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ABSTRACT

Leadership is one critical factor of effective teamwork, such as information system (IS) projects. The mission of project leaders is to motivate followers and create an effective working environment that allows project teams to effectively meet the predefined goals. However, based on regulatory focus theory, a team may strive to the optional situation (promotion focus) or try to avoid not meeting the minimum requirements (prevention). The aim of this paper is to explore the effect of leadership styles (transformational and transactional) on the regulatory focus of one team (promotion and prevention), and investigate the relationship between regulatory focus and project team performance. Based on data collected from 154 IS professionals, we found that transformational leadership is associated with promotion focus and transactional leadership leads to prevention focus. Furthermore, while promotion focus orientated teams can perform effectively, prevention focus oriented teams are less efficient. Implications toward academia and practitioners are provided.

Keywords

Project management, leadership, regulatory focus theory, project performance

INTRODUCTION

Despite information technology being a crucial business strategy today, the high failure rates of information systems (IS) projects keep challenging contemporary organizations. According to Standish group, more than half IS projects exceeding budget, are behind schedule, or are unable to meet user's requirements (The Standish Group, 2012). Researchers have identified various factors, including technical and managerial issues, as major courses of such a high failure rate (Carson, Tesluk, & Marrone, 2007; Scott & Vessey, 2002). Among which, leadership should play a role since most IS projects are accomplished by teams instead of individuals. A lack of leadership or employing an ineffective leadership style is one top impediment for IS project success (Sumner, 2000). However, in spite of its importance, project management literatures largely ignore the importance of project managers and their leadership style while attempting to understand the success factors or project (Turner & Müller, 2005).

From a managerial perspective, the mission of an ISD project team is to reach a set of goals. The extent to which project teams can accomplish predefined goals effectively and efficiently is one critical index of team performance. While the importance of goal reaching has been identified, past studies largely focus on the ways to better reach those predefined goals (DeShon, Kozlowski, Schmidt, Milner, & Wiechmann, 2004; Locke & Latham, 2006), but ignore that goal reaching may be achieved by how project teams are oriented toward the goal. According to regulatory focus theory (Higgins, 1997, 1998), goals can be classified into "ideal" and "ought to be" two types and actors are driven to lean on achieving ideal situation (promotion focus) or avoiding not meeting ought to be status (prevention focus). In an ISD context, promotion focus oriented teams tend to strive to ideal goals (e.g. high quality system or accomplish project as early as possible). On the other hand, prevention focus oriented teams tend to pay more attention to preventing performance from being worse than the minimum expectation (e.g. try not missing any main functions or not exceeding budget and deadline).

The regulatory focus orientation of one team reflects what the team attempts to achieve and serves as a motivation principle to guide behaviors (Higgins, 1997, 1998). It is then reasonable to suspect that project performance may be determined by the regulatory focus orientation of project teams. Furthermore, given that one major function of leaderships is to motivate a team to move toward a set of predefined goals, it is also reasonable to suspect that the employment of specific leadership styles may lead project teams to be promotion or prevention focus (Neubert et al., 2008). However a lack of systematic study leaves these questions unanswered.

The purpose of this study is then twofold. First, we intend to understand the correlation between regulatory focus and project performance. Exploring the relationship helps pinpoint the importance of regulatory focus in ISD context. Second, we attempt to explore the impact of leadership on the forming of regulatory focus of ISD project team. Understanding whether different leadership styles lead to different regulatory focus allows us to further understand the function of leadership in a project setting. The remainder of the paper is organized as follows: first, we review relevant literatures about leadership and regulatory focus theory. The theoretical gaps that our study addresses are also identified. Next, a theoretical model linking leadership styles, regulatory focus, and project performance is then constructed. Meanwhile, hypotheses were also built. In the third section, we describe how required data were collected. In the fourth section, data analysis and hypotheses test were provided. Finally, we conclude with implications of our work for both academic and practical areas.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In this section, we first reviewed transformational and transactional leadership and their roles in information systems projects. Next, we introduce the regulatory focus theory. Finally, we build the link between leadership styles leading to different regulator focus and hypothesize the relationship between regulatory focus and project performance.

Transactional and Transformational Leadership

In organization, leadership is critical in shaping workers' perceptions toward organization, behaviors associated with organizational change, acceptance of innovations, and motivation to achieve goals. According to Yukl and Heaton (2002) "*leadership reflects the assumption that it contains a social influence process where intentional influence is employed by one person over other people to establish the activities and relationships in a group or organizations*". Leadership has received considerable attention in management over decades and is known to be a critical success factor for project success (Thite, 2000; Turner & Müller, 2005; Yang, Huang, & Wu, 2011).

Leadership can be classified into transformational and transactional two types (B. M. Bass, 1985). The major difference between two leadership styles is that transactional leadership is based on exchanges between leader and follower and transformational leadership goes beyond the cost-benefit exchange of transactional leadership by motivating and inspiring followers to perform beyond expectations. While transformational style leaders tend to inspire and motivate followers through a vision, transactional style leaders focus more on reinforcement and exchanges, accompanied with monitoring. Specifically, *transformational* leadership goes beyond just the simple exchange of rewards for compliance motivating and inspiring followers to perform beyond expectation through visions and charisma leadership. Transformational leaders create new visions, seek new ways of working, search for opportunities in the face of risk, prefer effective answers to efficient answers, and are less likely to stay the status quo (Avolio, Bass, & Jung, 1999; B. M. Bass, 1985). Transformational leaders also provide inspiration and intellectual stimulation to motivate followers by creating high expectation and achievements, and challenge followers with new thinking and ideas. Prior research and meta-analysis have indicated that transformational and transactional leadership have different effects on individual performance (Bono & Judge, 2004; Eagly, Johannesen-Schmidt, & Van Engen, 2003; Howell & Avolio, 1993). Empirical evidence has revealed that transformational leadership predicts positive performance outcomes, whereas the impact of transactional leadership has obtained mixed results, which have reported positive relationships and negative relationships (B. M. Bass, Avolio, Jung, & Berson, 2003; Hater & Bass, 1988; Howell & Avolio, 1993; Howell & Hall-Merenda, 1999).

On the other hand, *transactional* leadership (Turner & Müller, 2005) aims at monitoring and controlling followers through rational or economic means. Transactional leader who can also interact with followers by exerting management-by-exception to focus on mistakes and ineffective performance may punish followers or intervene after standards have not been met and have preference for risk avoidance. According to Hater and Bass (1988), the focus of passive management-by-exception is that leaders keep passive until problems occur and need to correct and then intervene with criticism or disapproval. In an active way of management-by-exception, the leaders actively monitor followers' performances to predict mistakes or problems before they become serious. In either case, negative feedback, punishment, and discipline are the possible outcomes(B. M. Bass & Avolio, 1993; B. M. Bass et al., 2003). Based on the leader's level of engagement with followers and activity level, B. M. Bass (1985) further characterized two types of transactional leadership: contingent reward and management-by-exception. Transactional contingent reward leadership clarifies expectations and negotiates reward agreement when goals are achieved. Rewards and recognition are provided when the followers successfully accomplish their tasks and assignments (Avolio et al., 1999; B. M. Bass, 1985). However, even though leadership has been explored and emphasized in

management, it drew only few little attention in project management literature (Avolio et al., 1999; Kendra & Taplin, 2004; Müller & Turner, 2007; Turner & Müller, 2005). This highlights a need to explore the relationship between relationship and teamwork effectiveness in project management area.

Regulatory Focus Theory

Regulatory focus is a social cognitive explanation of motivation that includes deliberated consideration of needs, goals and consequences. Regulatory focus theory was developed through extending the "pleasure approaching and pain avoiding" concept in psychology (Higgins, 1997, 1998, 2000). This theory proposes that self-regulation exerted differently when serving primarily different needs, such as the needs of nurturance and security. Two types of regulatory focus are then identified (Brockner & Higgins, 2001). First, *promotion* focus is more concerned with accomplishments and advancement with presence of positive outcomes and second, *prevention* focus is concerned with safety and responsibility with presence of negative outcomes.

Each regulatory focus has different results for cognition, decision making, and emotions, as well as for individuals' behavior and performance. The purpose of the promotion focus is to pursue advancement and change and to explore the opportunities of creativity and novelty (Kark & Van Dijk, 2007). Therefore, individuals with promotion focus orientation are more likely to use approaches as a goal achievement strategy, are more sensitive to rewards, tend to be more creative in problem-solving methods, and reveal more willingness to undertake risks. On the other hand, the purpose of the prevention focus is to ensure one's safety and security, to retain routines, and to stay the status quo. Thus, people with prevention focus orientation are more likely to use avoidance as a goal achievement strategy, are more sensitive to punishment, and are more anxious to take risks (Brockner & Higgins, 2001; Higgins, 1997, 1998).

Recent studies on prevention-promotion effects suggest that conditionally operating the regulatory focus orientations are significant predictors of attitudes and behaviors (Cesario, Grant, & Higgins, 2004; Cunningham, Raye, & Johnson, 2005; Lee & Aaker, 2004). While past work on regulatory focus theory has been conducted at individual level of analysis, recent team-level studies have embraced this prevention-promotion focus concept (Florack & Hartmann, 2007; Levine, Higgins, & Choi, 2000; Seibt & Förster, 2004). For example, collective regulatory focus can be part of the identity of a group (Faddegon, Scheepers, & Ellemers, 2008); people who work together overtime developed shared regulatory focus on problem solving strategy(Levine et al., 2000); and regulatory generates effect in a group after a period of time (Florack & Hartmann, 2007). In this study, we apply regulatory focus theory in the team level and argue that the shared regulatory focus orientation within the team is a result of leadership styles exercised by the leaders. Based on regulatory focus theory, in the context of IS projects, individuals may attempt to achieve project goals using either a promotion focus which maximizes positive outcomes (e.g., project success, accomplishment), or a prevention focus which minimizes negative outcomes (e.g., escalation, over-budget). We argue that project leaders have the potential to shape team members' regulatory focus, as suggested by Brockner and Higgins (2001) and Kark and Van Dijk (2007).

Hypotheses development

A research model was developed, as shown in Figure 1. We argue that each leadership style leads to specific regulatory focus of the team. In addition, project performance is a function of regulator focus style of the project team. In the following hypotheses were developed.
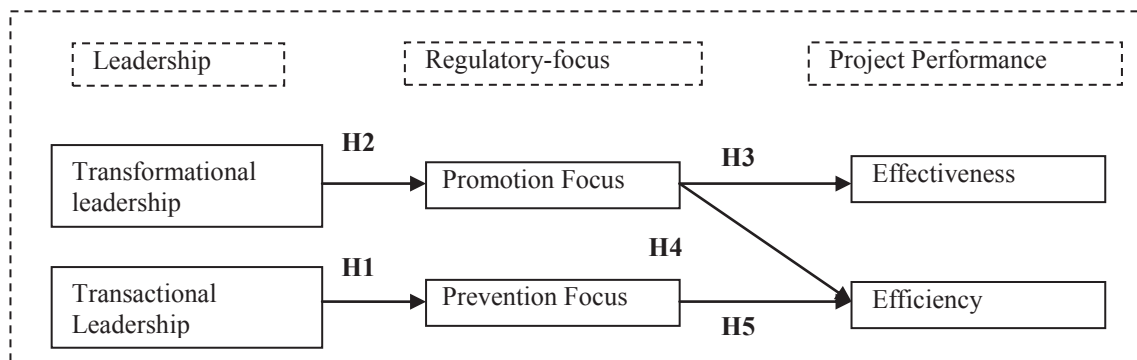

Figure 1 — Research Model

From leadership to regulatory focus

Due to project leaders' potency to administer rewards or punishment, project team members are motivated to comply with leaders' behavior and communication in order to receive rewards or avoid punishment, making leaders even more influential as role models (Treviño, Brown, & Hartman, 2003). Prior research also has proved that leaders can influence the regulatory focus of followers (Neubert, Kacmar, Carlson, Chonko, & Roberts, 2008; Neubert, Wu, & Roberts, 2013). Through self-regulation, project team members can adapt and align their perception and behaviors with the expectations of leaders (Brockner & Higgins, 2001; Higgins, 2000).

The personalities of transactional leaders tend to be more practical and less idealistic (Bono & Judge, 2004). Transactional leaders reward subordinates when their performance is better than expected and, in contrast, punish subordinates when their performance is worse than expected. In addition, transactional leaders pay attention to exceptional conditions, most likely when performance is lower than expected or when members cannot fulfill their responsibilities. This is reasonable because employees are expected to have sufficient performance and, therefore, transactional leaders in general highlight the minimum accepted level performance that each member or the whole team needs to achieve. As an outcome, project team members are affected by leaders and tend to focus on the responsibilities and duties of the project. Therefore, project teams with transactional leaders tend to be more prevention focus and focus on their responsibilities or obligations that they ought to do.

> *H1: Transactional leadership will be positively associated with the prevention focus.*

On the other hand, transformational leaders transform the self-concept of their team members, affective influence and ideal appeal to or reveal the importance of the visions, achievement and involvement.(B. M. Bass et al., 2003; Kark & Van Dijk, 2007). Transformational leaders inspire the whole team and make them believe that the ideal situation is achievable and they are willing to devote themselves on achieving the goals. Transformational leaders may affect their followers to be more promotion focus because they encourage followers to attain their ideal states. We then argue that project teams with transformational leaders tend to be more promotion focus and propose that

> *H2: Transformational leadership will be positively associated with the promotion focus.*

From regulatory focus to project performance

According to regulatory focus theory (Higgins, 1997, 1998), the self-regulatory focus is a fundamental motivational principle influencing multiple human activities and behaviors. Individuals with a prevention focus tend to be more cautious in their behavior and motivated by the perception of obligation or duty, whereas individuals with a promotion focus are more likely to be inspired in their behavior and motivated by the perception of achievement(Kark & Van Dijk, 2007; Scholer & Higgins, 2008).Each regulatory focus also contributes to difference consequences for individual's behaviors and performance(Higgins, 1998).

Speed and accuracy are two important indicators of work performance, as individuals who follow rules and procedures accurately are more likely to work safely and effectively, whereas those who can complete large amount of work more quickly are likely to be more efficient at work. The previous studies have empirically examined that individuals with promotion regulatory focus could enhance their achievement by accelerating the speed to accomplish the work, while individuals with prevention regulatory focus might tend to work in a safe manner by emphasizing on accuracy(Förster, Higgins, & Bianco, 2003; Kark & Van Dijk, 2007; C. Wallace & Chen, 2006).Thus, regulatory focus theory provides clear explanation for why and how individual differ in contexts and situations directed at efficient and effective outcomes at work. Based on theory and relevant findings reported in the IS and project literature, we expect that promotion and prevention focus have effects of effectiveness and efficiency on project outcomes.

The prior project management literature defined project success as achieving project goals, within budget and schedule, and meeting user's requirements(Lewis, 1999). IS project performance can be conceptualized in terms of project effectiveness and efficiency (L. Wallace, Keil, & Rai, 2004). Project effectiveness refers to the extent to which a project accomplishes all tasks and satisfactorily fulfills user's needs. Project efficiency refers to the extent to which a project is delivered on schedule and within budget. It is imperative to study both aspects of project performance, because there is a potential conflict between the efficiency of the project and its quality (Nidumolu, 1995).

Efficiency and effectiveness are two distinct measures of project performance (Henderson & Lee, 1992). Project effectiveness shows well the project is accomplished. Hence, we measure the project effectiveness of project performance on amount of completed work, quality of work produced, and effectiveness in meeting project goals. On the other hand, project efficiency refers to the extent to which a project is delivered on schedule and within budget (L. Wallace et al., 2004).

With the rapid changes of today's information technology of strategic business, user requirements have become increasingly difficult to predict and control (Gorschek et al., 2007). Teams with a promotion focus are motivated to achieve the ideal project goal and seek chances for growth or advancement. They also tend to recall information and memory related to the rewards or positive outcomes in terms of benefit or success (Higgins, Shah, & Friedman, 1997). When teams lean on promotion-focused, project team members are inspired to perform beyond standard expectations with a commitment through a vision and competence influenced by the leader (Brockner & Higgins, 2001; Higgins, 1997; Yukl & Heaton, 2002). Project team members are motivated and have stronger self-efficacy to pursue more challenging goals (Waldman, Ramirez, House, & Puranam, 2001). On the effectiveness side, in addition to solely accomplishing the predefined tasks, project teams tend to move forward and try to develop a high standard system. On the efficiency side, rather than being not delayed or over budget, they also accomplish the predefined tasks earlier than schedule and within budget. Thus, we expect that project teams tend to be more effective and efficient when they are more regulatory focus oriented.

In organization, quantity and quality are two important indicators of work performance, as individuals who pay attention on the final outcome are more likely to work effectively, whereas those who focus on completing large amount of work more quickly are likely to be more efficient at work. The previous studies have empirically illustrated that people with promotion regulatory focus may enhance their achievement by accelerating the speed to accomplish the work or increasing the quality of outcome. On the other hand, individuals with prevention regulatory focus might tend to work in a safe manner by not meeting the minimum requirements (Förster et al., 2003; Kark & Van Dijk, 2007; C. Wallace & Chen, 2006). As an outcome, prevention focus individuals care more about whether they can achieve the goal without violating any work rule but not how efficient they can be."

> *H3: The promotion focus will have a significant positive effect on effectiveness of project team performance.*

> *H4: The promotion focus will have a significant positive effect on efficiency of project team performance.*

On the other hand, we predict that prevention focus will be negatively associated with project performance. When teams are prevention focused, members in the teams are responsive to seeking to attain the goals or standards associated with the obligation and duties and strategically to try to avoid behaviors that mismatch a goal or standard (Brockner & Higgins, 2001). The behaviors with prevention-focus indicated when the project team members face threatening or aversive conditions that arouse the feelings of fear and anxiety to avoid or minimize negative outcomes (Scholer & Higgins, 2008). Prevention focus also is considered as more conservative, risk-averse and less creativity and unwilling to change(Friedman & Förster, 2001). Therefore, project teams with strong prevention focus tend to avoid any changes in the system development process. For example, they tend to stick on the standard procedures of selected method. If the selected method is not appropriate or not allow team members to react to external changes effectively, negative outcome can then be expected. One critical feature of software development is that users' requirements are dynamic and change frequently (Harker, Eason, & Dobson, 1993). Since teams with prevention focus are more attentive on not doing things wrong but not how to do things correctly, we expect that efficiency will be low. As the requirement changes, the team needs to redevelop some functions because those functions are deviated from users' needs. Since prevention focus teams still attempt to achieve the minimum goal, they tend to redevelop those inadequate functions. As an outcome, extra time and costs are unavoidable. It is therefore reasonable to believe that project team members with a prevention focus may reduce the efficiency of project performance. Thus, based on the theory and several consistent findings in the literature, the following hypotheses are suggested:

> *H5: The prevention focus will have a significant negative effect on efficiency of project team performance.*

RESEARCH METHODOLOGY

Data Collection and Sample

Based on our research model, a survey approach was conducted to collect required data. We focused on leading Taiwan companies because they often have their own IS department for IS system development and maintenance. Online questionnaires were mailed to the IS professionals, who were invited to voluntarily and anonymously file our survey based on their most recent experience in an IS project. All respondents were assured that their responses would be kept confidential and used solely for academic purposes. The questionnaire was sent by e-mail. As electronic surveys allow the transmission of more information, they support a better interaction between the researchers and the respondents, and they contribute to a better quality of information, to a faster response cycle and to a reduction in research costs(Klassen & Jacobs, 2001). A total of 1000 questionnaires were sent and 154 were returned, which results in a 15.4 % response rate. Table 1 shows the demographic information of the respondents.

Measure	Categories	#	%	Measure	Categories	#	%
Gender	Male	89	58%	Educational background	< college	5	3%
	Female	60	39%		Bachelor	73	47%
	Missing	5	3%		Master	70	46%
					Missing	6	4%
Age	21-30	22	14%	Position	SA	48	31%
	31-40	102	66%		Senior member	61	40%
	More than 40	23	16%		Other specialties	40	23%
	Missing	5	3%		Missing	5	3%
Industry type	Manufacturing	86	56%	Size of information department	1-5	13	8%
	Telecommunication	2	1%		6-10	18	12%
	Technology	9	6%		11-15	17	11%
	Governance	23	15%		16-20	33	22%
	Other	27	17%		21-40	19	12%
	Missing	7	5%		More than 40	54	35%

Table 1. Demographic information

Construct and measurement

Transformational leadership was measured with four items selected from Bass and Avolo's (1990) Multifactor Leadership Questionnaire (MLQ) Form 5X (B. M. A. Bass, B. J. , 1990; Vera & Crossan, 2004). These four items are corresponding to four scales of transformational leadership: charisma, inspirational motivation, intellectual stimulation and individualized consideration. Although past studies treat transformational leadership as a second order reflective construct (B. M. Bass, 1985; B. M. Bass & Avolio, 1993), we select one item from each first order component to reduce the effort that respondent needs to enter on answering the question. *Transactional leadership* was also measured with four items select from MLQ. Two items focus on contingent reward, which refers to articulating explicit agreements with expectations from project members and how they will be rewarded for their efforts and commitment(B. M. Bass & Avolio, 1993). Another two items were focus on management-by-exception, which refers to monitoring project members' performance and taking corrective action as needed (Barling, Weber, & Kelloway, 1996).

Both *promotion and prevention* focus were measured with items selected from the Regulatory Focus Questionnaire (RFQ) developed by Higgins et al. (2001). All items were wording to reflect the team level nature of this study. The final instrument contains 14 questions—7 for promotion focus and 7 for prevention focus (Higgins et al., 2001; Lockwood, Jordan, & Kunda, 2002).

Project performance represents the degree to which a project achieves targeted goals effectively and efficiently. The measure for project effectiveness and project efficiency were adapted from Rai and Al-Hindi (2000). *Project effectiveness* refers to the extent to which a project accomplishes all project tasks and satisfactorily fulfills user's needs. *Project efficiency* refers to the extent to which a project is delivered on schedule and within budget (L. Wallace et al., 2004). Except for efficiency that is measured with the percentage of delay, all items were rated using a 5-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5).

Validity and reliability information are provided in Table 2 and 3. Reliability is assured since both composite reliability and Crobach's alpha are high and no indicator has loading value lower than 0.5. Convergent validity is assured with acceptable loading values and averaged variance extracted (AVE). Discriminant validity is assured since correlations of any paired indexes are all lower than 0.9 and are smaller than the square root of AVE. In order to exclude the potential variance resulted from common method used, Harman's single factor analysis was performed. Common method should not be an issue since more than two factors are extracted. Furthermore, we also compared the first and last quarter sample. Insignificant results indicate that non-response bias may not be an issue in our study.

Construct	Measure	Loading
Transformational Leadership α: 0.89 CR:0.92 AVE:0.75	Encourages us to express our ideas and opinions.	0.826
	Inspires loyalty to the organization.	0.825
	Enables us to think about old problems in new ways.	0.897
	We can count on him/her to express his/her appreciation when we do a good job.	0.858
Transactional leadership *α: .0.70* *CR: 0.80* *AVE:0.51*	There is a close agreement between what we are expected to put into the group effort and what we can get out of it.	0.502
	Whenever we feel like it, we can negotiate with him/her about what we can get from what we accomplish.	0.654
	It is all right if we take initiatives but he/she does not encourage us to do so.	0.834
	Only tells me what we have to know to do my job.	0.806
Prevention focus *α: 0.89* *CR: 0.92* *AVE: 0.61*	We frequently think about the person we are afraid of and we might become in the future.	0.806
	We often worry that we will fail to accomplish our project goal.	0.833
	We often image ourselves experiencing bad things that we fear might happen to us.	0.822
	We frequently think how we can prevent failures in our project.	0.847
	We see ourselves as someone who is primarily striving to become the selves "ought" to be –to fulfill our duties, responsibilities and obligations.	0.826
	In general, we focus on preventing negative events in our project.	0.602
	We are anxious that we will fall short of our responsibilities and obligations.	0.702
Promotion focus *α: 0.92* *CR: 0.94* *AVE: 0.68*	In general, we focus on achieving positive outcomes in our project.	0.84
	We typically focus on the success we hope to achieve in the future.	0.843
	We frequently image how we will achieve our hopes and aspirations.	0.887
	We often image ourselves experiencing good things that we image might happen to us.	0.666
	Our major goal in project right now is to achieve our project ambitions.	0.843
	We see ourselves as someone who is primarily striving to reach our "ideal self"- to fulfill our hopes, wishes and aspirations.	0.885
	Overall, we are more oriented toward achieving success than preventing failure.	0.777

effectiveness α: .089 CR:0.93 AVE:0.82	Ability to meet project goals.	0.927
	Expected amount of work completed.	0.915
	High quality of work completed.	0.874
efficiency α: 0.77 CR:0.86 AVE:0.68	The extent of project delay.	0.787
	The extent of cost overruns.	0.856
	The extent of incomplete project.	0.823
"Note: All factor loadings are significant; Cronbach's alpha values are all higher than 0.7; Composite reliability values are all higher than 0.6; and averaged variance extracted are all higher than 0.5 (Hair & Black, 2006)		

Table 2. Reliability and validity

Descriptive analysis					Correlation matrix					
Construct	Mean	Std. dev.	M3	M4	1	2	3	4	5	6
1. Transformational	3.29	0.98	-0.37	-0.77	0.82					
2. Transactional	3.05	0.83	0.48	0.28	-0.38	0.91				
3. Promotion	3.64	0.83	-0.32	-0.46	0.34	-0.07	0.78			
4. Prevention	2.94	0.93	0.43	-0.41	-0.26	0.74	-0.07	0.82		
5. Effectiveness	3.80	0.87	-0.63	0.53	0.07	0.17	0.62	0.18	0.71	
6. Efficiency	3.27	0.67	1.49	1.04	-0.16	0.60	0.08	0.71	0.32	0.87
M3:Skewness M4: Kurtosis; The diagonal line of correlation matrix represents the square root of AVE										

Table 3. Descriptive analysis and correlation matrix

Analysis and discussion

According to (Hair, Ringle, & Sarstedt, 2011) , PLS should be adopted when the purpose of study is theory building instead of confirmation. Since the purpose of our goals is to integrate two different theories in one model and to predict team performance with different leadership styles, we adopt PLS instead of covariance-based SEM. The validation of measurement includes item reliability and discriminant validity analysis. As shown in Figure 2, all proposed hypotheses were found supported. Transformational leadership has strong effect on promotion focus (β =0.70; p < 0.01) when the effect from transactional leadership is controlled. Transactional leadership has strong effect on prevention focus (β=0.62; p < 0.01) when the effect from transformational leadership is controlled. Therefore, both H1 and H2 are supported. In addition 56.5% variance of promotion focus is explained by transformational leadership while 37% variance of prevention focus is explained by transactional leadership. For the links from regulator focus to project performance, while effectiveness is strongly affected by promotion focus (β =0.73; p < 0.01), efficiency is found determined both promotion focus (β=0.23; p < 0.01) and prevention focus (β =-0.34; p < 0.01). Therefore H3, H4, and H5 are supported. In addition, the variance explained by regulatory focus is 54.5% for effectiveness and 17% for efficiency. We conducted three Sobel tests to clarify the mediating effects of regulator focus on the relationship between leaderships and project performance indexes. Two of them are found significant: (1) promotion focus mediates the effect of transformational leadership on project effectiveness, and (2) prevention focus mediate the effect of transactional leadership on project efficiency.

Aligning with our expectation, all hypothesized links were found supported. Project teams tend to have strong promotion focus when managers exercise transformational leadership. On the other hand, project teams tend to be more prevention focus when managers are transactional oriented. Even though each type of leadership generates specific effect, R-square values reveal that transformational leadership has stronger predicting power on promotion focus. For the relationship from promotion focus to project performance, high coefficient and R-square value indicate that promotion focus has very strong effect on effectiveness. However, even though both types of regulatory

focus were found to have effect on efficiency, low R-square value indicates that efficiency of project performance is determined by other variables, in addition to regulatory focus. Furthermore, the negative impact of prevention focus on efficiency reflects one interesting phenomenon. Project teams are less likely to be efficient if their goal is trying not to be inefficient.
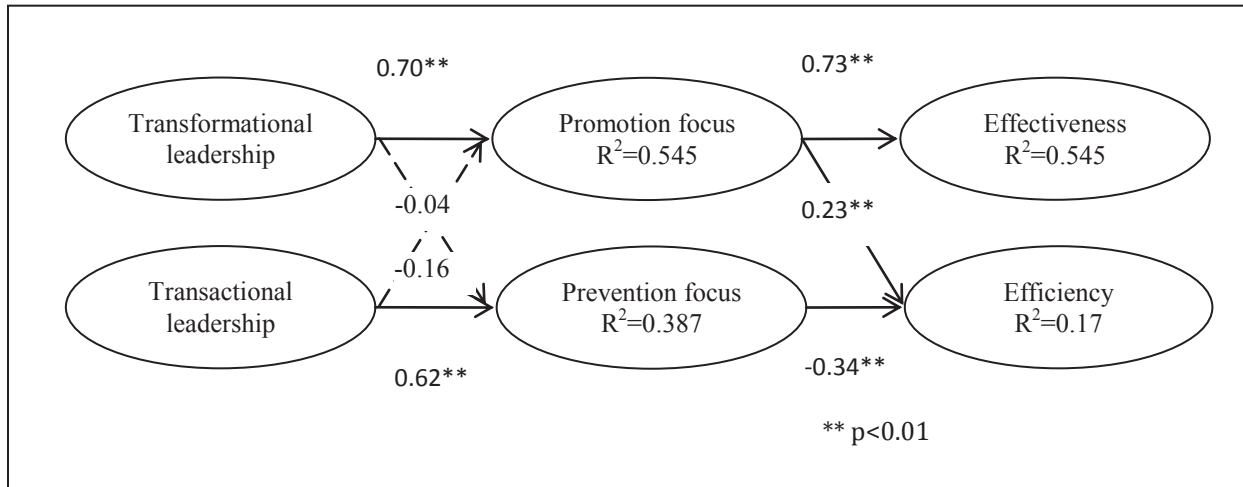

Figure 2. Path analysis

THEORETICAL IMPLICATIONS

Taken together, our research model and results contribute to the literature in several important ways. First, our study makes a theoretical contribution to the existing body of knowledge on IS project performance by establishing a connection between leadership styles and regulatory focus orientations. Specifically, the study offers new sights regarding how leadership of IS project managers influence motivation of the whole team, which in turns affects IS project performance. Previous leadership research had already established the impact of leadership on project performance directly (Anantatmula, 2010; Keller, 2006; Munns & Bjeirmi, 1996; Thite, 2000), or indirectly through affecting teamwork climate (Eisenbeiss, van Knippenberg, & Boerner, 2008; Rickards & Moger, 2000). Through integrating regulatory focus theory and leadership perspective, we proposed and confirmed that transformational leadership style has positive effect on evoking the promotion focus and transactional leadership results in prevention focus. Furthermore, while promotion focus promotes project performance, prevention focus hinders project teams to efficiency. Thus, we provide another explanation for the effects of leadership on performance.

Second, we contribute to regulatory focus research by successfully applying this theory to team level. Even though some studies point out that regulatory focus may be applied to team level and few studies really study regulatory focus in team level, they are either conceptual or experimental based studies. How the whole team is motivated by leaders hasn't been explored. We addressed this gap in the project management literature and empirically constructed the links between two distinct leadership styles (e.g., transactional and transformational) and two motivational forces of regulatory focus (e.g., promotion and prevention). This is a pioneering study in testing the regulatory focus of teams. This is critical because the increasing reliance on the team-based structures in the context of IS project. Our study extends earlier work by Kark and Van Dijk (2007), who explain various leader behaviors can arouse a promotion focus or prevention focus at group level.

Third, most previous regulatory focus studies focus on the impact of regulatory on individuals' behavior, attitude, or affective status. We extend this research stream by showing its impact on performance. Our results show that promotion focus has positive impact on team performance and prevention focus has negative impact on team performance. However, this study also raises more questions than it has answered. For example, it would be interesting to know whether teams with promotion focus orientation can always perform better and teams with prevention focus orientation always perform worse. Future studies may explore possible moderators on the relationship between regulatory focus and performance.

PRACTICAL IMPLICATIONS

Previous research have indicated that transformational leadership substantially influences followers motivation and performance very differently from transactional leadership (Dvir, Eden, Avolio, & Shamir, 2002; Howell & Avolio, 1993). However, in the specific context of IS project, the literature provides little evidence and insights for project management. Specifically, the manager's leadership role is of critical importance in motivating people and creating an effective working environment in order to meet variety of challenges in today's rapid-fire information technology innovations. The results of our study highlight the importance for project managers to choose the preferred leadership style. Specifically, our study advices project leaders to employ transformational leadership style to evoke the promotion focus motivations among the project team members. It is particularly essential to focus on developing the promotion focus orientations through a vision to influence team members' perception and behaviors. Meanwhile, project leaders should avoid being a transactional leader who only focuses on punishment because doing so drive the whole team to be prevention focus. On the other hand, higher managers should pay more attention to the selection of project managers. For those who only exercise transactional leadership should avoid taking charge of projects with strong demand for being efficient.

CONCLUSION

In this paper, we aim to address the theoretical gap between leadership and motivation in the context of information system project management. To achieve this objective, we first draw from two distinct leadership styles - transactional and transformational leadership (Avolio et al., 1999; B. M. Bass, 1985), as well as from the theory of motivational orientation-regulatory focus (Higgins, 1997, 1998) to develop a conceptual framework to advance further studies on the underlying mechanism that enable project leaders to influence the motivation of their project team members and ultimately, their behaviors in terms of project performance .

We empirically tested our proposed model with 154 IS projects. The results confirmed our expectations that transformational leadership leads to promotion focus and transactional leadership leads to prevention focus. While teams with promotion focus orientation tend to perform better, teams with prevention focus are less efficiency. Several implications toward academia and practitioners can be drawn from this study. However, applying the results of this study should pay attention on the following issues. First, this is a cross-sectional study based on regional data. Longitudinal study may be needed to examine whether regulatory focus orientation also affects leaderships. Project leaders may be forced to adopt certain types of leadership when project teams exhibit explicit regulatory focus. In addition, data from other countries may be needed to assure the external validity of the found results. Second, response from one member in each team was used to represent the whole team. However, in order to understand the teamwork process better or assure the validity of collected data, opinions from all members should be obtained.

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