

LOOKING GOOD *AND* DOING BETTER:
RETHINKING MOTIVATIONS FOR ADOPTING INNOVATIONS*

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Abstract

Prior research in institutional theory suggests organizational motivations for adoption of diffusing innovations will follow a two-stage model where early adopters are primarily motivated by technical gains while later adopters are mainly concerned with legitimacy concerns. We revisit this conventional account of adoption motivations by combining neoinstitutional theory with regulatory focus theory to suggest that decision makers tend to approach adoption situations with a regulatory focus on the pursuit of gains or the prevention of losses. Specifically, we argue that such regulatory foci on economic and social gains may coexist and reinforce rather than preclude each other. We test hypotheses developed from this argument in a study of survey data on hospital adoption and implementation of Total Quality Management (TQM) programs, an administrative innovation that diffused in the 1990s. Results support our argument that an interest in appearing legitimate (“looking good”) can coexist with a motivation to pursue genuine performance improvement (“doing better”).

Institutional theory (Meyer and Rowan, 1977; Zucker, 1977) posits that managers in organizations frequently cope with uncertainty by following what other organizations do when it comes to what names to take (Glynn and Abzug, 1998; Glynn and Abzug, 2002), what markets to enter (Carroll, et al., 1989; Haveman, 1993), how to organize (Meyer, et al., 1983; Scott and Meyer, 1991), and what kinds of operational practices to adopt (Baron et al. 1986; Westphal, et al., 1997). In some of this following behavior, managers imitate what they see other organizations doing because they believe the imitation will do them some technical good, but sometimes they are content to follow because they believe the imitation will make them appear legitimate (e.g. Meyer, et al., 1983). This is indeed a central proposition of institutional theory: organizations pay attention to not only how they are doing but also how they look. That is, they care both about looking good and doing better, and decisions to adopt new organizational forms and practices are driven by both social legitimacy and technical efficiency considerations (Meyer, and Rowan, 1977; Zucker, 1977).

Following the work of Tolbert and Zucker (1983), research in institutional theory has largely suggested that motivations for adopting diffusing innovations follow a two-stage model of adoption in which early adopters seek technical gains of adoption while later adopters are primarily interested in the social benefits of conforming to what earlier adopters have legitimated. In their classic study of civil service reforms, Tolbert and Zucker (1983) found that early adopters of reforms were motivated by a desire to overcome administrative problems. However, as adoption of these reforms spread from city to city, the reforms came to be understood as necessities, and cities that had not yet adopted reforms faced disapproval or even sanctions for their lack of conformity. Tolbert

and Zucker consequently argued that these later adopters implemented reforms primarily out of a desire to appear legitimate. Similarly, in their study of U.S. hospitals, Westphal, Gulati, and Shortell (1997) suggest that early adopters of Total Quality Management (TQM) practices were motivated by efficiency concerns. However, as TQM practices became institutionalized and thus became expected elements of organization, the logic of evaluation shifted and later adopters were motivated primarily by legitimacy concerns rather than efficiency gains.

Although this two-stage model of adoption arguably forms one of the cornerstones of institutional theory and has been invoked by a number of other authors (e.g., Meyer, et al., 1985; e.g., Baron, et al., 1986; Westphal and Zajac, 1994; Scott 1995; Pangarkar and Klein, 1998), several questions regarding this key finding of institutional theory remain. For instance, several researchers have pointed out that empirical tests of the institutional effect underlying the model have largely relied on inference rather than direct examination (e.g., Donaldson, 1995; Scott, 1995; Westphal, et al., 1997). Instead of directly examining the motivations of adopters, most prior studies have tended to infer these motivations either from other characteristics of adopters such as age, size or status (e.g. Tolbert and Zucker 1983) or from later implementation patterns of the innovation (Westphal et al. 1997). While a direct examination of adoption motivations could greatly enhance our understanding of the mechanisms behind the diffusion process, such an examination has so far not been undertaken,

Important questions also remain regarding the completeness of this theoretical account of the diffusion process. For instance, while the two-stage model suggests that later adopters seek social gains rather than technical ones, there is in fact little theoretical

or empirical basis for viewing such social and technical motivations for adoption as mutually exclusive. In fact, motivations for appearing legitimate and achieving higher technical performance may coexist; if a diffusing practice is seen as bestowing higher performance, why would later adopters be any less interested in these technical gains? Conversely, if early adoption may frequently lead to greater prestige and more positive attitudes among a firm's customers (e.g. Rogers, 1983; Kamins and Alpert, 2004), then would early adopters not also be interested in such social gains of being perceived as market leaders?

In this paper, we extend institutional theory by examining the interplay between technical and social motivations among early and late adopters of an innovation. We argue that the classic model of early adopters seeking efficiency and late adopters seeking legitimacy masks complexities of motivation and unobserved diversity within each group. Specifically, we argue that logics of instrumentality and logics of social appropriateness can complement each other and are therefore part of the motivations of both early *and* later adopters. Our goal with this argument is furthermore to reconcile arguments drawing on economic and social explanations of diffusion by developing a more complete account of the motivations behind adoption decisions and how these motivations change over time.

To develop this argument, we draw on research in social psychology that has developed the concept of regulatory focus and applied it to understanding motivations for a wide range of behaviors (Crowe and Higgins, 1997; Higgins, 1997; Higgins, 1998; Brockner and Higgins, 2001). Drawing on the view that managing the self-concept is a primary motivator for action (or inaction), regulatory focus theory suggests that

motivation is shaped by tendencies to focus on either achieving gains or preventing losses. We argue that considering the regulatory focus of adopting organizations allows us to better understand how early adopters are driven by motivations to achieve either greater economic or social gains while later adopters are primarily concerned with avoiding competitive disadvantage or social sanctions.¹ In addition, we examine how such motivations may also affect the extent of the organizations' actual implementation efforts. After developing our arguments and hypotheses, we test them empirically in a study of adoption and implementation of TQM practices among North American hospitals in the early 1990s (cf. Westphal, et al., 1997). Our setting has the advantage of providing both data on the motivation for TQM adoption decisions and considerable variation in how TQM is implemented, thus allowing a rich examination of how the two logics of efficiency and legitimacy affect both adoption and implementation of practices.

RE-VISITING THE 2-STAGE MODEL OF ADOPTION

Although the two-stage model of adoption motivations is a cornerstone of institutional theory (e.g. Tolbert and Zucker 1983; Meyer, et al., 1985; Baron, et al., 1986; Scott, 1995; Westphal, et al., 1997), it has so far been tested only in an indirect manner. For example, Tolbert and Zucker (1983) find that economic and organizational factors such as size, age, and city population have predictive power only for early adopters; they interpret this loss of predictive power for later adopters to mean that later adopters must have been driven by legitimacy rather than efficiency concerns. In a

¹ Though we draw primarily on regulatory focus theory here, it is worth noting that work in goal orientation theory (see Dweck 1999; Dweck and Leggett 1988) provides a complementary logic for explaining action as a function of believing skills to be relatively changeable or more fixed and, as a consequence, to prefer situations where skills can be improved by learning versus proven through performance. To avoid confusing an already complex cross-level connection, we emphasize regulatory focus theory in this paper.

similar manner, Westphal et al. (1997) interpret their finding that later adopters engaged in less customization of TQM practices and showed less performance benefits as evidence that later adopters were motivated by legitimacy concerns rather than efficiency gains. Figure 1 illustrates this classic two-stage model, showing the substitution of legitimacy for efficiency motivations as institutionalization progresses with diffusion.

---- Insert Figure 1 about here ----

However, inferring the motivations of adopters from either residual effects or subsequent modification and performance differences leaves the theory exposed to alternative interpretations. Residual effects may be caused by a variety of factors, including learning efficiencies (e.g., Abrahamson and Rosenkopf, 1993), social networks and positions in them (Abrahamson and Rosenkopf, 1997), and even fashion-like trends in management thinking (Abrahamson, 1991). Likewise, if one allows for the possibility that performance effects of a new practice are not instantaneous, then the higher performance of early adopters could be the result of more time spent learning and adapting the innovation to local needs; recent adopters may not have had enough time to see performance benefits take effect. One way to begin to tease out these alternatives is thus to directly examine the motivations of adopters at different stages of the diffusion process rather than having to infer those motivations from period or performance effects.

Apart from empirical issues, questions about the late adoption effect also stem from theoretical considerations. As Donaldson (1995) points out, if the civil service reforms introduced by many large American cities indeed helped to curb corruption and

promoted internal efficiency, then these reforms would presumably also benefit later adopters. These benefits are themselves a reason for later adopters to adopt such reforms, particularly if they combine the drawing power of improved performance with that of greater legitimacy. In fact, the desire to appear legitimate does not at all conflict with a desire to achieve greater performance—wanting to look good does not preclude wanting to also do well. Technical and social benefits may thus work according to a parallel logic rather than substituting each other, and may even reinforce each other, as higher performance may increase an adopter's legitimacy, and vice versa. This argument furthermore suggests that early adopters may likewise be motivated by both efficiency and legitimacy concerns. For example, early adopters of new technologies or practices may reap social benefits from being perceived as market leaders (Rindova, et al., forthcoming). It thus appears that a dichotomous logic of efficiency and legitimacy motivations as prevailing at different stages of the diffusion process may not fully capture the motivations of both early and later adopters.

A further, unresolved issue in the institutional diffusion model relates to the role of practice implementation. Whether seeking efficiency or legitimacy in adoption, organizations face the task of integrating new practices with existing practices, technologies, and political agendas. Regardless of motivation, each adoption decision thus entails the potential reinvention of both the diffusing practice and the existing organizational environment. While the classic diffusion model largely neglected issues of practice implementation, it is now clear that few practices come out of the diffusion process unchanged (Strang and Soule, 1998). As a result, several authors have called for understanding diffusing practices as dynamic (Rogers, 1978; Rogers, 1983) and for

paying more attention to implementation issues and the resulting variation in practice content as important aspects of the diffusion process (Glick and Hays, 1991; Cool, et al., 1997; Whitten and Collins, 1997).

It appears likely that the efficiency and legitimacy forces responsible for the adoption of a practice should also reach beyond the adoption decision to affect implementation (Zbaracki, 1998). However, very little research has examined how both forces actually influence implementation processes. An exception here is the study of Westphal et al. (1997), which suggests that efficiency concerns will lead to customization while legitimacy concerns will lead to conformity. However, this proposition is again tested indirectly by examining the timing of adoption rather than directly by examining actual motivations. In addition, reinvention patterns may be conceptualized along further dimensions beyond variation in model, including the extent of practice implementation, pointing to the possibility of a decoupling of formal adoption and actual implementation (Meyer and Rowan, 1977; Westphal & Zajac 1994; Fiss and Zajac, 2005).

A particularly important aspect of the Tolbert and Zucker (1983) two-stage model of motivations for diffusion is that it powerfully illustrates the importance of the cognitive aspects of institutionalization on organizational structure and performance (Scott 1995). That is, the two-stage model suggests the institutionalization of practices changes the way organizational decision makers *think* about them (Douglas 1986). The model thus highlights distinct differences in the motivations of early versus later adopters by linking the process of institutionalization to managerial motivations and cognitions that shape adoption decisions. In this paper, we argue that the conventional two-stage model of diffusion does not fully capture the motivations of early versus late adopters,

and furthermore suggest that these shortcomings can be addressed by looking more directly into the cognitive and motivational issues that underlie adoption. To develop this argument, we draw on regulatory focus theory (Higgins 1997; Brockner and Higgins, 2001), which posits that motivations can be categorized broadly into a focus on gain achievement and loss prevention.

REGULATORY FOCUS AND ADOPTION MOTIVATIONS

Differences in motivations between early and late adopters lie at the center of the prevailing institutional model of diffusion, but research that applies institutional theory to innovation remains relatively disconnected from related theory about cognition and motivation that could provide strong foundation for the model. One stream of work that could help make this connection is the program that examines self-regulation as a mechanism that shapes a wide variety of individual decisions. Higgins and colleagues (Crowe and Higgins, 1997; Higgins, 1997; Higgins, 1998; Brockner and Higgins, 2001) have suggested a “regulatory focus” that could be applied to organizational decision makers to explain responses to diffusing practices. Working from the idea that individuals respond to all kinds of situations based on their potential impact to the self-concept, regulatory focus theory suggests individuals’ responses will be driven by sensitivities to gains or losses that are both dispositionally and situationally determined. While some tend to be more motivated to pursue gains, others are more motivated to avoid losses; likewise, some situations tend to prompt attention to the pursuit of gains while others make avoiding loss more salient. Building on the idea of self-regulation—the notion that actors adjust their behavior in relation to both desired and undesired end states—regulatory focus theory suggests that the pursuit of gain versus avoidance of loss

are sources of motivation for action. Specifically, it proposes two broad categories of motivation: a *promotion focus* concerned with the pursuit of positive outcomes, and a *prevention focus* concerned with the avoidance of negative outcomes (Higgins and Silberman, 1998; Higgins, 2000).

The idea of regulatory focus thus refers to important differences in how actors approach situations for their potentially positive and negative outcomes. Following Brockner and Higgins (2001), a promotion focus relates to beliefs about aspirations and *ideal* states (e.g., a manager who wishes to achieve an ambitious quarterly performance goal), while a prevention focus relates to obligations and *ought* states (e.g. a manager feels compelled to match the performance of competitors to avoid falling behind). The goals related to a promotion focus thus feature advancement and growth, while goals related to a prevention focus feature safety and security (e.g. Higgins, 1998). The inclination toward promotion or prevention as a prevailing focus has been shown to be a reliable individual difference variable (Higgins, 1998), but external factors such as behavioral role modeling and feedback from others have also been shown to be antecedents of regulatory focus, suggesting that regulatory focus is multiply determined (Brockner and Higgins, 2001).

We suggest that examining organizational adoption motivations using regulatory focus theory will expand our understanding of the diffusion process for several reasons. First, regulatory focus theory offers a cognitive “grounding” of institutional theory by allowing us to examine how institutional and organizational processes interact. To emphasize institutions’ impact on cognition about legitimate and appropriate organizational forms and practices (Scott 1995) is to suggest not only that they shape how

organizations “think” (cf. Douglas 1986), but also that they influence organizations by shaping the cognition of key organizational decision makers. Yet, interactions between institutional and lower-level mechanisms have rarely been examined. Second, the concept of gains and losses is intuitively appealing when considering the organizational decision making process regarding complex administrative innovations such as TQM. In general, the careers of senior organizational decision makers depend on the success of their organizations, so the prospect of gains or losses to their organizations will generally translate into personal ramifications. Third, as appealing as it might (or might not) be to consider organizations as thinking or feeling motivations, asking decision makers about motivations is practical and meaningful while asking organizations about motivation is perhaps neither.

In the following, we thus argue that organizational decision makers consider both economic and social dimensions of moves to adopt a new practice, and that they frequently approach the decision with a regulatory focus on preventing losses versus promoting gains in either dimension. To illustrate this argument, we map decision dimensions (economic versus social) to regulatory focus options (promotion versus prevention) to produce a 2x2 matrix useful for understanding adoption motivations. Figure 2 combines these elements to present potential adoption motivations in a simple diagram. Early adopters’ motivations appear in the left hand column; this side of the matrix corresponds to a regulatory focus on promoting gains. Later adopters’ motivations appear in the right hand column, the region corresponding to a regulatory focus on preventing losses.

---- Insert Figure 2 about here ----

MOTIVATIONS ASSOCIATED WITH A PROMOTION FOCUS

The logic of the classic institutional model suggests that, in the early stages of a diffusion process, adopters are motivated to achieve efficiency gains that typically require experimentation with different solutions to adapt the innovation to their environments (Tolbert and Zucker, 1983; Palmer and Biggart, 2002). This logic for adoption is captured in the top-left cell of the motivation-focus matrix in Figure 2: adopting organizations are motivated by a promotion focus on achieving economic gains. This leads to our first hypothesis, which re-casts part of the Tolbert and Zucker (1983) two-stage model in terms of regulatory focus theory:

H1a: Early adopters will be motivated by a promotion focus on achieving economic gains.

In addition, however, early adopters may also be motivated by a promotion focus on achieving social gains. An organization may adopt an innovation to distinguish itself from other organizations (e.g., Abrahamson, 1991) and to maintain its high profile status versus competitors (e.g. Rindova, Pollock, and Hayward, in press). For example, early adopters of innovations may reap social benefits from being perceived as market leaders. Thus, being an early adopter may earn the esteem of peers, even to the point of becoming a bellwether for change (Rogers, 1983). Furthermore, being described as a market leader also tends to enhance customers' attitudes towards a firm (Kamins and Alpert, 2004). In contrast to the conventional two-stage diffusion model, this suggests the following hypothesis for early adopters:

H1b: Early adopters will be motivated by a promotion focus on achieving social gains.

Of course, early adopters will not benefit from being perceived as leaders in new practices until others have enough familiarity with the new practice to see it as valuable (or not). Thus, emerging categories for classifying innovation need to stabilize before innovations can be properly valued (Rosa, et al., 1999), but for innovations that emerge at the intersection of established category systems (which is the common case), there are typically reference points against which they can be judged (Hargadon and Douglas, 2001), even early on. Organizations may therefore invoke these reference points to frame adoption and give sense (Fiss and Zajac 2005) to the innovation, thus providing frameworks for other organizations to understand the innovation (Hirsch, 1986; Leblebici, et al., 1991; Strang and Meyer, 1993). Especially when diffusing technologies are not too disconnected to existing technologies or institutional regimes, early adoption can have social significance for both adopters and observers.

A useful illustration of this process can be found in the case of Total Quality Management. This management concept had emerged among American companies in the early 1980s and stressed customer focus, continuous improvement, structured problem-solving processes, and employee empowerment (Juran, 1989; Deming 1993; Anderson, Rungtusanatham, and Schroeder 1994; Hackman and Wageman, 1995; Reed, Lemak, and Montgomery, 1996). By the time TQM practices began to diffuse among U.S. hospitals in the late 1980s, the idea of TQM as a quality enhancement tool was already well established. As TQM was gaining acceptance in other business sectors, applying such

quality management tools to the health care sector became attractive to early adopters interested in distinguishing themselves from their competition. While early adopters were thus likely motivated by a promotion focus on achieving social gains, the increasing diffusion of TQM would set in motion a bandwagon process similar to that for efficiency motivations. As TQM diffused more widely, the gains from being perceived as a market leader diminished while the threat of being perceived as a laggard increased. Later adopters would thus no longer be motivated by a promotion focus, but would instead exhibit a prevention focus on avoiding legitimacy losses.

MOTIVATIONS ASSOCIATED WITH A PREVENTION FOCUS

As innovations that are perceived as having a positive impact on organizational performance are retained and other organizations learn about them, the diffusion process accelerates. While early adopters are guided by a promotion focus to realize technical gains versus their competitors, wider diffusion triggers a second process. As other organizations experience increased competitive pressure from early adopters, they will likewise be motivated to also adopt the diffusing practice, thus setting into motion a competitive bandwagon (Katz and Shapiro, 1987; Abrahamson and Rosenkopf, 1993). However, these later adopters will be motivated not so much by a promotion focus on achieving technical gains as by a prevention focus on avoiding losses stemming from the competitive disadvantages they face relative to early adopters. This part of the diffusion process is represented by the top right cell of Figure 2. In contrast to the dominant institutional diffusion model, we thus argue that later adopters will likewise be motivated by efficiency considerations, although the regulatory focus of adopters will change from

a promotion to a prevention focus in response to the dynamic nature of the diffusion process.

The timing of adoption accordingly determines whether realized performance improvements of diffusing practices confer real competitive advantage or whether they merely allow the organization to catch up to performance levels already realized by earlier adopters (e.g. Kimberly, 1981). As diffusion proceeds, therefore, the potential for competitive advantage diminishes as more organizations adopt, eventually restoring competitive parity and reducing the advantage previously enjoyed by earlier adopters, thus moving all adopters up to a higher performance plateau. With the diffusion and institutionalization of new practices, motivations for adoption shift from the realization of competitive gains of early adoption to the minimization of competitive losses later adopters face; in other words, the regulatory focus of the adoption decision shifts from promotion to prevention as the practice diffuses.² This suggests the following hypothesis:

H2a: Later adopters will be motivated by a prevention focus on avoiding economic losses.

Finally, consistent with Tolbert and Zucker (1983), social motivations for adoption come to the forefront as diffusing practices take on institutional significance.

Existing research emphasizes arguments corresponding to a prevention focus, where later

² These arguments do not depend on the assumption that diffusing practices are, in all cases, producing measurable performance gains. Rather, our arguments allow for the possibility that diffusing practices may even be inefficient (Abrahamson, 1991; Strang and Macy, 2001). What matters is that adopting organizations perceive diffusing practices as relevant to competition, either technically or socially, regardless of whether the practice is found to lead to higher performance through some direct or vicarious learning process (Cyert and March, 1963).

adopters aim to avoid relative legitimacy disadvantage (Tolbert and Zucker, 1983; Abrahamson, 1991). These arguments, which lie at the center of the institutional diffusion account, are presented in the bottom right cell of Figure 2. They are based on the premise that a diffusing practice will tend to acquire legitimacy and thereby eventually become perceived as the appropriate way of organizing, with later adopters implementing the practice in order to conform to emergent norms (e.g., Meyer and Rowan, 1977; Zucker, 1977; e.g., Carroll, et al., 1989). Failing to conform raises the prospect of social sanctions for being out of step with what has become legitimate and standard. Restating this classic institutional argument in terms of regulatory focus leads us to the following hypothesis:

H2b: Later adopters will be motivated by a prevention focus on avoiding social losses.

INTERACTIONS BETWEEN SOCIAL AND TECHNICAL CONSIDERATIONS

The framework we have developed here draws on both efficiency and legitimacy accounts to develop a more complete picture of the diffusion process. While our framework integrates economic and social motives, it furthermore also suggests linkages between both. In prior research, connections between an efficiency and legitimacy motivation have been restricted to a mechanism where an increasing number of efficient adoptions leads to legitimacy pressures. However, our framework suggests that efficiency and legitimacy motivations may also reinforce each other in ways akin to virtuous and vicious circles. Specifically, if enhanced performance itself adds to a firm's standing, and if an enhanced standing facilitates an organization's access to key resources such as

quality employees or attractive customers, then a promotion focus on achieving economic gains may interact with a promotion focus on social gains to reinforce adoption behavior. Similarly, a loss of performance may damage an organization's standing, while a loss of standing in turn may make it harder to obtain the resources needed to secure organizational performance and survival. These arguments suggest that efficiency and legitimacy motivations for adoption not only work alongside each other, but will reinforce each other in the diffusion process. This suggests the following hypotheses:

H3a: A promotion focus on achieving economic gains will interact with a promotion focus on achieving social gains to expedite adoption.

H3b: A prevention focus on avoiding economic losses will interact with a prevention focus on avoiding social losses to expedite adoption.

REGULATORY FOCUS AND PRACTICE IMPLEMENTATION

Most previous research has tended to treat adopters as largely passive entities that either accept or reject the models offered to them and has considered the diffusing items to be largely invariant (cf. Radnor, et al., 1978; Rogers, 1983). However, such an approach neglects the significant aspects of agency in implementing diffusing practices. Regardless of motivation for adoption, each adoption decision entails the potential reinvention of both the diffusing practice and the existing organizational environment that are impacted by the new practice. Furthermore, it appears likely that those motivations responsible for adopting a practice will also matter for the subsequent implementation. Yet, so far very little research has examined how efficiency and

legitimacy concerns affect organizations beyond the moment of adoption, leading to calls for more attention to variation in practice implementation (Glick and Hays, 1991; Cool, et al., 1997; Whitten and Collins, 1997, Zbaracki, 1998). One of the few works that examine practice implementation is offered by Westphal et al. (1997), who argue that early adopters customize a diffusing practice while later adopters make little adjustments and instead implement the normative models established by early adopters. Their argument is based on the conventional view that efficiency concerns stimulate experimentation and variation in implementation, while legitimacy concerns encourage compliance with established and accepted models.

Applying regulatory focus theory to the implementation again offers different insights. Rather than relating to indirectly measured efficiency and legitimacy concerns, it appears likely that implementation behavior will vary along the dimensions of promotion and prevention focus. As suggested by Brockner and Higgins (2001), a promotion focus relates to an actors' internal aspirations, suggesting that actors motivated by a promotion focus will aim to achieve their desired outcomes even in the absence of external controls. Thus, actors motivated by a promotion focus will be more likely to go "above the call of duty." One way to assess this would be to look beyond adoption acknowledgment to assess the depth of implementation activity, especially in terms of resource commitment. When a diffusing practice is thought to enable economic performance improvement, organizational decision makers with a promotion focus will tend it as worth greater efforts at implementation, all else being equal. In addition, when organizational decision makers with a promotion focus consider the social dimension of the adoption decisions, they may see the increased social standing that comes with

leadership as valuable and therefore be willing to work hard at implementation to earn that reputation. These arguments suggest the following hypotheses:

H4a: A promotion focus on economic gains will be positively associated with the extent of practice implementation.

H4b: A promotion focus on social gains will be positively associated with the extent of practice implementation.

In contrast, organizations with a prevention focus are concerned with the avoidance of negatives, making them more likely to focus on the risk of new practices. Accordingly, a prevention focus will incline such organizations not only to later adoption but also to conservatism in implementation. Specifically, organizational decision makers with a prevention focus will see adoption as a risk to operations when they consider the economic performance implications of adoption. In addition to waiting until more is known to adopt, their concern with preventing economic losses is likely to focus them on the risks of adoption implementation. Being highly sensitive to adoption risks is likely to incline them to caution and conservatism in their implementation approaches. Thus, when organizational decision makers with a promotion focus consider the economic ramifications of adopting new practices, they may do less to implement them. Similarly, organizational decision makers motivated by a prevention focus on avoiding social losses are more concerned with duties and obligations and may not be willing to exert more effort or costs than required. Since they are mainly concerned with being seen as compliant with emerging norms, they are unlikely to go “beyond the call of duty” and

should thus likewise implement less extensive versions of the innovation. This suggests the following hypotheses:

H5a: A prevention focus on economic losses will be negatively associated with the extent of practice implementation.

H5b: A promotion focus on legitimacy gains will be positively associated with the extent of practice implementation.

In sum, our arguments suggest that organizations motivated by a promotion focus will implement more extensive versions of a diffusing practice to extract the greatest value from it, while organizations motivated by a prevention focus may aim to minimize their costs by implementing less extensive version of the same practice. These arguments also go beyond previous research by suggesting that implementation will vary not only in respect to customization (Westphal, et al., 1997), but also regarding the extent of practice implementation.

DATA AND METHODS

The data for this study come from National Survey of Hospital's Efforts to Improve Quality conducted by the American Hospital Association (AHA) in 1993. The purpose of the study was to “gather information on how hospitals view and improve the quality of patient care they provide” (AHA 1993). A questionnaire was sent directly to the CEOs of all US community general surgical hospitals. The instructions requested that the CEO fill out the questionnaire personally. A total of 5,492 surveys were sent out, with

3,303 hospitals responding for a response rate of 60%. Of these hospitals, 2,230 adopted some form of TQM. The survey included general questions on hospital size and staff, competitive conditions of the market, and questions relating specifically to TQM, including the type of program in use (if any), reasons for implementing TQM, and participation at a variety of levels in the organization. Access to this data and to supplemental AHA data on a variety of other hospital characteristics such as size and nonprofit status was generously provided by Professor Stephen Shortell, the principal investigator of the original survey.

Dependent Variables. The time of adoption was measured using a categorical variable that indicated when a hospital began using TQM practices: less than two years ago, between two and four years ago, and more than four years ago. Since very early adopters (>4 years ago) accounted for only about four percent of all adopters, we also conducted additional analyses using a dichotomous measure of adoption time that combines these very early adopters with those implementing TQM between two and four years ago. However, results were substantially identical.

Extent of practice implementation is measured using several indicators about the use of TQM practices. The first is a survey item that asked the CEO to indicate on a scale ranging from 1 to 10 “the extent to which you believe that *at this point in time* CQI/TQM philosophy, principles, and methods have been implemented throughout your hospital”(emphasis in the original). Second, we use the percentage of senior managers and full-time equivalent personnel that had received formal quality improvement training as an indicator of TQM implementation throughout the hospital. Finally, we also create a

count variable indicating the number of quality improvement activities used at the hospital at the time of the survey. The activities ranged from benchmarking vs. other organizations to formation of project teams to various aspects of training, organizational support, results reporting, and incorporation of performance into the appraisal process.

Independent Variables. Our measure of a hospital's regulatory focus is based on a series of survey items asking the CEO to rate, on a scale of 1 to 7, how important different reasons were for the hospital's decision to implement TQM. This series of items has the significant advantage that it directly taps into the motivations for adoption rather than having to infer such motivations from other behavior.

If a hospital gave "to be perceived as a market leader" as an important reason for adoption, we took this to indicate a promotion focus on achieving social gains. On the other hand, regulatory agencies such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) exerted considerable coercive pressure on hospitals to implement TQM practices (e.g., Levin and Zajac, 2004). As JCAHO denial of accreditation rates are typically less than 1%, the incidence of economic impact is rare. Since all but the most trouble facilities earn accreditation, we treat accreditation more as a binary seal of approval than a positive indicator or relative quality. Therefore, if a hospital gave "influence of the Joint Commission on Accreditation of Healthcare Organizations" as an important reason for adoption, we took this to indicate a prevention focus on avoiding social losses.

Regarding a regulatory focus on efficiency, we follow previous research in defining efficiency broadly as relating to the improving the performance and internal

functioning of the organization (Tolbert and Zucker, 1983; Westphal, et al., 1997). The AHA survey indicates four adoption reasons relating to a promotion focus on improvements of performance and internal functioning: “improve productivity,” “improve the technical quality of care provided,” “improve service quality,” and “improve patient satisfaction.” A principal component factor analysis confirmed that all four questions loaded highly on a single factor that explained 61% of the variance. We therefore combined these items into a single scale, which showed good reliability (Cronbach’s alpha = .76). Regarding a prevention focus on avoiding economic losses, the AHA offers two adoption reasons relating to avoiding competitive disadvantage: “loss of market share” and “competition from other hospitals/HMOs.” Both items likewise loaded highly onto a single factor (80% of variance explained) and were again combined into a scale that showed good reliability (Cronbach’s alpha = .74).

Control Variables. Firm size has been argued to affect the speed of adoption (Hannan and McDowell, 1984). Consistent with previous research (Westphal, et al., 1997), we therefore control for hospital size using the total number of staffed beds. Also consistent with previous findings, we included dummy variables indicating whether a hospital belonged to a multi-hospital system under common ownership or a strategic alliance involving contractual agreements (Westphal, et al., 1997; Levin and Zajac, 2004). Such network ties may provide hospitals with access to the experiences of other organizations, possibly affecting their likelihood to adopt TQM practices. Since the technological sophistication and knowledge base of a hospital may also influence its likelihood to implement new practices, we add two control variables that assess this sophistication.

The first is a variable that assessed whether the hospital performs high-technology services in-house. These services include stereotactic radiosurgery, magnetic resonance imaging (MRI), position emission tomography (PET), single photon emission computed tomography (SPECT), kidney transplants, other organ transplants, tissue transplants, and bone marrow transplants (cf. Westphal, et al., 1997). We combined these into an index of technological sophistication that showed strong reliability ($\alpha = .83$). The second measure is a dummy variable coded 1 if the hospital was a teaching hospital, i.e. it was approved by the Accreditation Council for Graduate Medical Education to train medical residents (cf. Levin and Zajac, 2004).

To guard against the possibility that our findings are influenced by competitive pressures from health maintenance organizations (HMOs), we also control for the number of competing hospitals and HMOs in a hospital's area. Finally, since maturation and experience with a practice is likely to influence the extent of implementation, we control for the time of adoption in those models that focus on implementation.

Analysis. Since we employ multiple dependent variables, our analysis proceeds in two steps that employ different statistical techniques. In a first step, we use ordered logistic regression to estimate the relationship between different motivations and time of adoption. This technique is appropriate when the dependent variable is ordinal and it cannot be assumed that the distances between categories are equal (Long and Freese 2003), as is the case with our categorical measure of time of adoption.

In a second step, we use OLS and negative binomial regression to estimate the extent of TQM implementation. When our dependent variables are percentages, we estimate OLS

models.³ Where our dependent variables are counts of practices used, we employ negative binomial regression. All of our analyses focus on the sample of 2,230 hospitals that actually did adopt TQM management.⁴ Due to missing values on the different independent variables, the total number of cases varies between 1809 and 1596 for the different models.

RESULTS

The descriptive statistics and a correlation matrix for all variables are presented in Table 1. An examination of the correlations between the regulatory focus variables indicates support for the idea that a regulatory focus on efficiency is not incompatible with a focus on legitimacy. The correlation between a *promotion* focus on efficiency and on legitimacy is fairly high and positive ($r = .43, p < .001$). Likewise, the correlation between a *prevention* focus on efficiency and on legitimacy is also positive and significant, albeit somewhat lower ($r = .15, p < .001$). Together, these descriptive results already indicate that efficiency and legitimacy motivations may be working alongside each other, rather than substituting for each other.

The descriptive results also indicate a clear distinction between a prevention and promotion focus for legitimacy motivations ($r = .02, p > .37$). However, the distinction

³ To examine whether our results were affected by range restrictions since the dependent variables here were measured as percentages, we additionally estimated tobit regression models. However, results were substantially unchanged.

⁴ While Westphal et al. (1997) use a Heckman selection model to control for possible sample selection bias, the main advantage of this model is to allow estimating the value of a dependent variable that would be observed in the absence of selection. However, since our interest is instead in the significance of the independent variables, modeling adopters separately is more appropriate since it is considerably more robust than the selection model and prediction bias has been shown to be negligible (Manning, et al., 1987).

between prevention and promotion for efficiency motivations appears to be less clear-cut, suggesting that there is more overlap between both measures ($r=.31$, $p<.001$).

---- Insert Tables 1 and 2 here ----

Table 2 shows the results of the ordered logit models of the relationship between motivations and adoption period. Model 1 includes only the control variables, while models 2 through 9 add the regulatory focus variables and interaction terms. The results indicate considerable support for a model of diffusion that suggests different and complementary motivations for adoption in the diffusion process.

Regarding our predictions linking motivation to adoption timing, H1a suggested that early adopters are motivated by a promotion focus on achieving economic gains. Surprisingly, this hypothesis was not supported. We did find support, however, for H1b, which held that early adopters are motivated by a promotion focus on realizing the social gains that come with being recognized as a pioneer. H2a suggested that later adopters are motivated by a prevention focus on avoiding economic losses. Again, we find support for this hypothesis. As shown in the models 3 and 9, hospitals whose respondents indicated competition as important to their adoption decision were significantly more likely to be later adopters. We also found support for H2b, the prediction that later adopters are motivated by a prevention focus on avoiding social losses from appearing illegitimate, with the coefficient on our measure of legitimacy considerations indicating that this focus is indeed characteristic of the early diffusion period. In sum, three of the four hypotheses

relating to the different effects of regulatory foci were supported, offering encouraging support for such a model of the diffusion process.

Results for the interactions between efficiency and legitimacy motivations are shown in models 7 through 9. The models indicate that efficiency and legitimacy motivations reinforce each other for a prevention focus, but not for a promotion focus. While H3a was thus not supported, the results do support H3b, which suggested that for later adopters, a prevention focus on efficiency will interact with a prevention focus on legitimacy. The coefficient of the interaction effect is positive, suggesting that the presence of both efficiency and legitimacy concerns will lead organizations to adopt earlier as compared to a situation where only one motivation is present. These findings indicate that the interaction of efficiency and legitimacy concerns is apparently more relevant when organizations are aiming to avoid losses than when they are motivated by a desire to achieve gains.

Regarding the control variables, the results support the finding of previous studies that larger organizations adopt innovations earlier, as indicated by the coefficient for the number of staffed beds. The results also suggest that hospitals belonging to a multi-hospital system tended to be later adopters, perhaps due to coordination issues that allow independent hospitals to move more quickly on innovations and thus adopt earlier.

---- Insert Table 3 here ----

Results for the OLS and negative binomial regressions predicting the extent of implementation are presented in Table 3. H4a suggested that a promotion focus on

economic gains would be positively associated with the extent of practice implementation, while H4b predicted the same effect for a promotion focus on social gains. For both hypotheses, coefficients are positive and significant across three of the four dependent variables, with the fourth coefficient in the predicted direction but not reaching significance. These results offer strong support for the notion that these motivations have parallel effects on the extent of implementation. Our findings thus suggest that both efficiency and legitimacy concerns clearly affect this important dimension beyond the mere adoption decisions.

We also find considerable support for H5a and H5b, which held that a prevention focus on economics and social losses would be negatively associated with the extent of practice implementation. H5a was supported across all four measures, although in model 2 the coefficient for H4b is only significant at the .10 level. However, H5b received only mixed support. For two of the four dependent variables, the coefficient was significant and in the predicted direction, while results for models 1 and 4 did not offer support for the hypothesis. Finally, regarding the control variables for these models, we find the expected strong correlation between time since initial adoption and extent of implementation, suggesting that TQM efforts do mature as hospitals gain experience with them.

DISCUSSION

We began this paper by suggesting that social and technical rationales for adopting new practices can coexist. We developed this argument by integrating arguments about adoption motivations from the considerable literature in sociology and organization theory to work in social psychology that explains motivations for action in

terms of a self-regulatory focus on gains versus losses. Our aim with this interdisciplinary integration of theory has been two-fold.

First, we meant to re-examine the key finding of neoinstitutional theory that later adopters are concerned with social gains “rather than” technical ones. To our knowledge, our study is the first to directly assess adoption motivations rather than inferring such motivations from either residual effects or post-adoption behavior. Since the conventional two-stage model of adoption motivations forms one of the central propositions of institutional theory, our findings carry important consequences for research on institutional forces. Specifically, our results suggest that the previous “rather than” formulation of economic and social benefits dichotomizes motivations for adoption that in fact can and do coexist. When asked why their hospitals adopted TQM, organizational decision makers responded with answers that suggest their adoption decisions were influenced simultaneously by social and economic considerations. In particular, the data show that later adopters appear motivated to prevent the negative effects of being out of step with practices that create both social and competitive pressures to conform and adopt. Though we did not find support for our hypothesis that early adopters are motivated by a promotion focus on economic gains, descriptive statistics confirm there is a moderate and significant correlation between technical and social considerations that fit with a promotion focus. Similarly, our finding that the extent of practice implementation was positively related to having a promotion focus on social gains and negatively related to having a prevention focus on social losses adds further support to our main argument that there is more to adoption motivations than the early pursuit of technical benefits and the later disregard for them in favor of face-saving implementations for conformity’s

sake. Regarding the conventional two-stage model of diffusion, the findings of our study thus suggest not that the mechanisms underlying it are incorrect, but that the model is incomplete—looking good and doing good can and do co-exist.

Second, we wanted to look beyond adoption motivations to see whether they also affect implementation patterns, an area that has so far received very little attention. Our results indicate that a promotion focus on achieving superior economic performance was related to more extensive implementation, but so was a promotion focus on realizing the social or reputational benefits of being known as a market leader. This new finding gives us a richer picture of the early adoption decision. Likewise, we found the extent of practice implementation is negatively related to a prevention focus on avoiding both economic losses and legitimacy. Finding a relationship between adoption motivation and practice implementation fits the notion of “selective decoupling” suggested by Levin (2005), which holds that external pressures to implement did not apply equally across all aspects of TQM, allowing organizations to selectively focus implementation in areas where they anticipated tighter controls while neglecting those where no close scrutiny was expected. Overall, our findings support our belief that the motivations we examined reach beyond adoption to affect implementation patterns, an area that has so far received very little attention.

We also contribute to neoinstitutional theory by taking its concern with cognition and motivation seriously enough to link it with closely related work in social psychology—work that we believe gives depth and foundation to this essential aspect of institutional theory. Although institutional theory links macro-social phenomena like the sameness of organizational structure and practice to cognitive and motivational factors

that explain them, the use of archival methods characteristic in organization theory research has made it difficult to say much about these motivations directly. Fortunately, the data for this study provide a considerable window into the reasons why organizational decision makers adopted a new practice.

Limitations and directions for further study. Although we have been able to take a much closer look at adoption motivations than previous research, data availability has limited our ability to further show how adoption motivations and decisions dynamically change over time. In addition, the survey data used in this study are based on the respondents' self-reported retrospection about events that, in some cases, took places several years before the data were collected. Though the extensiveness of the data collected made it possible to manage these concerns through careful construction of measures, it would be ideal to have data on the exact timing of TQM adoption as well as what aspects of TQM were implemented at that time. This would allow us to say considerably more about the relationship between timing and motivation than is currently possible. Specifically, such data would allow us to explore in more detail how perhaps different models of TQM emerged, spread, or were abandoned in the diffusion process, allowing for a truly dynamic modeling of the diffusion process where later adopters can learn from the experiences of earlier adopters and early adopters might likewise modify their practices to conform to models that only emerge later in the diffusion process. Another question regarding the data used here relates to the social desirability of different adoption motivations. While none of the motivations are likely to be considered undesirably, it is possible that certain motivations, such as improving patient satisfaction,

may be seen as more desirable (Phillips and Clancy, 1972). However, while social desirability may introduce bias into self-reported data, the most common effect on findings is not so much spuriousness but a moderator role (Ganster, Nennessey, and Luthans, 1983). In our study, social desirability as a bias in measurement is thus likely to lead to the underestimation of real effects, thus presenting less of a concern. Furthermore, social desirability of motivations is likely to be unrelated to at least the first dependent variable of interest (the timing of adoption), thereby further alleviating concerns about its effect. Regarding the second dependent construct (extent of implementation), over-reporting of a motivation to improve e.g. patient satisfaction should *lower* the correlation with actual TQM implementation, thus providing a more conservative test. Our finding of a consistent and positive correlation between socially desirable motivations and implementation thus appears all the more robust.

Like in previous work that tests institutional theory (e.g. Deephouse 1996; Westphal et al. 1997), the data for the current study come from a highly regulated industry where institutional norms loom particularly large. While legitimacy concerns or the value of being perceived as a market leader may not be as great in less regulated industries, other research has suggested that gains from social approval may also be found in cross-industry settings (e.g. Staw and Epstein, 2000). However, additional research is needed to establish the role of industry as boundary conditions for the effect of both economic and social gains and losses.

Furthermore, it would be useful to explore more the usefulness of a regulatory focus as a fairly stable aspect of organizations. For example, are some organizations more responsive to the avoidance of threats versus the pursuit of opportunity? If so, what other

factors—such as TMT composition, industry characteristics, or organizational life cycle—might predict the regulatory orientation of the firm? Such research could also explore whether and how institutions shape organizational inclinations to approach decisions with a promotion- or prevention-oriented regulatory focus. One would expect organizational decision makers in institutionalized environments to take a prevention focus when considering growth opportunities in new fields, especially in areas that could become substitutes for their core activities. Conversely, it seems possible that managers working in nascent fields may be under-attentive to the value of approaching opportunities with a promotion focus on social gains, particularly if this may result in such organizations being perceived as leaders in a coalescing group (cf. Kennedy, 2005).

The current study also suggests a reconsideration of the relationship between customization, conformity and the technical versus social benefits of adopting a diffusing practice. Earlier work has all but suggested managers seeking technical benefits from a practice like TQM ought to customize it rather than follow a relatively standard implementation of it (e.g. Westphal et al. 1997). However, the current paper lends weight to a contrary view: while customization is unavoidable for early adopters, it may be ill-advised for many later adopters. Conformity is by definition not an option for early adopters who are blazing trails for others by pioneering applications of new practices, and conformity for later adopters takes advantage of the trail-blazing learning done by early adopters. Thus, later adopters who appear unconcerned with customization may merely be savvy rather than lazy or disingenuous in their adoption of practices like TQM. More research needs to be undertaken to further explore what factors will predict this

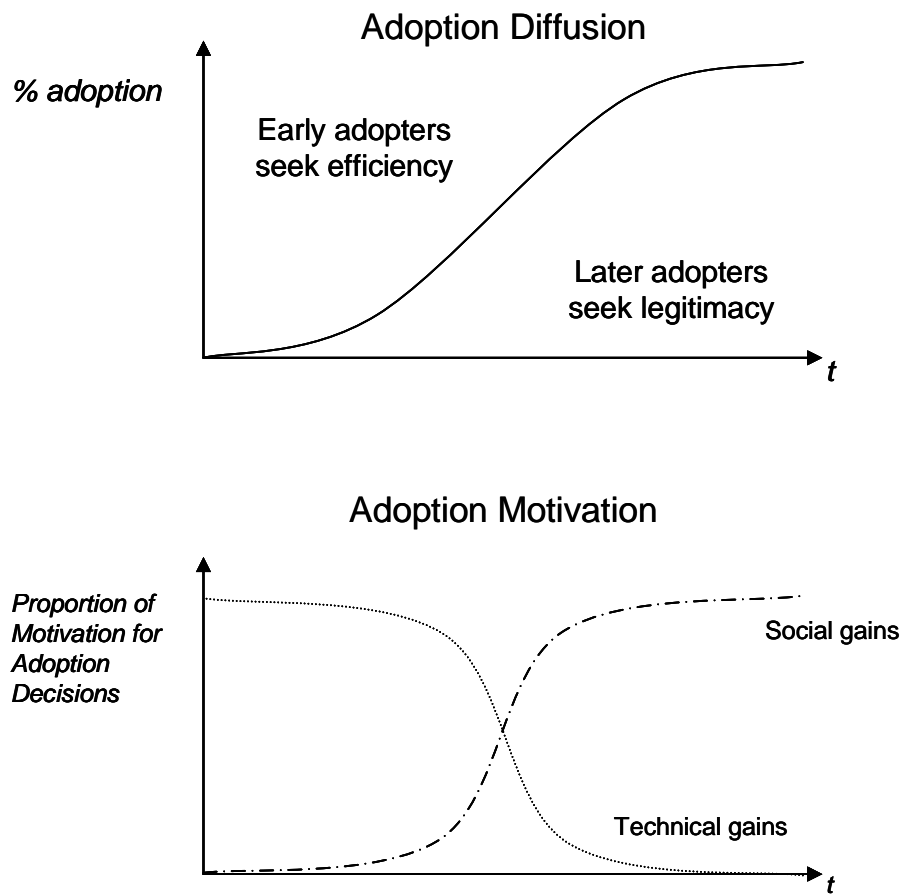
connection between customization, learning, and conformity, and how these are related to performance.

CONCLUSION

This study has aimed to rethink the relationship between institutionalization and motivations for adopting diffusing innovation. Specifically, we have argued that logics of instrumentality and logics of social appropriateness can complement each other and are therefore factors in the moves of both early and later adopters—that wanting to look good does not prevent wanting to do well. While organizations and managers are frequently subject to institutional constraints that limit their ability to be mindful of practices or habits of thinking that are taken-for-granted in their institutional environments, we believe there are times when the role of mindless imitation by managers has been overstated. In the development of institutional theory, early formulations were criticized for viewing managers as cultural dopes who follow each other in pursuit of legitimacy, sometimes rather unthinkingly (cf. Perrow 1986). While more recent research has taken considerable steps towards granting managers greater agency (c.f. Dacin, Goodstein, and Scott 2002), we have suggested that such approaches will benefit considerably from incorporating a theory of managerial motivations grounded in social psychology. The current paper presents a first step into this direction.

Figure 1

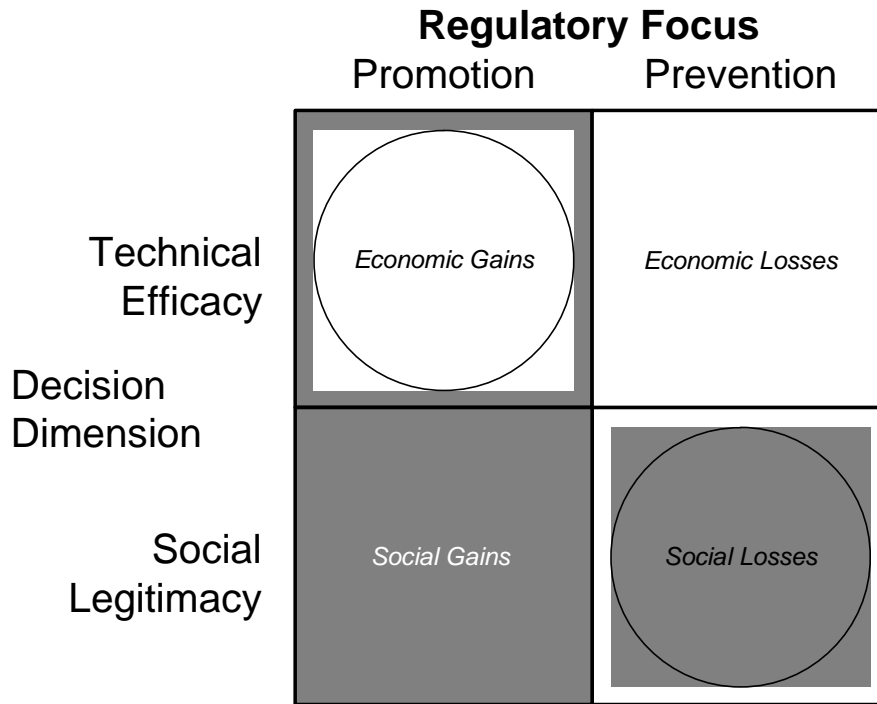
Adoption Motivations over Time Classic Two-stage Model*



*Tolbert & Zucker (1983)

Figure 2:

Motivations for Adopting Innovation A Regulatory Fit Matrix



Legend



Motivations predicted by
2-stage model
(Tolbert & Zucker 1983)



Early
Adopters



Late
Adopters

Table 2: Ordered Logit Models Predicting Time Since Adoption of TQM *

Independent Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Economic Promotion Focus		-0.021 (0.068)				-0.087 (0.079)	-0.079 (0.190)		-0.096 (0.079)
Economic Prevention Focus			-0.085** (0.036)			-0.087* (0.041)		-0.192* (0.089)	-0.232** (0.092)
Social Promotion Focus				0.079* (0.034)		0.135*** (0.041)	0.158 (0.211)		0.135*** (0.041)
Social Prevention Focus					-0.187*** (0.030)	-0.175*** (0.031)		-0.288*** (0.067)	-0.283*** (0.068)
Economic × Social Promotion Focus							-0.009 (0.036)		
Economic × Social Prevention Focus								0.033* (0.019)	0.034* (0.019)
Hospital Size	0.002*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Alliance Membership	0.210 (0.116)	0.171 (0.117)	0.192 (0.118)	0.156 (0.117)	0.152 (0.119)	0.154 (0.120)	0.158 (0.118)	0.168 (0.119)	0.156 (0.120)
System Membership	0.439*** (0.110)	0.431*** (0.111)	0.426*** (0.112)	0.426*** (0.112)	0.469*** (0.113)	0.424*** (0.114)	0.416*** (0.112)	0.447*** (0.114)	0.424*** (0.114)
Technological Sophistication	-0.048 (0.090)	-0.040 (0.091)	-0.044 (0.092)	-0.036 (0.091)	-0.051 (0.091)	-0.045 (0.092)	-0.028 (0.092)	-0.043 (0.092)	-0.039 (0.093)
Teaching Hospital	-0.151 (0.211)	-0.140 (0.212)	-0.150 (0.212)	-0.126 (0.212)	-0.173 (0.214)	-0.154 (0.215)	-0.126 (0.213)	-0.160 (0.215)	-0.136 (0.216)
Competition from HMOs	-0.008 (0.008)	-0.008 (0.008)	-0.006 (0.008)	-0.008 (0.008)	-0.006 (0.008)	-0.004 (0.008)	-0.009 (0.008)	-0.005 (0.008)	-0.004 (0.008)
Competition from Other Hospitals	0.012 (0.012)	0.009 (0.012)	0.014 (0.012)	0.011 (0.012)	0.007 (0.012)	0.009 (0.013)	0.009 (0.012)	0.009 (0.013)	0.008 (0.013)
Observations	1809	1737	1731	1743	1731	1706	1731	1716	1706
Log likelihood	-1204.02	-1177.03	-1163.37	-1170.65	-1165.84	-1123.34	-1165.13	-1132.58	-1121.77
LR Chi square	62.22	56.88	64.03	63.87	99.49	107.32	65.10	103.36	110.47
D.f.	7	8	8	8	8	11	10	10	12

• Standard errors in parentheses.

• $p \leq .05$; •• $p \leq .01$; ••• $p \leq .001$; Significance tests are one-tailed for directional hypotheses and two-tailed for control variables.

Table 3: OLS and Negative Binomial Regression Models Predicting Extent of TQM Implementation *

Independent Variable	Extent of TQM Impl. Throughout the Hospital (OLS)	Pct. Senior Mgmt. Trained in TQM (OLS)	Pct. FTE Staff Trained in TQM (OLS)	Number of TQM Practices Used (Neg. Binom. Reg.)
	Model 1	Model 2	Model 3	Model 4
Economic Promotion Focus	0.219** (0.082)	1.779• (0.902)	2.165• (1.133)	0.013 (0.010)
Economic Prevention Focus	-0.083• (0.042)	-0.691 (0.459)	-0.985• (0.582)	-0.011• (0.005)
Social Promotion Focus	0.087• (0.041)	1.004• (0.450)	0.409 (0.573)	0.018*** (0.005)
Social Prevention Focus	0.097** (0.033)	-0.937** (0.362)	-1.055• (0.459)	-0.002 (0.004)
Hospital Size	-0.001** (0.000)	-0.005 (0.004)	-0.018*** (0.005)	0.000*** (0.000)
Alliance Membership	-0.236 (0.129)	0.306 (1.394)	1.890 (1.773)	0.048*** (0.017)
System Membership	-0.012 (0.121)	2.898• (1.315)	6.543*** (1.667)	0.037** (0.016)
Technological Sophistication	0.067 (0.097)	0.959 (1.055)	-0.781 (1.301)	0.000 (0.012)
Teaching Hospital	-0.041 (0.242)	-4.235 (2.638)	3.352 (3.256)	-0.025 (0.030)
Competition from HMOs	0.012 (0.008)	-0.073 (0.090)	-0.180 (0.114)	0.002 (0.001)
Competition from other Hospitals	0.008 (0.014)	0.005 (0.152)	0.188 (0.190)	0.000 (0.002)
Time since TQM Adoption	1.172*** (0.114)	2.981• (1.250)	13.947*** (1.592)	0.101*** (0.014)
Constant	0.302 (0.606)	81.304*** (6.619)	19.742• (8.377)	2.310*** (0.063)
Observations	1680	1590	1455	1184
F / LR Chi squared	11.50	3.71	11.08	196.66
D.f.	12, 1667	12, 1577	12, 1442	12

* Standard errors in parentheses.

• $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; Significance tests are one-tailed for directional hypotheses and two tailed for control variables.

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