Abstract

While it is widely agreed that obtaining top management support is critical for the success of IT projects, little research has provided prescriptive implications for how such support can be obtained. Much of the prescriptive literature has argued for cognition-based approaches, where managers are persuaded to participate in an IT project using logical arguments and factual evidence. We apply a persuasion view to investigate how management can be persuaded to participate in an IT project. Through a survey, we demonstrate the importance of not only cognition, but affect; one can influence top management’s emotions to support an IT project. Our results demonstrate the effectiveness of two persuasion behaviors by the project team on management attitude and participation. Both persuasion behaviors induce management participation by increasing management’s cognitive and emotional involvement in the project, albeit with emotion being a stronger predictor of management participation. Some important implications for theory and practice are discussed.

Keywords: management support, IT project, persuasion, cognitive involvement, emotional involvement
1 INTRODUCTION

Management support has been argued to be the most critical factor for IT project success (Iacovou and Nakatsu 2008; Liu et al. 2010). The received wisdom posits that top management support can remove various barriers that are structurally incompatible with success implementation, such as weak managerial authority of the project team or memory burdens from past implementation failures. Extant research largely focuses on the consequences of management support for IT projects (Dong 2008; Dong et al. 2009; Liang et al. 2007; Sharma and Yetton 2003; Thong et al. 1996). However, how the project team obtains management support is seldom studied (Ngwenyama and Nielsen 2013; Young and Jordan 2008). As projects often exist outside of regular organizational structures and can challenge incumbent practices and structures, obtaining management support is seldom easy (Ford and Randolph 1992; Pinto 2000).

Research outlining ways for obtaining top management support generally argue for cognitive approaches based on logical argument and factual evidence (Liu et al. 2010). However, cognitive arguments are often insufficient for obtaining top management support. This is especially true given conflicting interests between organizational constituents; there are often political and other locally rational reasons top management does not support an organizationally rational IS project (Weber 1968). The broader social influence literature suggests that beyond cognitive arguments, affective (i.e., emotional) arguments can be applied to influence others (Kipnis et al. 1980; Yukl et al. 1993; Yukl et al. 1995).

This paper studies how a project team can persuade top management to actively participate in an IT project. We argue that managers’ reactions to a persuasion attempt are not restricted to their cognitive responses, but include their feelings and emotions. Failure to influence stakeholders’ emotions can be a key reason why well-thought-out IT projects fail to attract support from users and management (Lapointe and Rivard 2005). Specifically, we address two research questions:

1. What persuasion behaviors can an IT project team take to influence managerial attitudes towards behavioral participation in an IT project?
2. What role does emotion play in managerial support toward an IT project?

We address these questions through a survey of 125 IT project teams’ employment of three persuasion behaviors. We posit there are two components to each persuasion communication: a cognitive and emotional element (Buck et al. 2004). Therefore, managers may react cognitively and emotionally to a project team’s persuasion attempts. It is still not clear how managers’ psychological processes play out to reach the desired outcome of support for an IT project. Cognitive and emotional involvement are distinct psychological reactions evoked by a persuasion communication, such as an advertisement (Krugman 1965; Mitchell 1979; Mitchell 1981; Mittal 1987; Mittal 1989). The advertising literature has a long history in studying audiences’ psychological processing of persuasion communications (Krugman 1965; Mitchell 1981; Mittal 1987; Park and Young 1983; Park and Young 1986; Perse 1990). Both cognitive and emotional involvement are processes that lead to an audience’s favorable or unfavorable attitudes towards an object. We differentiate and study managers’ cognitive and emotional involvement as the processes by which managers allocate their psychological resources to parse persuasion communications initiated by an IT project team.

Thus, besides elaborating on the concept of involvement, this paper seeks to ascertain how cognitive and emotional involvement of managers can be evoked to increase their support for IT projects. We use a persuasion view for theorizing managers’ psychological involvement in IT projects. Through this perspective, we clarify the concept of involvement and identify how it can be evoked by a project team’s persuasion behaviors and contribute to the persuasion of managers.

The remainder of the paper is organized as follows. The next section reviews the literature and develops a framework that outlines how three persuasion behaviors by the project team impact
management attitude toward behavioral participation in an IT project. The method is described next and the results follow. The paper ends with a discussion of the results and implications for research and practice.

2 CONCEPTUAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

The project management literature has repeatedly emphasized the importance of having top managers supporting projects (Aloini et al. 2007; Dong 2008; Liang et al. 2007; Sharma and Yetton 2003; Thong et al. 1996; Young and Jordan 2008). Some even rank it as the most important factor for project success (Iacovou and Nakatsu 2008; Kappelman et al. 2006; Liu et al. 2010; Young and Jordan 2008). For large, cross-functional IT projects, managerial support is particularly important for two reasons: first, management can intervene to settle disputes (Gosain et al. 2005) and mandate and coordinate efforts (Cooper and Zmud 1990); second, given their interest in a project and formal power, managers can engage or cause other constituents within the organization to act (Grint and Willcocks 2007) and transform their attitudes so they embrace a collective identity and collective interests (Shamir et al. 1993).

Some literature suggests ways top management support can be successfully solicited. For example, Liu et al. (2010) suggest tangible deliverables help give management a sense of what the project will ultimately provide. Elbanna (2012) suggests the use of different reporting artifacts and communication tools to align top management with project interests. These studies mainly assume that rational methods of persuasion are best to align managerial participation with a project. However, beyond these few articles, little research has actively investigated how management can be persuaded to support a project.

This paper characterizes obtaining management support as a persuasion process, with the project team (the agent) seeking to persuade management (the target) to support a project. Persuasion occurs when there is any positive change in attitude (Petty and Cacioppo 1986). Specifically, communication that succeeds in generating a positive reaction from the manager is considered persuasion (Batra and Ray 1986; Krugman 1965; Park and Young 1983). Since attitude is impacted by both cognition and emotion (Bagozzi and Burnkrant 1979), managers’ attitudes may change as a result of their cognitive and emotional involvement in a persuasion communication. Even in pre-history, it has been recognized that one can be persuaded through both logic and emotion. Aristotle, for example, talked about both logos (persuasion through pure reasoning) and pathos (persuasion through arousal of emotions) (Becker 1963; Knepprath and Clevenger Jr 1965). Since Aristotle, numerous theories of persuasion have been developed that consider both logic and emotion. Examples include the affect-reason-involvement model (Buck et al. 2004), Foote, Cone and Belding model (Vaughn 1980) and affect infusion model (Forgas 1995). That emotion can sway peoples’ attitudes is well documented (DeSteno et al. 2004; Wegener et al. 1995).

Involvement refers to how the target processes or reacts to a persuasion communication by placing a variable degree of importance and relevance on the communication (Park and Young 1983). It signals the target’s receptivity of the communication either cognitively or emotionally. Following Krugman (1965), we consider cognitive involvement as the extent of conscious bridging and connection managers make between an IT project and individual goals or departmental objectives when exposed to persuasion communications. Cognitive involvement demonstrates the mental process of elaboration that relates incoming project information toward existing knowledge or goals (Petty and Cacioppo 1986). It can be calculated in principle (Eisenberger et al. 1990; Ratchford 1987). As a consequence, information processing will be cognitive, stressing economic value of the project. This is similar to the central-route processing in the dual-processing model of persuasion where substantive arguments and evidence are objectively processed to reach a conclusion (Petty and Cacioppo 1986; Petty and Wegener 1999). Research on persuasion has applied a number of models to explain how cognitive involvement leads to persuasion. Such models include the cognitive elaboration likelihood model...
We assume managers’ cognitive involvement will positively influence their participation in an IT project. During an IT project, there is competition to attract managers’ attention (Dutton and Ashford 1993; Elbanna 2012). As managers invest more cognitive resources in aligning project goals with their personal or departmental goals, they are more likely to make sense of the project and be given an opportunity to create translations and understandings about project goals. Management demonstrates high cognitive involvement when they actively request more information and feedback about the project, translate project values into their own words, and engage in confirmatory activities such as envisioning action plans to realize project goals. Also, managers’ cognitive involvement tends to produce accessible and salient rationale for their current perspective, thereby serving to defend against challenges and guide their behaviors. We thus hypothesize:

H1: Management cognitive involvement will be positively related to management participation.

On the other hand, emotional involvement occurs when an IT project meets managers’ social or emotional needs, such as affiliation, identification or gratification of ego (McGuire 1974; McGuire 1976; Park and Young 1983; Ratchford 1987). Emotional involvement is a subjective reaction to affective cues which have no intrinsic link to an issue but can influence feelings or thoughts of the target (Zhang 2013). Distinct cues may include attractiveness of the agent, relationship with the agent or the communication style. This is similar to the concept of peripheral-route processing in the dual-processing model where cues are linked with some emotional state (Petty and Cacioppo 1986; Petty and Wegener 1999).

We propose that managers’ emotional involvement will likewise positively influence management participation in an IT project. Prior literature has indicated that emotional involvement can decisively influence managers’ behaviors. Changed behaviors arising from emotional involvement have been documented in studies on employee performance appraisal (Wayne and Liden 1995), interaction quality with subordinates (Wayne and Ferris 1990), and investment decisions (Keil 1995). Thus, we posit that as managers like the project more, they are more likely to feel the project is important, take on personal responsibility for the outcome of the project, and thus increase their participation in the project. We thus expect:

H2: Management emotional involvement will be positively related to management participation.

Given that managers are persuaded through the processes of cognitive and emotional involvement, how should the project team (the persuading agent) influence top management’s attitude? Organizational influence theory suggests multiple mechanisms can influence managers, including rational persuasion, personal appeal, exchange and coalition (Ngwenyama and Nielsen 2013). Prior studies have indicated that coalition is seldom an effective method of persuasion; it only induces compliance (Dosier et al. 1988; Falbe and Yukl 1992; Kipnis and Schmidt 1988). While other mechanisms have been suggested (e.g. ingratiation, pressure) (Yukl and Tracey 1992), these other mechanisms have not been found to be persuasive on management (Ferris and Kacmar 1992; Kipnis et al. 1984; Pandey and Bohra 1986).

In the context of strategic IT projects, Enns et al. (2003) concur that rational persuasion and personal appeal are effective mechanisms to persuade top management. Prior studies also support the effectiveness of exchange (Falbe and Yukl 1992; Fu and Yukl 2000; Yukl and Tracey 1992). A reciprocal relationship has long been considered a strong cue to persuade people (Kelman 1961; Merrilees and Miller 1999). Therefore, we argue that effective mechanisms for persuading managerial participation in an IT project are rational persuasion, personal appeal, and exchange. These are defined as follows:

Rational persuasion. The agent uses logical arguments and factual evidence to show the target that an objective is feasible and superior to alternatives (Yukl et al. 1995; Yukl et al. 2008). For example, the
project team may construct arguments, showing the manager that the project will contribute to
individual departmental goals, and provide statistics and case descriptions to support their arguments.

**Personal appeal.** The agent evokes the target's feelings of loyalty and friendship toward him/her
when asking for something (Yukl et al. 1995; Yukl et al. 2008). For example, the project team may
ask the manager as a friend to attend project meetings or help monitor the project.

**Exchange.** The agent offers something the target wants or promises to reciprocate at a later time, if the
target helps accomplish a task (Yukl et al. 1995; Yukl et al. 2008). For example, the project team may
promise to bolt on a new system function in return for the manager's participation in the project.

All three persuasion behaviors incorporate both rational arguments and affective cues, though some
may be predominantly rational and some predominantly affective. For example, while rational
persuasion appears rational on its surface, explicitness in what the team is thinking and doing can be
an affective cue that induces emotional involvement of managers. The above theorization suggests the
model presented in Figure 1. In the following sections, we elaborate on the proposed model.

![Figure 1. Research model](image)

### 2.1 Rational Persuasion

We posit that rational persuasion will positively influence managers’ cognitive involvement in
persuasion communication given both are associated with rational processing. Managers often do not
understand the implications of an IT project (Wilson and Howcroft 2005). Clear arguments outlining
how a new IT project benefits an organization help managers to learn and make inferences about the
importance and relevance of the project. Previous studies have suggested that if ambiguous messages
and evidence are provided, targets who cannot (because of intellectual deficits) or will not (because of
holding different views) reason to an advocated claim will not understand the persuading messages
(O’Keefe 1997). We thus expect:

H3a: Rational persuasion by the project team will be positively related to cognitive involvement of
management.

We also posit that rational persuasion sends affective cues (i.e. message explicitness) to managers and
positively influences managers’ emotional involvement in the persuasion communication. Message
explicitness is widely recognized as a good practice for rational persuasion (O’Keefe 1997). Often,
people are persuaded not as a matter of valid claims and evidence, but as a matter of argumentative
practice that satisfies some procedural standards, such as explicitness or politeness (Feng and Burleson
2008). Rational persuasion tends to make explicit what the project team is thinking and doing to make
the project a success. This encourages managers to consciously or unconsciously favor the project and
the team because the team will be perceived as particularly honest and well informed. Empirical evidence in group communication has supported the effect of explicitness on liking (Cramton 2001; Walther and Bunz 2005). We, therefore expect that:

H3b: Rational persuasion by the project team will be positively related to emotional involvement of management.

2.2 Personal Appeal

Our model proposes that personal appeal negatively influences cognitive involvement by management. When using personal appeal, the project team tends not to offer rational arguments to trigger managers’ thinking and evaluation of the project goal. Instead, personal appeal aims to make managers feel what the team feels and offer a helping hand to the project team, sometimes even at the sacrifice of the manager’s personal resources, such as time and energy. Therefore, managers are more likely to interpret the move as an attempt by the project team to increase the team’s gains rather than to convey value of the project. Although managers may feel closer to the team, they are unlikely to consider the project to be important or relevant to their goals. Therefore, we expect:

H4a: Personal appeal by the project team will be negatively related to cognitive involvement of the management.

We posit that personal appeal is positively related to emotional involvement of management. Personal appeal relies on the salient cue of personal relationship to persuade managers. Although being asked a favor can be a nuisance, managers feel trusted and valued by the team. The perception of being trusted and valued can encourage the incorporation of membership and thereby a sense of unity (Eisenberger et al. 1990). The literature has shown that feeling trusted and valued will induce one’s liking and even attachment to an organization (Eisenberger et al. 1986), friends (Niiya and Harihara 2012) and couples (Burke and Stets 1999). Therefore, we hypothesize:

H4b: Personal appeal by the project team will be positively related to emotional involvement of management.

2.3 Exchange

Our model proposes that exchange is positively related to managers’ cognitive involvement in persuasion communication. Exchange is considered a rational tactic that relies on substantive arguments to persuade (Falbe and Yukl 1992). When using the exchange tactic, the project team explicates what the team can do in exchange for managers’ participation. Success of the exchange tactic hinges on the perceived positive outcomes the project can bring to individual departments. If the team is able to argue that the project brings more benefits to individual departments than obligations owed to the team in a short-term or long-term time frame, managers are more likely to process the message systematically and place high importance to the project. Therefore, we expect that:

H5a: Exchange by the project team will be positively related to cognitive involvement of management.

Finally, we posit that exchange is also likely to be positively related to emotional involvement of management. Throughout an IT project, managers often need technical advice or help from the project team due to their lack of technical expertise. Exchange by the project team thus cues management that the team desires a cooperative relationship that will maximize gain for both parties. This can induce “positive feelings about having accomplished a joint task with another” (Lawler and Yoon 1998: 871). Recent research has identified the positive emotional reaction exchange can evoke (Lawler et al. 2000; Lawler and Yoon 1998; Lovaglia 1997). We therefore hypothesize:

H5b: Exchange by the project team will be positively related to emotional involvement of management.
3 METHODOLOGY

We derived most measures from existing scales and adapted them to suit the context of our study. Measures of the study constructs are discussed below.

**Management participation.** Management participation was measured by 5 items examining the extent that management behaviorally participates in major IS implementation stages (Thong et al. 1996). An example item includes “management attendance at project meetings.” Respondents were asked to indicate on a five-point scale, ranging from “strongly disagree” to “strongly agree.”

**Persuasion behavior.** We used the 4-item measures proposed and validated by Yukl et al. (2008) to measure frequency with which the project team perform the behaviors of rational persuasion, personal appeal and exchange. Example items include “project member uses facts and logic to make a persuasive case for the IS project,” “project member asks for your help as a personal favor,” and “project member offers to do something for you in the future in return for your help now.” Respondents were asked to indicate on a five-point scale ranging from “never” to “very often.”

**Cognitive involvement and emotional involvement.** The instruments for cognitive involvement and emotional involvement were developed for this study. To develop the instruments, we first generated a pool of items from the literature. Then, in-depth interviews with three non-IS managers and two IS managers from two Taiwanese manufacturers were conducted to complete and refine the items. This process resulted in 9 items. Following the method proposed by Moore and Benbasat (1991), a card sorting exercise was conducted by 9 IS experts (four professors and five Ph.D. students) to classify the 21 items into two categories to assess the validity of the two constructs. Items that did not reach the threshold of 80 percent correct placement were dropped. Experts also suggested modifications to some items. A second round of card sorting was conducted with 3 new experts (two professors and one Ph.D. student). The final instrument includes 4 items for cognitive involvement and 5 items for emotional involvement. Example items include “I relate this project to our business to understand its significance” and “I feel strong ties with the project.”

**Control variable.** An IT project brings extra demands to each department which may create job stress (Demerouti et al. 2001; Saks 2006). We adapted Notelaers et al. (2007) measures of job demandingness of IT projects on managers and their departments to rule out alternative explanations to our findings.

The questionnaire was pretested on 11 large IT projects that involved multiple departments or lasted over 6 months. These projects included the project of an advanced shop floor system, product lifecycle management system, computer integrated manufacturing system and others. This allowed us to test defective questions and the overall format of the questionnaire (Shelby et al. 1982). Table 2 presents details of each scale.

<table>
<thead>
<tr>
<th>Scale items</th>
<th>CR</th>
<th>Cronbach α</th>
<th>AVE</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exchange:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX1. Project member offers something you want in return for your help on the project.</td>
<td>0.97</td>
<td>0.96</td>
<td>0.90</td>
<td>0.937</td>
</tr>
<tr>
<td>EX2. Project member offers to do something for you in exchange for carrying out a request.</td>
<td>0.943</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX3. Project member offers to do a specific task or favor for you in return for your help and support.</td>
<td>0.964</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX4. Project member offers to do something for you in the future in return for your help now.</td>
<td>0.939</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Personal appeal:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA1. Project member appeals to your friendship when asking you to do something for the project.</td>
<td>0.90</td>
<td>0.86</td>
<td>0.77</td>
<td>0.881</td>
</tr>
</tbody>
</table>
Survey data was collected by a mail questionnaire sent to MIS managers of the top 1000 manufacturers in Taiwan. We enclosed a letter to explain the research purpose and asked the manager to pass this questionnaire to one non-IS manager whose department underwent a large or cross-function IT project in the past one year. Two weeks later, a reminder was sent.

Two months after the initial mailing, 175 questionnaires were returned. Five respondents reported having no big IT projects, 2 responses were incomplete and 43 responses were filled by MIS managers, leaving 125 usable responses and a valid response rate of 12.5%. To assess non-response bias, t-tests were performed between the initial wave of responses (the first 25% of responses) and the late wave (the last 25%) (Armstrong and Overton 1977). Results indicated no significant difference on variables under study.

Regarding the demographic characteristics of the sample, almost half of respondents worked in the computer and electronic industries (46.4%). A comparison with the population confirmed representativeness of our sample in terms of industrial distribution. Firm size was measured using sales revenue; over half of the firms the respondents worked for had sales revenues less than 70 million USD in 2011. Reported functional affiliation of the respondents was 22.6% with the manufacturing or engineering division, 12.2% with the finance division, 13.9% with the sales/marketing division, 13% with purchasing division, 7.8% with HR division, 5.2% with R&D division and 25.2% with others. The majority of the respondents were male (73.5%), working in the same company for over 10 years (56.9%). Over half of the respondents worked as a departmental manager for over 4 years.
4 ANALYSIS AND RESULTS

We adopt a two-step approach to analyze the data (Anderson and Gerbing 1988). The two-step approach involves testing the reliability and validity of the measures before assessing the structural relationships. Given the focus on prediction and relatively small sample size of this research, SmartPLS 2.0 M3 was used to analyze data (Gefen et al. 2011; Ringle et al. 2012).

4.1 Testing the measurement model

The measurement model was evaluated, testing reliability, and convergent and discriminant validity of focal constructs. We first performed an exploratory factor analysis of all items and then subjected the items to confirmatory factor analysis. Due to low factor loadings, two items were dropped—one from the personal appeal scale and the other from the emotional involvement scale. After dropping these items, we assessed construct reliability using composite reliability values and Cronbach $\alpha$. All values in Table 1 exceed the acceptable level of 0.70.

The convergent validity was assessed using indicator loadings and the average variance extracted (AVE) (Fornell and Larcker 1981). As shown in Table 4, all indicator loadings exceed 0.70. The AVE of each construct also exceeds 0.50, ranging from 0.69 to 0.90. This demonstrates sufficient convergent validity of the scales. Discriminant validity was assessed according to two criteria. First, loading of each indicator on its assigned construct should be greater than its loadings on other constructs (Chin 1998). Second, the square root of the AVE of a construct should exceed the correlations between the construct and other constructs in the model (Fornell and Larcker 1981). As shown in Table 5, both criteria are met, demonstrating discriminant validity of the scales.

<table>
<thead>
<tr>
<th>Rational</th>
<th>Personal</th>
<th>Exchange</th>
<th>Cognitive</th>
<th>Emotional</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>persuasion (RP)</td>
<td>appeal (PA)</td>
<td>(EX)</td>
<td>involvement (CI)</td>
<td>involvement (EI)</td>
<td>participation (MP)</td>
</tr>
<tr>
<td>RP1</td>
<td>0.90</td>
<td>-0.10</td>
<td>0.15</td>
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</tr>
<tr>
<td>RP2</td>
<td>0.84</td>
<td>-0.04</td>
<td>0.09</td>
<td>0.26</td>
<td>0.22</td>
</tr>
<tr>
<td>RP3</td>
<td>0.79</td>
<td>0.05</td>
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</tr>
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<td>RP4</td>
<td>0.79</td>
<td>0.02</td>
<td>0.14</td>
<td>0.06</td>
<td>0.21</td>
</tr>
<tr>
<td>PA1</td>
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<td>0.88</td>
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<td>-0.08</td>
<td>-0.07</td>
</tr>
<tr>
<td>PA2</td>
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<td>0.86</td>
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<td>-0.07</td>
<td>-0.02</td>
</tr>
<tr>
<td>PA4</td>
<td>-0.08</td>
<td>0.90</td>
<td>0.24</td>
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<tr>
<td>EX1</td>
<td>0.18</td>
<td>0.24</td>
<td>0.94</td>
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<tr>
<td>EX2</td>
<td>0.18</td>
<td>0.27</td>
<td>0.94</td>
<td>0.23</td>
<td>0.19</td>
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<tr>
<td>EX3</td>
<td>0.11</td>
<td>0.32</td>
<td>0.96</td>
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<tr>
<td>EX4</td>
<td>0.11</td>
<td>0.30</td>
<td>0.94</td>
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<tr>
<td>CI1</td>
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<td>CI3</td>
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<td>CI4</td>
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<td>0.82</td>
<td>0.62</td>
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<tr>
<td>EI2</td>
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<td>EI3</td>
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<td></td>
<td>EI4</td>
<td>EI5</td>
<td>MP1</td>
<td>MP2</td>
<td>MP3</td>
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<tr>
<td>Mean</td>
<td>0.32</td>
<td>0.36</td>
<td>0.34</td>
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<td>S.D.</td>
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<td>0.02</td>
<td>0.02</td>
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<td>Rational persuation</td>
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<td>0.15</td>
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<td>Personal appeal</td>
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<td>Exchange</td>
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</tr>
<tr>
<td>Cognitive involvement</td>
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<td>0.91</td>
<td>0.49</td>
<td>0.43</td>
<td>0.47</td>
</tr>
<tr>
<td>Emotional involvement</td>
<td>0.53</td>
<td>0.51</td>
<td>0.87</td>
<td>0.87</td>
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</tr>
</tbody>
</table>

Table 3. PLS confirmatory factor analysis and cross-loadings

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>Rational persuasion</th>
<th>Personal appeal</th>
<th>Exchange</th>
<th>Cognitive involvement</th>
<th>Emotional involvement</th>
<th>Management participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP</td>
<td>3.72</td>
<td>0.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td>2.28</td>
<td>0.88</td>
<td>-0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EX</td>
<td>2.13</td>
<td>0.98</td>
<td>0.15</td>
<td>0.30</td>
<td></td>
<td>0.30</td>
<td>0.24</td>
<td>(0.85)</td>
</tr>
<tr>
<td>CI</td>
<td>4.00</td>
<td>0.63</td>
<td>0.35</td>
<td>-0.09</td>
<td>0.24</td>
<td>0.51</td>
<td>0.66</td>
<td>(0.90)</td>
</tr>
<tr>
<td>EI</td>
<td>3.71</td>
<td>0.79</td>
<td>0.33</td>
<td>-0.05</td>
<td>0.21</td>
<td>0.51</td>
<td>0.56</td>
<td>(0.86)</td>
</tr>
<tr>
<td>MP</td>
<td>4.09</td>
<td>0.73</td>
<td>0.38</td>
<td>-0.02</td>
<td>0.17</td>
<td>0.51</td>
<td>0.56</td>
<td>(0.86)</td>
</tr>
</tbody>
</table>

Table 4. Means, standard deviations, correlations

N = 125. Numbers in parentheses on the diagonal represent the square root of the AVE.

We tested multicollinearity by modeling Management Participation as the dependent variable and other variables as the independent variables. The variance inflation factors (VIF), ranging from 1.08 to 1.68, are well below the suggested cutoff value of 3.3, suggestive of no significant problem of multicollinearity (Diamantopoulos and Siguaw 2006).

Common method bias was also assessed and controlled by using the marker variable method (Rönkkö and Ylitalo 2011). We first checked that a priori included marker variable (6 indicators for Employee Wellbeing) (Warr 1990) was appropriate based on the correlation matrix of the study variables and the marker variable. Three indicators turned out to be relatively ideal, minimally correlated with indicators of the study variables. Mean correlation between the marker and study variables is 0.02, lower than recommended value of 0.05, and suggests that method variance is not an issue. After the initial diagnostics, we compared path coefficients of the research model and those of the model with the marker variable assigned as a predictor for all endogenous constructs. There was no change to the sign and significance of the path coefficients. On the basis of the comparison and the initial diagnostics, no evidence indicates common method bias as a serious problem.

4.2 Testing the structural model

Figure 6 shows the results of structural path analysis. We assessed the significance of paths using the bootstrap method. For a satisfactory substantive model, variance explained should exceed 10% (Falk and Miller 1992). All $R^2$ values of endogenous constructs are greater than 10%. The analysis provides reasonable support for most hypotheses (H1, H2, H3a, H3b, H4a, H5a and H5b), except for H4b in which Personal Appeal is expected to be positively related to managers’ Emotional Involvement. Our findings generally suggest that rational persuasion and exchange by the project team can induce cognitive and emotional involvement of management; increased managers’ involvement will produce positive outcome of management participation. For the complete model, a
global fit measure, the Goodness-of-Fit (GoF) index, has been suggested (Tenenhaus et al. 2005). We obtained a GoF index of 0.44, greater than the threshold value of 0.36 for large effect size of R², suggestive of acceptable prediction performance of the model (Wetzels et al. 2009).

We found support for the mediation effect of managers’ psychological involvement, except for the path from Personal Appeal to Management Participation via Emotional Involvement. We employed a 3-step approach to test the mediation effect of Cognitive Involvement and Emotional Involvement (Baron and Kenny 1986; Thatcher and Perrewe 2002). First, we separately tested the direct effects of Cognitive Involvement, Emotional Involvement, Rational Persuasion, Personal Appeal and Exchange on Management Participation. All were significant correlates of Management Participation (Cognitive Involvement, Emotional Involvement, Rational Persuasion and Exchange with p < .01 and Personal Appeal with p < .05). Then, we simultaneously tested paths from Cognitive Involvement, Emotional Involvement, Rational Persuasion, Personal Appeal and Exchange to Management Participation. Cognitive Involvement (p < .05), Emotional Involvement (p<.01) and Rational Persuasion (p < .05) remained significantly correlated with Management Participation. Finally, we added paths from Rational Persuasion, Personal Appeal and Exchange to Cognitive Involvement and Emotional Involvement. Rational Persuasion, Personal Appeal and Exchange showed a significant relationship to Cognitive Involvement (p < .01; p < .05; p < .01), and Rational Persuasion and Exchange showed a significant relationship to Emotional Involvement (p < .01). Of the three exogenous variables, only Rational Persuasion demonstrated a significant relationship to Management Participation (p<.05), suggesting there was a direct relationship between Rational Persuasion and Management Participation. No direct effect was found for Personal Appeal and Exchange on Management Participation, indicating they were fully mediated by Cognitive Involvement and Emotional Involvement. To quantify the mediated relationships, we used the Sobel test to assess significance of all mediation effects (Hayes 2009; Sobel 1982). We found that Exchange and Rational Persuasion had significant indirect effects on Management Participation via Emotional Involvement. However, the indirect effects were small, ranging from 0.09 to 0.13 (see Table 5). None of the paths via Cognitive Involvement was found to be significant.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Path coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Direct</td>
</tr>
<tr>
<td>Management</td>
<td>Cognitive Involvement</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>Emotional Involvement</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>Rational Persuasion</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Personal Appeal</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Exchange</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Involvement (CI)</td>
<td>Rational Personal</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td>Personal Appeal</td>
<td>-0.14</td>
</tr>
<tr>
<td></td>
<td>Exchange</td>
<td>0.24</td>
</tr>
</tbody>
</table>
DISCUSSION AND IMPLICATIONS

Overall, our findings provide insight into the nomological net among project team’s persuasion behaviors, managers’ psychological involvement, and managers’ behavioral participation that relates to IT project success. With the exception of H4b in which personal appeal is expected to be positively associated with managers’ emotional involvement, most of the hypotheses are supported and complement prior studies on obtaining management participation in IT projects (Elbanna 2012; Liu et al. 2010). Where prior studies focus on cognitive arguments and rational reactions, this study extends prior literature by demonstrating how persuasion communications may lead to management participation through cognitive and emotional involvement.

Not surprisingly, our findings suggest that rational tactics (i.e. rational persuasion and exchange) induce managers’ cognitive involvement in persuasion communications. Concurrent with Elbanna (2012), this study found rational tactics to be positive correlates of cognitive involvement. However, this study also demonstrates the importance of emotional persuasion. Further research is needed to study whether cognitive involvement is a necessary condition for persuasion or a sufficient one that can be complemented by emotional involvement.

More importantly, our research illustrates how persuasion behaviors by project teams relate to managerial participation in an IT project. In five of the six mediated relationships, the impact of persuasion behaviors on management participation was at least partially mediated by cognitive or emotional involvement: both cognitive and emotional involvement partially mediated the relationship between rational persuasion and management participation, and fully mediated the relationship between exchange and management participation; cognitive involvement fully mediated the relationship between personal appeal and management participation, albeit the relationship is negative.

Table 5. Direct, indirect and total effects (*p<0.1; *p < 0.05; **p < 0.01)

<table>
<thead>
<tr>
<th>Emotional Involvement (EI)</th>
<th>Rational Persuasion</th>
<th>Personal Appeal</th>
<th>Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Involvement</td>
<td>0.29** t= 4.12</td>
<td>-0.08 t= 1.21</td>
<td>0.20** t= 2.93</td>
</tr>
<tr>
<td>Emotional Involvement</td>
<td>0.32** t= 3.59</td>
<td>-0.08* t= 2.11</td>
<td>0.20** t= 2.93</td>
</tr>
<tr>
<td>Management Participation</td>
<td>0.29** t= 4.12</td>
<td>-0.14* t= 2.11</td>
<td>0.43** t= 4.96</td>
</tr>
</tbody>
</table>

Model fit indices:
- Average communality= 0.77 (>0.50)
- GoF=0.44 (>0.36)

Figure 6. Structural model with path coefficients (*p<0.1; *p < 0.05; **p < 0.01)
Contrary to our expectations, personal appeal did not significantly correlate with emotional involvement and even in the opposite direction. One explanation for this finding is that personal appeal, as a unilateral exchange, may be perceived as manipulative and exploitative by the manager, rather than as a way to seek affection or to confirm a close interpersonal connection. However, this finding does not suggest personal appeal is irrelevant to our understanding about persuasion. Rather, given support provided by prior studies (Enns et al. 2003; Falbe and Yukl 1992; Yukl and Tracey 1992), it suggests that the mediated relationship between personal appeal and management participation perhaps is moderated by some other factors, such as perceived relational closeness (Niiya and Harihara 2012), or likeability of the agent. This finding warrants further research. Moreover, while rational persuasion is likely to lead to cognitive and emotional involvement, direct effect of rational persuasion on management participation was not completely eliminated by including cognitive and emotional involvement. That is, rational persuasion generally had a significant effect on management participation beyond that can be explained by cognitive and emotional involvement.

These findings also suggest that it is important to distinguish between types of managers’ psychological involvement. Although cognitive involvement and emotional involvement are both considered psychological reactions to persuasion communications, emotional involvement (0.43) had more predictive validity on management participation than cognitive involvement (0.16) did. One possible explanation is that specialized IT knowledge may be incomprehensible for non-IS managers, which makes cognitive processing sometimes unstable and less consequential. Our findings suggest that emotional involvement provides stronger motivation for management participation, whereas much analysis may make the manager relatively prudent in taking action. Given these differences, perhaps focusing on managers’ emotional reactions will demonstrate more predictive validity than persuasion communications that solely aim to stimulate managers’ cognitive responses.

5.1 Practical implications

This research has implications for inducing managerial participation in an IT project. Understanding managers’ psychological reactions to persuasion communications may help project teams better influence managers. We have identified two persuasion behaviors (i.e. rational persuasion and exchange) that are positively associated with cognitive involvement, emotional involvement, and management participation, and one persuasion behavior (i.e. personal appeal) that is negatively associated. Because each persuasion behavior has its distinct rational and emotional elements that may induce managers’ psychological reactions, it may be possible to make use of these elements to influence managers’ attitudes and behaviors. For example, when using the rational persuasion tactic, the project team may design their arguments to increase explicitness by, for example, providing explicit feedback about suggestions or proposals. When using the exchange tactic, apart from arguing for relative gains for the department, the project team may make use of the cue of a cooperative and reciprocal relationship to induce managers’ involuntary liking for the project. Therefore, if project teams also address managers’ reactions to affective cues, persuasion attempts will be more likely to lead to managerial participation.

Overall, our findings indicate the importance of both rational arguments as well as affective cues the project team delivers to stimulate managers’ psychological reactions. Too often, persuading messages are expressed without being heard because of the cues. The project team may need to carefully devise their arguments and affective cues to influence the way managers react to what is said and what is unsaid.

6 CONCLUSION AND LIMITATIONS

This paper has demonstrated that the project team has opportunities to influence the thinking, feeling and behavior of managers. This study articulated and tested a conceptual model that posits three persuasion behaviors by the project team would influence management support. Although we discovered no relationship between personal appeal and emotional involvement, relationships between
rational persuasion and exchange with emotional involvement and between rational persuasion, personal appeal and exchange with cognitive involvement were supported. Given the influence of managers’ attitude and participation on project success (Dong et al. 2009; Sharma and Yetton 2003; Thong et al. 1996), our findings underscore the importance of extending the nomological net surrounding the project team’s persuasion behaviors in an IT project. By identifying how persuasion behaviors influence managers’ processing of and reaction to persuasion communications, we may develop a more comprehensive model of how the project team obtains management support. Moreover, our model attributes agency to both the project team and managers that describes how they interact to result in persuasion of the managers.

However, this paper suffers from several limitations. First, our data was collected retrospectively. By the time we collected the data, most of the projects had completed. This limitation was partly offset by asking the manager to recall a recent IT project taking place in the previous year. Also, we only collected data about big or cross-functional projects. For these projects, management’s recollection should be more vivid. Second, our findings arise from big IT projects in manufacturers and may not be generalized to small- or median-sized projects or other distinct industries. Further research is required to see if our findings are generalizable to other contexts. Another limitation concerns internal validity. This study relies on self-reports as the single data source, which may suffer from common method bias. Examination of Table 4 shows that correlations of constructs only co-vary at relatively low extent. Although cognitive involvement and emotional involvement correlate at .66, formal tests demonstrate that collinearity does not cause serious common method bias. Finally, given the cross-sectional data, all the statistical relationships are only tentatively concluded.

References


Park, C. W. and Young, S. M. (1983). Types and levels of involvement and brand attitude formation. Advances in Consumer Research, 10 (1), 320-324.


