEO tenure and succession related empirically?
2. What are the independent effects of CEO tenure and succession on risk of failure in small organizations?
3. Does CEO tenure operate in linear or nonlinear fashion to affect risk of failure in small organizations?
4. Does CEO tenure condition the relationship between CEO succession and risk of failure in small organizations?

These research questions are examined using longitudinal data on all rural community hospitals in the United States over the period 1984-1991. Small size and recent changes in reimbursement and competitive environments of rural hospitals have made them more susceptible to failure. This, coupled with increased rates of succession among rural hospital CEOs over the study period, make this group of organizations particularly appropriate for exploring the relationship of tenure, succession, and organizational failure.

HYPOTHESES

Prior studies on CEO succession and tenure have yielded inconsistent findings with regard to organizational survival. In an examination of succession effects, Carroll (1984) found that organizational mortality among newspapers increased with the

succession of founders of these organizations. By contrast, organizational survival rates were found to improve with the succession of CEOs of voluntary social service organizations (House et al., 1985; Singh, House, & Tucker, 1986). In similar fashion, previous studies of CEO tenure have also failed to produce consistent findings. Although none of these studies has considered specifically the relationship of CEO tenure and organizational survival, lengthy tenure has been linked to improved organizational performance (Eitzen & Yetman, 1972; Thomas, 1988) on the one hand, and to poor organizational adaptability and performance mediocrity on the other (Finkelstein & Hambrick, 1990; Miller, 1991). Curiously, only one study to date has considered the effects of *both* succession and tenure on organizational survival in the same analysis (Haveman, 1993). The study found that survival rates among small telephone companies were adversely affected by succession but improved with increase in tenure of the CEO. The hypotheses developed below build upon and extend the Haveman study by considering the nonlinear effects of tenure and the joint effects of tenure and succession on organizational failure.

We posit that CEO succession increases the risk of failure in small organizations. Because of the powerful and direct influence of leadership in these organizations, succession disrupts work routines, interrupts command, and increases employee insecurity (Allen, Panian, & Lotz, 1979; Carroll, 1984; Grusky, 1963; Haveman, 1993). This, in turn, leads to poor organizational performance and increased risk of failure. Similarly, succession may adversely affect organizational survival if it redefines the firm's established economic and political relations. Because of his or her important boundary-spanning role, departure of the CEO may disrupt key exchanges with suppliers, clients, and the local community (Carroll, 1984; Hannan & Freeman, 1984, 1989; Meyer, 1975). Such disruption may jeopardize environmental linkages on which small organizations depend.

Hypothesis 1: Controlling for CEO tenure, CEO succession is associated with the risk of failure among small organizations.

In contrast to CEO succession, tenure speaks to how variation in CEO experience in an organization affects organizational survival. Greater CEO experience and accumulated power may enhance the survival chances of small organizations. This argument is based on the premises that organizational leadership requires time to develop and that experienced, influential leaders sustain fidelity in organizational practices, structures, and strategies (Eitzen & Yetman, 1972; Weiner & Mahoney, 1981). Further, tenure reflects the extent to which the CEO has been integrated into the network of important external actors (Hart, 1993). Such connections determine how well the organization is accepted and legitimized by its external constituencies and affect the organization's access to material resources, information, and technology (House et al., 1985; Levinthal, 1990; Miner, Amburgey, & Stearns, 1990). To the extent that small organizations have few slack resources to shield them from environmental threats and lengthy CEO tenure enhances relations with important external actors, CEO tenure is likely to reduce the risk of failure in small organizations.

However, tenure may operate as a double-edged sword on organizational failure. Controlling for succession, tenure may be positively associated with organizational failure either when the CEO has minimal experience in the organization or when she or he has ossified by serving in that capacity for an extended period. This is so because short-tenured CEOs lack the time and experience necessary to establish reliability in organizational routines and stable relations with external constituencies (Haveman, 1993). Long-tenured CEOs, by contrast, may overcommit to a particular set of strategies or practices, thereby reducing the capacity of their organizations to change in response to new environmental demands (Boeker & Goodstein, 1991; Hambrick & Fukutomi, 1991; Miller, 1991).

Hypothesis 2: Controlling for CEO succession, risk of failure among small organizations will be greatest when the CEO has either very long tenure or very short tenure.

We suggested that CEO succession may be associated with greater risk of failure in small organizations. Such relationships, however, are unlikely to be uniform among small organizations. In particular, the experience of the departing CEO in an organization may moderate the relationship of succession and organizational failure because extensive CEO experience renders succession a more disruptive event for the organization. For example, survival of small organizations may be most affected by succession when the departing CEO has served in that capacity for an extended period. In such cases, the legacy of a long-tenured CEO may limit the development of new leadership and adversely affect the organization's performance (Gilmore & Ronchi, 1995). Moreover, loss of accumulated experience and important external networks may put the organization at a severe competitive disadvantage (Carroll, 1984; Meyer, 1975). By contrast, departure of a CEO with less tenure may have little impact on organizational survival because time has not yet fused the identity of the organization with that of the CEO (Carroll, 1984).

Hypothesis 3: The positive relationship of CEO succession and risk of failure among small organizations will be greater when the departing CEO has longer tenure than when the departing CEO has shorter tenure.

METHOD

Data

The study group consisted of community hospitals operating in nonmetropolitan (rural) areas of the United States during 1984-1991 ($N = 2,780$). Community hospitals are nonfederal hospitals providing short-term general and/or specialty services (American Hospital Association, 1991). These hospitals were observed until they closed or merged, or until the end of the study period.

Data for this study were obtained from multiple sources. The American Hospital Association (AHA) annual surveys provided variables related to hospital services and

organizational characteristics. The Area Resource File contained county-level environment variables. A latitude and longitude listing of all community hospital addresses was used as the basis for computing straight-line distance between the focal rural hospital and other community hospitals. The Health Care Financing Agency (HCFA) Medicare Cost Reports were the source of financial information for all sample hospitals. Finally, information collected from state hospital associations was used to validate the year in which a hospital failed. Data from these sources were merged to construct a pooled, cross-sectional file consisting of annual observations for study hospitals.

Study Setting—Rural Community Hospitals

Rural community hospitals constitute a special segment of the hospital industry because of their small size, scarce resources, and close dependence on the local community. Averaging 84 beds, rural community hospitals are about one third the size of urban community hospitals. They constitute about half of the community hospital population but account for only 23% of all community hospital beds (Ermann, 1990; Moscovice, 1989). In part due to their small size, rural hospitals are less technologically advanced; they offer fewer services than their urban counterparts and have been highly susceptible to the marked industry downturn in recent decades (Mick & Morlock, 1990; Mullner & Whiteis, 1988). Pressures on rural hospitals were further intensified in 1983 by the federally mandated Medicare Prospective Payment System, which reimbursed rural hospitals at a lower rate than it did their urban counterparts. This has resulted in declining occupancy rates and reduced revenues for these organizations (Ermann, 1990; Mick & Morlock, 1990).

These environmental threats and operational difficulties have made executive leadership particularly important for rural hospitals. Due to a limited pool of management talent in rural areas, leadership in these organizations has focused heavily on the CEO, making his or her influence keenly felt throughout the organization. Further, experience of CEOs and their relationships with external actors in rural communities often determine the hospital's access to community subsidies and capital markets, rendering CEO tenure and succession potentially important factors in hospital survival.

Measures

Organizational failure. The dependent variable of this study was organizational failure, defined as permanent closing of a hospital facility (American Hospital Association, 1991). Prior studies have treated mergers as well as closures as organizational failures (e.g., Hannan & Freeman, 1989). Recent research, however, has shown that merger and closure are distinct outcomes and are influenced by different organizational pressures (Mitchell, 1994). Based on these findings, we differentiate merger from closure and consider mergers as censored observations in our analysis. Rural hospitals experiencing closure were coded as 1 in the year of the event, and 0 otherwise.

CEO succession. CEO succession was a dichotomous variable with a value of 1 when change occurred in the CEO position in consecutive years, and 0 otherwise.

CEO tenure. CEO tenure was determined by the number of years since the last CEO departed to the year the hospital was surveyed. Information was obtained from the AHA to identify the last CEO turnover as early as in 1971. Hospitals that did not experience CEO succession from 1971 to 1979 were left truncated. For these hospitals, the last CEO succession was assumed to occur in 1970.¹

Controls. Previous research showed that organizational attributes (size, ownership, and performance), interorganizational relationship (multihospital system affiliation and contract management) and environmental conditions (competition and market demand) affect rural hospital failure (Halpern, Alexander, & Fennell, 1992; Longo & Chase, 1984; Mullner & Whiteis, 1988). These variables were incorporated in the analysis as control variables (Alexander, D'Aunno, & Succi, 1996; Mullner, Rydman, & Whiteis, 1990).

Size was measured as the number of hospital beds set up and staffed for use. *Ownership* was represented by two dummy variables, one for investor-owned hospitals and the other for hospitals operating under government control. Private, nonprofit hospitals served as the reference group. *Performance* was assessed by occupancy rate, cash flow, and market share. Occupancy rate was calculated as the ratio of average daily census to number of hospital beds and measured the degree to which the hospital used its production capacity effectively (Goodstein & Boeker, 1991; Lee & Alexander, 1994). Cash flow was measured by the ratio of net income plus depreciation divided by total assets. It describes both a hospital's operating performance (i.e., revenues to expenses) and its investment and financing activities (Kane, 1991). Market share was captured by the ratio of the focal hospital's admissions to the total number of community hospital admissions in the county of location. Controlling for hospital size, market share captures a hospital's performance related to its competitors in the local market.

Multihospital system affiliation is defined as an arrangement in which a free-standing hospital aligned itself with a corporately structured health delivery system consisting of two or more hospitals (Alexander, 1991). Rural hospitals affiliated with a system were assigned a value of 1, and 0 otherwise. *Contract management* was measured by a dichotomous variable, indicating whether management of the hospital (its top management team) was provided under contract with a separate firm. About 2% of our hospital observations had missing values on contract management. These observations were retained in the analysis and indicated by a dummy variable (1 = missing, 0 = no).

Competition was measured by the geographic, straight-line distance between the focal rural hospital and the nearest community hospital. In rural areas where alternative sources of health care are limited and the costs of transportation are high, geographic distance represents a major factor for the competitive dynamics among hospitals

(Adams & Wright, 1991). In general, hospitals more proximate to other hospitals would have to compete for patients in the market, thereby facing higher competitive pressures. This competition variable was reverse coded to reflect the expectation that hospitals in closer distance to neighboring hospitals experience higher competition. *Market demand* was assessed by physician supply (number of physicians per 1,000 county population), elderly population (percentage of county population older than 65), and per capita income (average personal income for all county residents). We expected that counties with greater physician supply, larger elderly populations, or higher per capita incomes would have higher levels of demand for hospital services (Knickman & Foltz, 1984).

Time effects. A series of dummy variables representing each year of the study period was included in the analysis to assess the effects of time on rural hospital failure (1985 being the reference year).

All variables except time effects were lagged by one year to reflect the predicted causal direction between covariates and organizational failure.

Analysis

Discrete time event history analysis (logit modeling) was used to model the effects of CEO succession and tenure on organizational failure (Allison, 1984; Tuma, 1982; Yamaguchi, 1991). This technique adjusts for right-censored observations, that is, hospital observations that were truncated due to reasons other than organizational failure (e.g., merger, acquisition, end of study period), and is a good approximation for continuous time models given the relatively small number of failures in our study (Allison, 1984; Yamaguchi, 1991). Logit modeling estimates the conditional probability that a hospital fails at a particular time period given that the hospital survives to the beginning of the period and is at risk for failure. The simple format of a logit model is

$$\ln \left[\frac{\lambda(t_i; x)}{1 - \lambda(t_i; x)} \right] = \alpha + \sum_k b_k x_k,$$

where $\lambda(t_i; x)$ is the conditional probability that a hospital experiences a failure event at t_i , x_k is the covariate, and b_k is the estimated parameter (Yamaguchi, 1991).

Longitudinal data comprising repeated observations for the same subjects can introduce bias due to within-subject correlation among observations (Hannan & Young, 1977; Zeger & Liang, 1986, 1992). Usually, within-subject correlation reduces the variance of the parameters and overestimates the significance of covariate effects. We used generalized estimating equations (GEE) to estimate logit models in order to correct for potential bias caused by such correlations. GEE is a marginal effect model.² It adjusts for repeated observations by estimating within-subject correlation separately from the regression parameters, yielding consistent estimates and variances without rigorous assumptions about the actual pattern of within-subject correlation (Diggle, Liang, & Zeger, 1994; Zeger & Liang, 1986, 1992).

RESULTS

Table 1 presents descriptive statistics and Pearson product-moment correlations for all study variables. Compared to organizations in other industries (e.g., Carroll, 1984; Hannan & Freeman, 1989; Haveman, 1993; Miner et al., 1990; Singh et al., 1986), our study organizations experienced relatively low rates of failure. The average annual failure rate was 1.4% and was quite stable over the study period (Table 2).

Table 3 displays bivariate comparisons between CEO tenure and succession. Results of this comparison indicate that succession is more likely to occur among short-tenured CEOs. Succession in rural hospitals occurs at an average rate of 23% among CEOs with 3 years of tenure or less, compared with 15% among those CEOs with 9 years of tenure or more. These differences are statistically significant ($\chi^2 = 133$, $p < .001$).

Our hypotheses were examined with a series of nested, hierarchical logit models. The baseline model contains control variables representing the effects of selected organizational attributes and environmental conditions on organizational failure. Variables representing the independent and interactive effects of CEO succession and tenure are then added to the baseline model to test the hypotheses. Significant differences in likelihood ratio chi-square (L^2) between consecutive models and significant CEO coefficients render support for our hypotheses. Table 4 presents results of these models.

Model 1 presents the results of the baseline model. Except for for-profit ownership, occupancy rate, and physician supply, all control variables show statistically significant effects on organizational failure.³ Results indicate that organizational failure is more likely to occur among rural hospitals with smaller scale, government ownership, poorer performance, and system affiliation. Further, failure rate is higher for rural hospitals that are not contract managed and for those that operate in markets with higher competition, a larger elderly population, and lower per capita income.

Model 2 tests Hypothesis 1 by incorporating CEO succession and the linear expression of CEO tenure. Results show that both CEO succession and tenure display significant, independent effects on organizational failure, controlling for effects of performance and other control variables. As expected, CEO succession increases the likelihood of failure among our study organizations, holding constant the effect of CEO tenure. The difference in likelihood ratio chi-square between models 1 and 2 ($G = 35.14$, $p < .001$) indicates significant improvement in explanatory power by adding the CEO succession and tenure variables. These results provide strong support for Hypothesis 1.

Model 3 tests the curvilinear effect of CEO tenure on organizational failure (Hypothesis 2). We hypothesized that CEO tenure affects organizational failure in a U-shaped fashion, with risk of failure among small organizations highest when the CEO has either very long or very short tenure. Results from model 3 support our prediction. The significant coefficients and directionality of the linear and quadratic terms of CEO tenure indicate that risk of organizational failure first decreases with increasing CEO tenure, but after a period, risk increases steadily. A plot of the effect

TABLE 1
Means, Standard Deviations, and Pearson Correlation Matrix

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Organizational failure	.01	.12	—															
2. CEO succession	.20	.40	.06	—														
3. CEO tenure	5.75	5.03	-.04	-.08	—													
4. Size	83.51	65.75	-.06	-.08	.15	—												
5. Government	.43	.50	.11	.03	-.05	-.21	—											
6. Not-for-profit	.48	.50	-.10	-.06	.11	.21	-.84	—										
7. For-profit	.08	.28	-.02	.06	-.11	.00	-.27	-.29	—									
8. Occupancy rate	43.33	22.87	-.03	-.05	.07	.32	-.11	.13	-.03	—								
9. Cash flow	.08	.30	-.11	-.06	.02	.07	-.06	.04	.05	.01	—							
10. Market share	.73	.33	-.10	-.02	.00	.09	.10	-.06	-.07	.04	.04	—						
11. MHS affiliation	.38	.48	.03	.11	-.26	-.02	-.20	.06	.25	.02	.01	-.00	—					
12. Contract management	.22	.42	.00	.12	-.22	-.10	.05	-.01	-.07	.00	-.02	.02	.43	—				
13. Competition	17.32	10.08	.05	-.02	.08	.20	-.15	.07	.13	.04	.01	-.38	-.01	-.07	—			
14. Physician supply	.01	.01	-.02	-.05	.07	.44	-.21	.20	.00	.16	.04	-.22	.03	-.05	-.14	—		
15. Elderly population	.15	.04	.02	.00	.00	-.17	.04	-.02	-.05	-.02	-.03	.04	-.03	-.03	-.03	-.12	—	
16. Per capita income	12238.50	2694.30	-.01	-.02	.05	.04	-.01	.08	-.12	.21	-.03	-.08	-.02	-.01	.02	.23	.22	—

NOTE: $N = 16,929$ hospital years. $|Correlations| \geq .02$ are significant at $p < .05$.

TABLE 2
Annual Rates of Organizational Failure Among Rural Hospitals

	<i>Year</i>							<i>Average</i>
	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	
Failure rate	0.8%	1.4%	1.5%	2.0%	1.3%	1.4%	1.4%	1.4%

TABLE 3
Relationship of CEO Succession and Tenure in Rural Hospitals

	<i>Tenure (years)</i>						χ^2	p
	<i>1</i>	<i>2-3</i>	<i>4-5</i>	<i>6-8</i>	<i>9-11</i>	<i>12+</i>		
Succession rate	23.0%	24.0%	22.1%	17.9%	15.2%	15.1%	133	>.001

of CEO tenure on organizational failure identifies the lowest failure risk between the fifth and sixth years of tenure, increasing steadily after that point (Figure 1). The change in likelihood ratio chi-square ($G = 10.23, p < .01$) indicates that including the quadratic expression of CEO tenure significantly improves the explanatory power of the model.

Finally, we tested Hypothesis 3 by including the interaction between CEO succession and tenure in the model. According to Hypothesis 3, we expected the interaction to be significant and positive, indicating a greater positive effect of succession on organizational failure when the departing CEO has longer tenure. Results of model 4, however, do not support our hypothesis. The coefficient of the interaction term is negative and nonsignificant.

DISCUSSION

Our study corroborates Haveman's findings regarding the positive effect of CEO succession on organizational failure (Haveman, 1993). This corroboration is important for several reasons. First, our findings obtained in a substantially different sample of small organizations, thus increasing the generalizability of the CEO succession-organizational failure relationship. Second, we found that CEO succession effects operate in organizations that are not typically formed by a single founder—community hospitals (Carroll, 1984; Haveman, 1993). Such effects are, therefore, not idiosyncratic to the influence of firm founders and arguably are applicable to a broader set of executive managers. Third, because findings from our study are based on more contemporary data than those used by both Carroll and Haveman, the effects of CEO succession are not delimited by historical period. Finally, our findings obtained in a class of organizations (hospitals) not noted for high rates of failure. To the extent that

TABLE 4
Results of GEE Discrete-Time Logit Models: Effects
of CEO Succession and Tenure on Rural Hospital Fail

Variable	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Intercept	-4.24***	0.94	-4.07***	0.64	-4.64***	0.63	-4.42***	0.60
Size	-0.01**	0.03E-1	-0.01**	0.03E-1	-0.01**	0.03E-1	-0.01**	0.03E-1
Government	3.28***	0.38	3.21***	0.37	3.22***	0.36	3.21***	0.36
For-profit	0.73	0.49	0.57	0.49	0.54	0.49	0.57	0.48
Occupancy rate	-0.05E-1	0.06E-1	-0.04E-1	0.06E-1	-0.04E-1	0.06E-1	-0.04E-1	0.05E-1
Cash flow	-1.02***	0.25	-0.95***	0.22	-0.96***	0.21	-0.95***	0.22
Market share	-1.82***	0.28	1.83***	0.28	-1.85***	0.28	-1.83***	0.28
MHS affiliation	1.24***	0.21	1.08***	0.20	1.09***	0.21	1.08***	0.19
Contract management	-0.45†	0.24	-0.58*	0.23	-0.61**	0.24	-0.58**	0.23
Competition	0.07***	0.01	0.07***	0.01	0.07***	0.01	0.07***	0.01
Physician supply	-0.72	21.61	-1.65	21.65	-2.51	21.89	-1.58	19.06
Elderly population	3.75†	1.96	3.45†	1.96	3.39†	1.96	3.44†	1.80
Per capita income	-0.01E-2**	0.04E-3	-0.01E-2**	0.04E-3	-0.01E-2**	0.04E-3	-0.01E-2**	0.04E-3
Contract management								
missing	1.50***	0.24	1.49***	0.24	1.48***	0.24	1.49***	0.22
Year-1986	0.56	0.37	0.55	0.37	0.51	0.38	0.55	0.38
Year-1987	0.52	0.36	0.46	0.36	0.42	0.36	0.46	0.36
Year-1988	0.96**	0.36	0.87*	0.37	0.82*	0.37	0.87*	0.37
Year-1989	0.63	0.38	0.57	0.38	0.51	0.39	0.57	0.39
Year-1990	0.81*	0.39	0.79*	0.39	0.71†	0.39	0.79*	0.40
Year-1991	0.91*	0.42	0.86*	0.42	0.82†	0.42	0.86*	0.42
CEO succession			0.70***	0.15	0.70***	0.15	0.66***	0.18
CEO tenure			-0.06**	0.02	-0.11***	0.03	-0.06*	0.02
CEO tenure ^{2a}					0.01***	0.03E-1		
CEO Succession × Tenure ^a							-0.02	0.05
Likelihood ratio								
chi-square, L^2 (df) ^b	711.78***	(19)	746.92***	(21)	757.15***	(22)	747.11	(22)
G^c vs. model 1 (df)			35.14***	(2)				
G^c vs. model 2 (df)					10.23**	(1)	0.19	(1)

NOTE: $N = 16,929$ hospital years. Unstandardized regression coefficients are reported. E = exponential ($E-a = 10^{-a}$).

a. Variables are centered ($X - \bar{X}$) to reduce the potential bias caused by multicollinearity.

b. Obtained from the SAS PROC LOGISTIC procedure as a proxy for the adjusted model likelihood ratio chi-square.

c. $G = (\text{likelihood ratio chi-square of the model with the variable}) - (\text{likelihood ratio chi-square of the model without the variable})$. It measures the improvement in model fit.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

such organizations are to some degree protected from competitive dynamics and failure, our findings on CEO succession seem particularly robust.

Our study diverges from previous research by identifying a nonlinear relationship between CEO tenure and risk of organizational failure. Failure is more common in small organizations managed either by very short tenured or very long tenured CEOs, relative to those managed by CEOs with moderate tenure. This may mean that CEOs of small organizations are liabilities for their organizations while they learn their craft

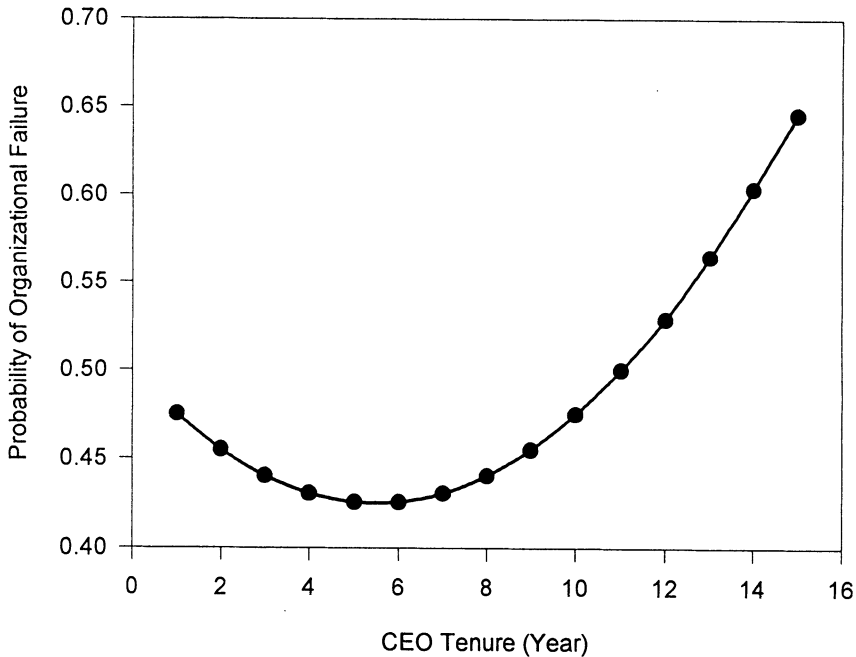


FIGURE 1: The Relationship Between CEO Tenure and Organizational Failure (Graph is plotted based on multivariate logit regression results)

and establish internal routines and external networks (Eitzen & Yetman, 1972; Hambrick & Fukutomi, 1991; Miller & Droge, 1986). There is a period of tenure after this risk-laden stage where the CEO is most beneficial to his or her organization. During this period, the CEO introduces his or her influence on the organization and establishes the fidelity necessary to protect the organization from adverse selection (Hambrick & Fukutomi, 1991). However, the benefits of tenure do not extend indefinitely. Risk of failure increases again as the tenure of the CEO extends beyond the middle range. Our theory posited that this pattern might be explained by the rigidity that accompanies overcommitment to certain strategies or practices. CEOs that remain in power for a very long period may be seduced by their very longevity and shut themselves off to changing demands on their organizations (Hambrick & Fukutomi, 1991; Miller, 1991, 1993).

Other explanations, however, may account for the curvilinear association of tenure and organizational failure. Perhaps the most potentially damaging to our thesis is the possibility of adverse CEO retention. This explanation suggests that talented CEOs may be siphoned off to better paying, more prestigious positions in large urban hospitals, leaving the more poorly qualified CEOs to operate rural hospitals in the long run. Thus organizational failure is not so much an issue of a good manager staying beyond his or her most effective period as it is out-migration of good managers and retention of ineffective managers.

Because of the importance of this alternative explanation, we separately analyzed data from another study of rural hospitals to determine whether tenure of rural hospital CEOs is associated with their professional qualifications. Data on 750 randomly selected, rural hospital CEOs were used for this analysis (Mick et al., 1993). Results indicated no significant differences across tenure categories in terms of educational preparation of the CEO. (Results are available upon request.) Longer tenured CEOs, however, were significantly more likely to be members or fellows of the American College of Health Care Executives, the principal professional association of health care managers. These findings are not supportive of the adverse retention hypothesis, because long-tenured managers do not appear to be less qualified (and by virtue of their professional membership, may be more qualified) than their shorter tenured counterparts. Additional evidence against the adverse retention hypothesis is provided by Lishner, Robertson, Rosenblatt, and Hart (1994), who found that only 6% of hospital CEOs in Washington State followed a career trajectory that used rural hospitals as a stepping stone for positions in urban medical centers. Despite these findings, further analyses based on detailed personal information of CEOs (e.g., age, previous managerial/executive experience) are needed to verify the effect of adverse retention and to clarify the curvilinear relationship between CEO tenure and organizational failure.

Our hypothesis regarding the joint effects of tenure and succession received no support in the analysis. The effect of CEO succession on risk of organizational failure is not a function of CEO tenure. We infer from this that the two concepts operate largely independently of each other. In practice, succession of a rural hospital CEO will increase risk of failure regardless of whether the CEO has been in office for 2, 12, or 24 years. Similarly, risk of organizational failure declines with increasing CEO tenure (up to a point) independently of whether a succession occurs at any given stage in the CEO's tenure. This pattern of findings is supportive of our initial premise that tenure and succession are distinct empirically and conceptually.

Most theories of succession and organizational failure involve performance decline as a mechanism linking the two concepts. For example, the succession-crisis hypothesis posits that succession causes performance decline because standard routines and command are disrupted (Carroll, 1984; Haveman, 1993; Allen et al., 1979). Poor organizational performance, in turn, results in organizational failure. It is interesting to note that the effects of CEO succession and tenure on organizational failure obtain, holding constant the effects of organizational performance.

In our analysis, we assessed performance in a multidimensional fashion, using three well-documented measures—occupancy, cash flow, and market share. Two of the three performance measures were negatively and significantly associated with organizational failure, suggesting that poor performance leads to failure. Although these results are hardly surprising, it raises the question as to why succession and tenure affect risk of failure regardless of whether the hospital is performing well or poorly. That is, what mechanism accounts for succession or tenure-induced failure that does not involve performance? One explanation is that leadership change or experience affect small

organizations in ways that cannot be measured in performance terms. To the extent that the organizational identity in these firms is indistinguishable from that of the CEO, failure may reflect a crisis of identity rather than a crisis of performance. Loss of institutional identity may mean loss of community support, which, in turn, leads to failure. These issues require examination in future research.

The empirical relationship of tenure and succession is also worth noting. Although succession is prevalent across the full range of CEO tenure, it is more frequent among CEOs with relatively short tenure. On average, the succession rate is eight percentage points higher among very short tenured CEOs than among very senior CEOs. It is likely that the difference would be even more pronounced if retirements/deaths were removed from the sample. One explanation is that the longer an individual occupies the top management position of an organization, the more power and security accrues to that individual (Hambrick & Fukutomi, 1991). Over time, top managers may shape the practices and routines of their organizations in their own image and thereby fashion support for their continued service as CEO. These tendencies stabilize both the organization and the incumbent CEO. By contrast, newer CEOs are more vulnerable. They have not had sufficient time to secure their positions and, like new organizations, are more susceptible to failure until they accrue sufficient time in office (Ocasio, 1994). It would appear, therefore, that the ecological dynamics of CEO succession in small organizations very much parallel those of organizations themselves. This, coupled with the significant effects of CEO tenure and succession on organizational failure, suggest a linkage between the dynamics of intraorganizational power and the evolution of organizational populations.

Several practical implications emerge from our analysis. First, small organizations should proceed cautiously with CEO succession. Succession leaves these organizations vulnerable to failure, whether it occurs under conditions of either positive or negative performance. Therefore, firing the CEO to correct poor organizational performance is unlikely to result in a turnaround and may even hasten the death of the firm. Small organizations should look to other strategies to improve performance, avoid scapegoating, and carefully plan for the succession of top leadership when it becomes necessary.

Second, small organizations should attend to stages of executive experience and development. Specifically, boards of directors or trustees of small organizations must exhibit patience in allowing a new CEO to develop sufficient experience with the organization to protect it against failure. Early in his or her tenure, the CEO spends much of the time and energy in establishing key relationships with external constituencies, assimilating information about the organization, and "imprinting" the organization with his or her own style and values. These activities may not directly affect organizational performance, but should lay the foundation for improved performance and survival prospects in later stages of CEO tenure.

However, the protective benefits of tenure are not indefinite. Organizations may wish to engage in succession planning in anticipation of the stage in the CEO's tenure where risk of failure reaches unacceptable levels. This type of planning may seem

counterintuitive to many organizational decision makers. In some cases, it would suggest anticipating leadership change even during periods when the organization is experiencing positive performance and stability. Such planning would serve to balance the need for stability and fidelity in organizational practices while avoiding overcommitment to a particular leader or strategic orientation.

We believe that our findings and recommendations are not unique to rural hospitals but can be applied to a wide variety of small organizations. However, further research on related issues and other categories of organizations is required to advance this line of inquiry. For example, a more direct examination of our premise regarding the prominence of leadership in small organizations can be performed by testing the differential effects of CEO succession and tenure on small relative to large organizations. Additional research might examine whether the disruptive effect of CEO succession on small organizations is due to the limited pool of management talent available in these organizations and their tendency to use outside successors to fill the top executive position. In-depth studies of these issues will greatly improve our understanding of leadership effects in organizations.

NOTES

1. Left truncation in CEO tenure, caused by the lack of information on the date of last CEO turnover prior to 1971, may pose potential threats to the validity of our findings. We assessed this potential bias by reanalyzing the models with a dummy variable indicating these left-truncating hospitals. Results showed that the dummy variable was not significant and its presence did not alter the effects of other variables. Therefore, the left-truncating bias was negligible.

2. A different approach to addressing the within-subject correlation problem is the random effects model. This technique assumes that within-subject correlation is caused by unobserved factors common to all responses for a given subject. This approach is particularly useful when the research objective is to understand the effects of covariates on individual subjects (Diggle et al., 1994). For example, in our study, random effects models would be appropriate to examine the propensity of closure for a particular hospital after the succession of its CEO. In contrast, the goal of our study is to compare the *average* risk of failure among small organizations with different attributes of the top management. Therefore, we consider the marginal model a better approach for our analysis.

3. We tested the assumption that effects of covariates are time-independent by interacting time (years) and the predicting variables (Hannan & Young, 1977). Results showed that all interactions were nonsignificant, indicating that covariate effects were constant over time.

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