

Workplace Safety by Private and Public Organizations

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Abstract

This research is to empirically analyze determinants of increasing adoption of various safety instruments. In accompany with the emerging issues of human rights after the Second World War, the concept of safe workplace has been widely diffused in the organizational field. As the areas and knowledge of safety has been expanded beyond physical protection in production lines, organizations are expected to concern even safety in human relations. Our research question is “why some organizations introduce specific kinds of management instruments for safe workplace, while others do not?” Negative binomial model using National Organization Survey II data, published by Tom, Kalleberg, and Marsden in 2004, was formed to test these hypotheses because the dependent variable has non-negative counted values with Poisson distribution. Controlling organization size and age, we have found that functional requirement, resource dependency, and normative pressure have positive effects on total number of adopted instruments for safe workplace. When we have divided the samples into public and private organizations, only resource dependency and the number of information sources were statistically significant for public organizations. The effects of functional requirement were failed to reject the null hypothesis when samples were adjusted to organization size.

Introduction

This research is to empirically investigate the factors affecting managerial safety instruments adoption by comparing public and private organizations. Although workplace safety is taking priority in practices, it was overlooked in the management literature for a long time (Brown, 1996). Safety management, nevertheless, has been gradually expanding its realm like other management knowledge such as quality management and modern accounting system. However, it contains unusual value which most of other management knowledge disregard and covers following dimensions: humanity, legitimacy, efficiency and effectiveness.

As human beings emerged as an important attribute of organizations, they have competitively adopted related institutions. One example is employee training. In U.S. organizations, more employees have involved in widespread training programs of which contents also have explosively expanded (Luo, 2002). We may retroact to fundamental concern of “do all organizations need such management systems?” Why some organizations adopt specific management instruments while others do not? Rational organizations would

establish such institutions for better productivity. However, why are there management tools without any urgent need for some organizations?

Our research question of this study is “what makes organizations adopt new institutions for safety management” We focused on instruments regarding workplace safety issue. It is important because they are not original management practices to improve productivity. They have been widely expanded over almost every organization covering most sectors. Using the National Organizational Survey II (2004) data, We investigate this topic in following three approaches: functional requirement, resource dependency, and normative pressure.

Theoretical Review and Hypotheses

Expansion, Diversification, and Standardization of Safety Management

Safety management is widely diffused and it is now a taken for granted responsibility. Almost every country legislated to improve work environment for upholding humanity. Employee’s physical and even psychological healthiness in workplaces are expected to be secured under regulation, order, and law. Organizations would be applied penalty and be blamed for immoral negligence, when safety rules are violated and accidents happen.

These trends, however, are recent things. Employee’s right was ignored merely two hundred years ago, when industrial revolution developed. In the United Kingdom, *the Factory Act* in 1883 regulating child labor in textile factories provides counter evidence of inferior labor condition incomparable with modern workplaces. It was not until the 1970s when a series of legislatures and regulations on equal employment opportunity, health and safety, and benefits were initiated in the United States (Dobbin, & Sutton, 1998). *The Employment Law, the Organizational Safety and Health Act* (OSH Act), and *the Employee Retirement Income Security Act* were enacted and a number of the related regulations were started to force during this period.

Modern organizations are suffering under overflows of safety rules. Safety management has been spreading into various organizations and it has been gradually permeating to management knowledge and practices as humanity issues are embedded in the organizational field. Organizations, moreover, are confused and unduly comply with abundant number of complex and ambiguous regulation for safety (Dobbin, & Sutton, 1998) as its concepts expanded and applying forms varied. The safety issues in early days focused on protection from injuries in production lines. It, however, has been diffusing to wider conceptual range. Safety against physical violence, verbal assault and sexual harassment is emerged important topics beside physical protection in manufacture line and preventing burglary. In addition, its forms and modes are introduced in more formalized and diversified system such as seminars, workshops, training, committee, documentation, and departmentalization.

Safety management have been also standardizing in accordance with this diversifying expansion. Organizations under overflows of diversified safety rules need criteria to make sure whether their products and services satisfy customers (Karapetrovic, & Jonker, 2003). Standardization provides normative rules to follow but it is not hierarchical authority and coercive as laws (Brunsson, & Jacobsson, 2005). ISO 9001 is a successful example of standardization of which the goal is to improve quality management. Companies and even public agencies competitively adopted this standardized management system for they are not certain which procedures are better. OHSAS 18001 is another standardization to provide norms and managerial processes for safety and health following ISO 9001 (quality) and ISO 14001 (environment).

Accordingly, modern organizations are suffering from pressures to make them be safer workplaces. It is not a single force to follow but a multi-dimensional one. They try to constitute safety management systems because they believe that safety management improves productivity and it complies with legal criteria and social norms. We will further discuss this focusing on violence protection in the perspectives of rationality, resource dependency, and normative pressure. Furthermore, the differences between public and private organizations in influences to adopt safety management instruments will be examined, assuming that public organizations more easily follow these pressures because of their higher visibility.

Violence Protection for Safety Management

Violence does not only refer to direct and physical aggression but also indirect and passive one such as verbal assault. According to the California Division of Occupational Health and Safety, workplace violence has three types of event. The first type is an event perpetrated by unknown assailant and the second type is a violent action between customer and worker. The third type of events is aggression between former colleagues and current employees or managers and a personal acquaintance is a victim outside the same business in the fourth type (Runyan, Ronda, & Zwerling, 2000). Especially, converted forms of aggression are more frequent in workplaces than overt forms (Baron, & Neuman, 1996). Indeed, increasing frequency of indirect violence alarms for more violent action (Cox, & Leather, 1994).

Violence might provide negative impact on productivity and even morale. For example, Sofield and Salmond (2003) studied influences of violence in hospital and found that the experience of verbal abuse affect employees to leave organization. Organizations, thus, may adopt instruments for safety to prevent violence in their workplaces. They would set burglar alarm systems and hire guards to protect their workplaces from external threat. They may also establish formal procedures and expert departments for safety and keep documents on it. Furthermore, they could train employees on managing violence including physical assault, verbal abuse, and sexual harassment. However, not all organizations adopt all of these safety management systems. Some requires too much cost to be handled. In addition, highly bureaucratic process would be less appropriate for small workplaces. Also, some organizations are less exposed to internal and external threat than the others.

Our research is focused on following questions. Why some organizations adopt specific tools for safety? Are organizations which experienced higher degree of internal and external violence more likely to adopt them? If the proportions of potential victims are higher, would organizations set proper instruments to protect them from predictable violence? If this functional requirement links well to rational investigation, then a proper check and action system works better and organizational adoption of safety management proceeds under orderly calculation on the violence degree. On the other hand, if this rational system does not work, the other forces would influence on adoptions of safety instruments.

Functional Requirement

Functional requirement provides bases for rational decision making. Organizations can take various kinds of actions to cope with experienced or expected changes of their environments. If organizations experienced drastic changes or expect future threat, they would abandon past systems and adopt new institutions to survive. Rational organizations which experienced and expect internal and external violence harming efficient and effective management would take some action to prevent it. When highly skilled workers suffer from frequent verbal aggression and discrimination, they are likely to leave their organizations and overall productivity would decrease. Chief executive officers and managers want to prevent this by establishing formal process to protest violent action and separate department for

workplace safety, and providing education, workshop, and other kinds of training for safety management.

Strategic choice theory may provide adequate explanations on this. It is an actor-centered interpretation for organizational outcomes (Judge, & Zeithaml, 1992; Child, 1972). That is, members of an organization with the discretion to act (Hambrick, & Finelstein, 1987) have critical roles in instrument adoption. The structuralism opposes to dichotomized perspective of micro/macro and voluntarist/determinist (Pozzebon, 2004). If we see organization as a whole, an adoption of instruments is a simple accumulation of institution. However, those who choose an instrument is not an organization itself but members such as managers or group of employees who actually decide or demand to adopt it. Simultaneously, the adopted instrument may influence actions or directions of those members. Therefore, a process of adoption is an interaction between an organization and members. Assuming autonomous actors, strategic choice perspective views managerial choice as fundamental link between organization and environment. Concentrated on management's ability to create, learn about, and manage organization environment, it also covers the various procedures in which organizations react to surrounding condition (Miles, & Snow, 1978; Judge and Zeithaml, 1992).

If there are increasing occurrences of workplaces violence, organizational members would at least feel their workplace is not safe. When members or managers of organization perceived that their organization is at risk of increased possibility of violence, they would want to do something for release it. It is not an organization but a member or members who decide and influence to adopt instruments for relieved and safe workplace. These activities of organizational actors including violence, perception, and adoption construct integrated process of an organization to manage its environment. Therefore, the first hypothesis which is expressed with organizational term implying actor-centered process is following:

H1: the higher functional requirements for safety management, the more organization is likely to adopt safety management systems.

H1a: the more an organization suffer from workplace violence, the more it is likely to adopt safety management systems.

H1b: the higher portion of potential victims is in an organization, the more organization is likely to adopt safety management systems.

The first hypothesis is to test the rationalized and functional process of adopting instruments. Therefore, it needs to be divided into past events of violence and predictable future events.

Resource Dependency

Some organizations would adopt safety management system because of coercive pressures (Dimaggio, & Powel, 1983) from upper organizations. Financial and personnel resources of sub-unit organizations depend on larger organizations. Larger size organizations are more likely to adopt safety management because they would have more complex and hierarchically layered structure (Rainey, 1997). Complex organizations with highly layered hierarchy need more formal process for managing them consistently. Thus they would adopt more devices, documents, and other kinds of instruments for safety. Therefore, it is possible to deduce that larger organizations would impose their institutions on their sub-unit organizations. They should follow these coercive pressures to maintain resources from larger organization and to escape from penalties of violation.

Organizations are likely to conform the other coercive pressures when their funds are

public. There are fewer obligations for privately funded organizations to publicly announce their operation. They are less likely to adopt safety management system because resources they need belongs to small group of people. They can maintain their funds although there would be accident and be blamed. On the other hand, publicly funded organizations would adopt more instruments for safety management, because their resources will be reduced when their images are damaged for insubordination of desirable rules.

H2: when organization depends on outer environment for their resources, it is more likely to adopt safety management systems.

H2a: Sub-unit organization depending on larger organizations is more likely to adopt safety management systems.

H2b: Publicly funded organization is more likely to adopt safety management systems.

Normative Pressure

Organizations would establish safety management system for they believe that they can attain legitimacy by adopting it. Symbolic and ceremonial change in organizational forms reflects myths surrounded by institutional environment rather than rationalized decision making (Meyer, & Rowan, 1977). According to institutional theory, instrumental adoption and changing organizational forms are isomorphic process (Tolbert, & Zucker, 1983; Frumkin, & Galaskiwicz, 2004), fashion (Dobin, & Down, 2000), and imitation (Lee, & Pennings, 2002). There are norms and norm providers which organizations should follow. In the U.S. the important norm providers for safety management are National Safety Council (NSC), Organization for Safety and Health Administration (OSHA), and National Institute for Occupational Safety and Health (NIOSH). OSHA and NIOSH are governmental agencies with functional differences. OSHA provides rules and regulations, and NIOSH, a research institute, offers information, education, and training. NSC, a non-governmental institute, carries similar roles with NIOSH.

These organizations provide norms for safety outside organizations. Safety department is another example that carries safety norms within organizations. It receives safety norms from authorities, and disseminates normative models by transforming outer standard. It takes important roles to create safety management knowledge and generate new rules for organization. Therefore, when organizations with safety department have more direct and indirect links with outer norm providers, they feel more pressures to adopt safety management knowledge.

However, these pressures work differently according to organizational characteristics. Public organizations are apt to receive them. Being different from business firms whose shareholders monitor their performance with accurately measured criteria (Rainey, 1997), public organizations lack such clearly defined performance measurement for collective goods and services. Public organizations with less specific goals and less specialized techniques would be more depend on institutionalization rather than increasing goal specification and technical levels (Selznick, 1957). Therefore, they are easily engaged in social signals representing legitimacy of new institutional norms (Casile, & Davis-Blake, 2002). Moreover, they would unduly react to outer pressures for being safe organizations, because they are requested to follow public norms and they can attain legitimacy and better evaluation by conforming these norms.

H3: the more organization is under normative pressures for safety, the more it is likely to adopt safety management systems.

H3a: the more organization is linked to authorities offering safety norms, the more it

is likely to adopt safety management systems.

H3b: organization is more likely to adopt safety management systems when it has expert department for safety which receive and disseminate adopted norms.

H3c: public organization is more likely to adopt safety management because it is requested to follow public norms.

Methodology

Data

The data from National Organizations Survey (NOS) II in 2002 was used to test the hypotheses. It was conducted for the National Science Foundation (NSF), the National Institute of Occupational Safety and Health (NIOSH), and the Commonwealth Fund to find out the effects of stress levels in workplace, health insurance costs, and mental health benefit on performances and productivity of business organizations (Smith, Kalleberg, & Marsden, 2004). It also provides information of each organization on the degree of instruments to protect workplace from internal and external threat, functional requirement, forms of resource dependency, and normative pressure for safety. The 414 samples of the NOS II data were employed in this study.

Dependent Variable

The dependent variable is the counted number of instruments to prevent organizations from external threat, physical violence, and verbal assault. We classified four types of safety management from the NOS II data: proactive education and training, documentation and formal process, entrance control, and post-management.

First, we measured how many instruments for safety management by calculating adopted education and training which are proactive for violence prevention. The NOS II team asked respondents whether there are formal trainings and workshops to ensure safe workplaces. The detailed items of this category are formal training (Q26), training to prevent sexual harassment (Q57), seminars or workshops (Q59A), conflict resolution training (Q59B), training in restraining disruptive persons (Q59C), training to identify and respond to terrorism (Q59D), and regular committee for safety (Q60). They were measured in dichotomy (yes=1, no=0) and counted the number when respondents replied 'yes'. Second, questions on formal documentation and procedures are documents describing "safety and hygiene (Q131D)," "workplace violence policy (Q131E)," and "rules on weapons (Q131F)," and formal procedures "resolving disputes (Q132)," and "sexual harassment (Q133)." We have measured by counting these questions in the way of measuring the first category. Third, the NOS II team measured whether there are security officer, burglar alarm system, metal detector or X-ray machine, and requirement to show pass or ID by asking "which of the following type of security are at... (Q140)?" These items represent entrance control to protect organization from outer violence or terrorism. The same way of calculating the first and the second category was used to measure. Fourth, we have measured six items representing post-management after violence happened. Counseling for "not involved (153A)," "victim (Q153B)," "aggressors (Q153C)," "victim's family (Q154D)," "aid in job relocation for victims (Q154E)," and "allowing liberal work time for victims (Q153F)."

We constructed total number of adopted items into instrumental index for the whole workplace safety. The four categories were added up to a dependent variable to see how many items were adopted for safety management (Cronbach's alpha=0.925).

Independent Variable

Functional Requirement: We measured functional requirement in two ways: past experience of violence and proportion of potential victims. The NOS II data provides good items to test first hypothesis. First, the degree of past violence experience was measured by counting the number of accident. Shooting or stabbing (Q142), rape or sexual assault (Q143), physical assault such as fistfights, pushing, shoving, or kicking (Q144), burglary or robbery (Q146), and sabotage (Q147) were included in it. The NOS II team has asked “how many times in the past year” (violence) “occurred” at surveyed organization. We simply added up the number of violence occurred to manipulate the violence degree. Past experience of workplace violence may require prescription to prevent similar trouble.

Second, race and gender may not have direct effect on safety management. However, demographic diversity would increase conflict among members of organizations. Especially, women and black employees are regarded as potential victims of discrimination and violence. Thus, it could be assumed that proportion of potential victims would increase pressures to adopt safety tools. We built this by measuring the ratios of full time and part time women and black employees.

Resource Dependency: Publicly held corporation and sub-unit of larger organization represent resource dependency. The NOS II data provides organizational type. We measured these two variables by making dummy variables when responded organizations are come under designed categories.

Normative Pressure: We measured normative pressure in three variables. First, previous literatures found that organizations with more linkages to outer norms which have authority and social expectation would adopt more tools or to change their structures (Frumkin, & Galaskiwicz, 2004; Casile, & Blake, 2002; Westphal, Gulati, & Shortell, 1997). Following these results, we counted the number of information sources to measure normative pressure from outer authority. The NOS II team asked “when you need information on occupational safety and health, have you ever gone to the following sources?” These sources are National Safety Council (NSC), the Occupational Safety and Health Administration (OSHA), and the National Institute for Occupational Safety and Health (NIOSH). They were manipulated by measuring whether responded organizations get information from each organization on workplace safety (yes=1, no=0). We added up each observation and constructed a variable of outer norm pressure (Cronbach’s alpha=0.702).

Second, normative pressure within organization was measured by forming a dummy variable based on the question of whether there are department of worker safety. This represents norm disseminator who carries formal and informal rules from outer authority by transforming them into organization. Third, we constructed a dummy variable by measuring whether responded organizations are come on public sector.

Models

Negative binomial regression model was constructed to test the hypotheses because the dependent variables have non-negative counted values with Poisson distribution. Linear regression does not fit to construct the model for counted data because it would produce non-sensed, negative predicted values (Gardner, Mulvey, & Shaw, 1995). Therefore, negative binomial model based on Poisson regression which allows the variance of the process to differ from the mean (Cameron, & Trivedi, 1986) is appropriate for the data of this research. Thus, the specified model of this study is following:

$$\ln \lambda_i = \beta' X_i + \varepsilon$$

In this model, λ is both mean and variance of dependent variable and the subscript i

denotes each observation. X refers to vector of covariates of independent variables including control variables and β is coefficient associated with covariates of independent variables. The ε is error term where $\exp(\varepsilon)$ has gamma distribution with mean 1.0 and variance α . Negative binomial model is more suitable than Poisson model where $\alpha > 0$.

Results

The discussions on results of this study starts with the comparison between public and private organization in adopting patterns of safety management system. Table 1 shows public and private differences in adoption of safety tools. Public organization adopted more safety management instruments than private organizations. This result implies that public organizations of which goals are ambiguous may aptly be subject to external environment and social signals. On the other hand, private organizations are more ruled under market forces and they are less conformed than public organizations.

Table 1 Public-Private Differences in Tool Adoption for Safety

Management Tools for Safety			Private	Public	Total	χ^2
Proactive Education and Training	Skills and Techniques for Safe Workplace	Freq.	173	57	230	16.82
		%	50.88	77.03	55.56	
	Sexual Harassment	Freq.	140	63	203	46.99
		%	41.18	85.14	49.03	
	Seminars or Workshops for Safety	Freq.	106	54	160	44.77
		%	31.18	72.97	38.65	
	Conflict Resolution	Freq.	114	56	170	44.60
		%	33.53	75.68	41.06	
	Against Disruptive Behavior	Freq.	90	43	133	27.89
		%	26.47	58.11	32.13	
	Anti-Terrorism	Freq.	56	33	89	28.48
		%	16.47	44.59	21.5	
	Regular Committee for Safety	Freq.	132	45	177	12.00
		%	38.82	60.81	42.75	
Documentation and Formal Process	Documents on Safety and Hygiene	Freq.	218	64	282	14.00
		%	64.12	86.49	68.12	
	Documents on Violence	Freq.	167	67	234	42.43
		%	49.12	90.54	56.52	
	Documents on Weapons	Freq.	178	62	240	24.64
		%	52.35	83.78	57.97	
	Formal Procedures on Resolving Disputes	Freq.	173	67	240	39.22
		%	50.88	90.54	57.97	
	Formal Procedures on Sexual Harassment	Freq.	176	65	241	32.50
		%	51.76	87.84	58.21	
Entrance Control	Guard or Security Officer	Freq.	52	25	77	13.72
		%	15.29	33.78	18.6	
	Burglar Alarm System	Freq.	206	48	254	0.46
		%	60.59	64.86	61.35	

	Metal Detector	Freq.	7	6	13	7.31
		%	2.06	8.11	3.14	
	Requiring ID	Freq.	67	37	104	29.65
		%	19.71	50	25.12	
Post-Management	Counseling for Not Involved	Freq.	124	50	174	24.12
		%	36.47	67.57	42.03	
	Counseling for Victims	Freq.	152	59	211	29.83
		%	44.71	79.73	50.97	
	Counseling for Aggressor	Freq.	122	51	173	27.26
		%	35.88	68.92	41.79	
	Counseling for Victim's Family	Freq.	94	41	135	21.30
		%	27.65	55.41	32.61	
	Aid Relocation for Victims	Freq.	86	30	116	7.00
		%	25.29	40.54	28.02	
Allow Liberal Work Time for Victim	Freq.	224	60	284	6.51	
	%	65.88	81.08	68.6		

Table 2 and Table 3 show the negative binomial regression results predicting the degree of safety management institution. First, we investigated the effects of organizational size and age on adoption of safety instruments. Size has significant and positive impact on the number of safety instruments but age was not statistically significant.

Table 2. Negative Binomial Regression Result (All Samples)

Category	Variable	Model1	Model2	Model3	Model4
Control Variable	(Logged) Size	0.223***	0.185***	0.167***	0.111***
		(0.016)	(0.016)	(0.016)	(0.017)
	(Logged) Age	0.024	0.049*	0.053**	0.03
		(0.029)	(0.027)	(0.026)	(0.026)
Functional Requirement	(Logged) Num. of Violence		-0.009	-0.009	-0.021
			(0.019)	(0.018)	(0.017)
	(Logged) % of Women Employees		0.120***	0.113***	0.117***
			(0.025)	(0.024)	(0.023)
	(Logged) % of Black Employees		0.090***	0.082***	0.084***
			(0.019)	(0.018)	(0.017)
Resource Dependency	(Dummy) 1=Publicly Held Corp.			0.112	0.166**
				(0.084)	(0.081)
	(Dummy) 1=Part of Larger Org.			0.320***	0.259***
			(0.060)	(0.058)	
Normative Pressure	Number of Information Sources for Safety				0.137***
					(0.028)

	(Dummy) 1=Dept. of Worker Safety				0.213***
					(0.059)
	(Dummy) 1=Public Org.				0.170**
					(0.074)
Constant		1.331***	1.770***	1.660***	1.661***
		(0.089)	(0.113)	(0.110)	(0.103)
Observations		414	414	414	414
Pseudo R-square		0.0749	0.0932	0.1057	0.1225
Log Likelihood		-1246.75	-1222.06	-1205.23	-1182.61

*p<0.1, **p<0.05, ***p<0.01; Note: parentheses are standard deviations

Previous researches suggest that size and age could affect structural changes. D'Aunno, Succi, and Alexander (2000) who examined Baum (1996)'s structural inertial theory by testing hypotheses that older and larger organizations are less likely to participate in divergent change and found that size has negative effect on it, although age has no significant effect. Studying Japanese firms' downsizing in 1990s, Ahmadjian and Robinson (2001) also found that size and age have negative impact on structural reduction. On the other hand, Reuf and Scott (1988) suggested that size negatively affects managerial legitimacy but has positive effect on technical legitimacy. This implies that large organizations are reluctant to change their management system but easily adopt new technologies or tools to be added. Kraatz and Zajac (1996)'s literature may support this argument. They studied organizations cumulating professional programs and found that size has positive impact on adopting new programs. Safety management systems do not require organizations to change its whole structure but are simply added to or embedded in. Rather, according to prior studies, organizations would resist to discard existing tools or instruments if organizations are large and old.

The first hypothesis is that the higher functional requirements for safety management, the more organization is likely to adopt safety management systems. There are no significant effects of past experience of violence on the number of adopted instruments for safety in all four models. On the other hand, proportion of potential victims has significant and positive impact on the dependent variable. However, we could not determine that gender and racial ratios have realities because they are in inverse proportion to size. Thus, we adjusted two samples of public and private organizations to be centered on same centile. The results show that no variables of functional requirement have significant effects, although we lost large portion of observations by adjusting centile. This implies that the effect of gender and racial ratio would be resulted from the impact of organizational size. Therefore it is hard to reject the null hypothesis of rational, functional, and strategic choice for organizational safety.

The second hypothesis of this study is that when organization depends on outer environment for their resources, it is more likely to adopt safety management systems. Publicly held corporations have more safety instruments and statistically significant in the model 4. However, this result is not consistent comparing with the model 3. On the other hand, branch organizations depending on larger organizations shows consistently higher probability of adopting more safety management systems. Therefore, the second hypothesis is partially supported.

Our final hypothesis is on the positive effects of normative pressure on the number of adopted instruments for safety management. The number of information sources for safety

has significant and positive impact on the adopted number of safety tools. In addition, when organizations have department of worker safety which provides and transforms safety norms with expert knowledge are more likely to have more instruments. We also found that public organizations show higher probability of adopting more safety tools.

Appendix

Table 3. Negative Binomial Regression Results to Compare Public and Private Org.

Category	Variable	Model5 (Public Org.)	Model6 (Private Org.)
Control Variable	(Logged) Size	0.044**	0.130***
		(0.020)	(0.021)
	(Logged) Age	0.022	0.023
		(0.039)	(0.031)
Functional Requirement	(Logged) Num. of Violence	-0.01	-0.004
		(0.016)	(0.025)
	(Logged) % of Women Employees	-0.008	0.120***
		(0.043)	(0.027)
(Logged) % of Black Employees	0.027	0.097***	
	(0.026)	(0.021)	
Resource Dependency	(Dummy) 1=Publicly Held Corp.		0.136
			(0.092)
	(Dummy) 1=Part of Larger Org.	0.148**	0.263***
	(0.066)	(0.076)	
Normative Pressure	Number of Information Sources for Safety	0.081**	0.139***
		(0.034)	(0.035)
	(Dummy) 1=Dept. of Worker Safety	0.107	0.258***
	(0.075)	(0.075)	
Constant		2.169***	1.673***
		(0.178)	(0.124)
Observations		74	340
Pseudo R-square		0.0929	0.1166
Log Likelihood		-201.43	-948.71

*p<0.1, **p<0.05, ***p<0.01; Note: parentheses are standard deviations

We divided samples into public and private organizations to check which variables have different impact on these two types of organizations. Table 3 shows that public organizations have more safety management institutions only when they are part of larger organizations and linked to safety information authorities. The other variables except size are not statistically significant. On the other side, the model 6 shows similar results with former models with full samples in this study. It could be argued that public organizations are more influenced by institutional forces than private in safety management.

Conclusion and Implication

We investigated influences of three facets on safety management system and induced following implications. First, rational and strategic explanation has less impact on institutional change. The actual number of violence had no significant effect and the proportion of potential victims shows mixed results by adjusting samples. Second, resource dependency representing coercive pressures to adopt safety tools partially affect safety management adoption. Finally, normative pressures have strong effects on the number of adopted safety instruments.

However, this result do not implies that organizations scarcely follow check and action steps to manage safe workplaces. Rather, it is better to argue that the impact of coercive and normative pressures has stronger and that of rationalized strategy is immaterialized. Organizations, especially when they are public, conform authoritative pressures and social norms. Public organizations whose goals and evaluation criteria are more ambiguous easily submit themselves to these non-functional pressures. Safety management, furthermore, combined with other quality management systems and is being evolved to multi-dimensional strategic management skill to attain resources and legitimacy.

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