IT Project Manager Decision-Making Authority: An Empirical Examination of Antecedents and Consequences

Introduction

Over the past several decades, information technology (IT) has become one of the most important factors for contemporary businesses in facilitating improved organizational processes (Davenport 2013) and implementing business-level strategies (Drnevich and Croson 2013). Given the potential business value organizations receive from IT, it is not surprising that in 2013 alone U.S. businesses spent $330.9 billion on IT investments, including software (United States Census Bureau 2015).

The process of implementing IT into an organization can be considered a business project. A business project is a temporary and unique endeavor undertaken by an organization for the purpose of accomplishing a specific business objective. IT project management is defined as the planning, monitoring, and controlling of an IT-related project to achieve project objectives related to schedule, cost, system functionality, and overall IT solution performance. One of the key figures responsible for managing IT projects, and the focus of this research, is the IT project manager. An IT project manager is the individual charged with the overall responsibility for successful initiation, planning, and execution of an IT initiative.

To achieve the desired strategic and operational goals for an organizational IT initiative, successful management of the project is critical. Yet, despite the considerable impact IT projects have on the competitiveness of businesses, research suggests success rates for IT projects have remained challenged. 43% of IT projects fail to meet project goals relating to budget, schedule, or delivery of targeted system functionality (Standish Group 2013). Moreover, the outcome for 17% of large IT projects is so poor that the viability of the implementing firm is jeopardized (Bloch et al. 2012). In the same vein, the business value derived from many IT projects is often uncertain; 41% of firms report mixed results with respect to the value delivered by completed IT initiatives (Feldman 2014).

Managing IT projects is unquestionable a challenging and complex undertaking. While many factors contribute to the difficulties faced by project managers, a central issue in managing IT projects is coordinating the activities for a diverse group of stakeholders, often including representatives from business units outside of the IT department, to achieve the common goal of delivering the project. The ability of IT project managers to lead their project teams and resolve conflict is therefore critical to the success of IT project initiatives. Given the cross-functional nature of IT projects, this paper asserts that project managers must possess some degree of power and influence over project team members and stakeholders if they are to successfully manage their projects.

In this research, power is conceptualized as IT project manager decision-making authority. IT project manager decision-making authority is defined as the autonomy IT project managers possess with regard to controlling the process of implementing information systems into an organization. Thus, a project manager with a high degree of decision-making authority has the freedom to set and ability to enforce the rules, policies, and procedures for the projects he or she manages. In turn, these policies and procedures dictate the behavior of others participating in the project. The aim of this research is to develop and test a parsimonious model explaining the sources of power for IT project managers and demonstrate how the possession of power affects IT project outcomes. This represents an essential extension to the current body of knowledge related to IT project success, as this aspect of IT project management has received little attention in the information systems (IS) literature. This study's results are particularly relevant to practitioners, because without an adequate understanding of organizational power and how it can be leveraged by IT project managers to more effectively to manage projects, many otherwise viable IT initiatives might fail.

The remainder of this study is organized as follows: The next section provides a brief review of the literature on organization power, conflict, and IT project control. This is followed by the development of

hypotheses to be tested in this study. A description of the study's research methodology is then presented, followed by a summarization of the study's results, including a summary of respondent characteristics. The last section provides a discussion of the results, along with the study's limitations, suggestions for future research, and a brief conclusion.

Literature Review

Organizational Power and the Pluralist Perspective

The study of power and its role in intra-organizational situations has long been an important pursuit for scholars (e.g., Emerson 1962; Pettigrew 1972; Pfeffer 1981). Power can be defined as the ability of one actor to influence the actions of another actor (Emerson 1962). Given its pervasive nature in organizations, the notion of intra-organizational power has received a considerable amount of interest in the mainstream IS literature (see Jasperson et al. 2002). Studies have examined a wide variety of topics relating to power, ranging from attempts to gauge the perceived power of an organization's IT department relative to other departments in an organization (e.g., Lucas 1984; Setterstrom and Pearson 2009), to the examination of the role power plays in the ability of IT departments to execute day to day business activities (e.g., Preston et al. 2008; Xue et al. 2008).

In particular, this research adopts a pluralist perspective of power (Bradshaw-Camball and Murray 1991; Jasperson et al. 2002). The pluralist perspective conceptualizes power as an objective reality that occurs within an organization. Individuals or groups within an organization gain power through the possession of resources, such as financial resources, knowledge, or expertise, upon which others in the organization are dependent. Importantly, the pluralist perspective adopts the view that organizational members often possess conflicting goals resulting from their differing backgrounds and experiences, the limited availability of organizational resources, and general differences in perspective. When faced with conflicting preferences, people commonly engage in political activities as they attempt to reconcile their personal interests within the organization (Pfeffer 1981).

As it relates to IT, the implementation of a new information system into an organization can cause considerable changes to occur to business processes and individual job duties, as well as cause shifts in the distribution of important resources throughout the organization. Given that these organizational changes will not align will the personal interests for all organizational members, conflict among stakeholders affected by the IT project can be expected (Sarker et al. 2008). Conditions such as active resistance in carrying out requests and contention over system implementation methods are commonly observed among project team members of IT initiatives (Jiang et al. 2014). One example of this phenomenon is provided by a longitudinal case study examining the implementation of an enterprise-wide system into a university. This study found the ability of many employees to make discretionary decisions was diminished as result of the system's implementation and that some end-users were resisting the new system as threats to individual decision-making autonomy became apparent (Alvarez 2008). Ultimately, conflict resulting from an IT project negatively affects trust, can lead to additional conflict, and negatively affects the development process for the IT initiative (Gill and Butler 2003).

IT Project Management and Managing Conflict

One area of research from the IT project management literature that has received considerable attention has focused on systems development control to manage conflict among project team members and promote a shared understanding of project goals. Control from this stream of literature refers to the process of directing project team members to achieve project goals through the utilization of control mechanisms (Choudhury and Sabherwal 2003). Control mechanisms can be formal, such as the use of standards or choice of a particular systems development methodology, or informal, such as the leveraging of social norms. Accumulating evidence suggests that the use of control mechanisms by IT project managers enhances outcomes for IT projects (Chua et al. 2012; Klein et al. 2006; Tiwana and Keil 2010). Given the apparent importance of formal and informal control mechanisms for managing IT projects, researchers have begun to examine a wide variety of topics relating to project control. Some recent academic inquiries include the examination of factors that drive the choice of control mechanisms (Choudhury and Sabherwal 2003), the effectiveness of clan (informal) controls on project outcomes

(Chua et al. 2012), the effectiveness of control mechanisms on projects being carried out within an organization as compared to projects that have been outsourced (Tiwana and Keil 2010), the effectiveness of control mechanisms in the presence of particular risks (Keil et al. 2013), and the use of control mechanisms for offshored projects (Gregory et al 2013).

Importantly, a distinction can be drawn between attempted control and realized control (Tiwana and Keil 2010). In the context of this research, attempted control refers to the extent to which an IT project manager attempts to leverage control mechanisms to influence the behavior of project stakeholders, particularly those on the project team. Realized control refers to the degree to which the IT project manager has effectively influenced stakeholder behavior. This distinction is important, as simply specifying a control mechanism does not result in improved systems development performance. Rather, control mechanisms must be enforced if they are to be beneficial to project outcomes (Jensen and Meckling 1992). As the pluralist perspective of power would suggest, it can be expected that some project stakeholders will not adhere to the project rules, standards, and methodologies as defined by the project manager. Within the project management literature, numerous methods for influencing the behavior of project team members have been examined, such as communication (Mastrogiacomo et al. 2014) and leadership skills (Nixon et al. 2012). While these aspects of project coordination are undoubtedly important to achieving IT project success, it is this paper's assertion that some organizational members associated with the project will be unwilling to adhere to project control mechanisms, because the related IT initiative is perceived as a threat to their personal interests within the organization. Therefore, an IT project manager must possess some degree of authority to implement project control mechanisms and enforce adherence to them if the project is to be effectively managed. Given the critical importance of managing conflict among stakeholders and implementing controls in IT projects, it's not surprising that IT project managers spend a considerable amount of time managing political relationships and attempting garner power so that they can influence others within the organization (e.g., Lind and Culler 2011; Montequínet al. 2016). Yet, despite the apparent importance of possessing power for controlling projects and mitigating conflict, IT project managers' decision-making authority has not been examined in the IS literature.

Hypotheses Development

One important source of decision-making authority for IT project managers is derived from what Weber (1947) refers to as formal authority. A firm's organizational structure defines the hierarchical arrangement of human resources within the organization. Specifically, it describes the roles, responsibilities, and lines of communication within the organization, as well as assigning power to specific positions so that activities can be controlled and coordinated in the pursuit of organizational goals. Hence, formal authority is conferred to an individual based upon the position within the bureaucracy of an organization that the individual occupies. In this way, formal authority for an IT project manager can be conceived as the legitimate right to make decisions relating to IT projects to which he or she is assigned based upon formal position within the organizational structure.

The most commonly examined dimension of formal authority from the business literature is concerned with an individual's vertical position within a firm's organizational structure. In the context of an IT project manager, vertical position refers to the project manager's formal position within the organizational structure of the IT department. For the purposes of this study hierarchical level of the IT project manager is defined as the number of reporting levels between the IT project manager and the CEO. As a project manager's vertical position within the organization's hierarchy increases, that is, as the number of reporting layers between the project manager and the CEO decreases, the project manager's formal authority over others within the IT department increases as a result of his formal position. This consequently results in greater decision-making authority on IT projects, particularly over project team members that are also members of the IT department. While this hypothesis has not previously received attention in project manager literature, previous research has suggested similar relationships to exist between CIO decision-making authority and hierarchical position (Preston et. al 2008).

H1a: Hierarchical level of the IT project manager will have a significant positive relationship with an IT project manager's decision-making authority.

A second dimension of formal authority from the IT project manager literature is concerned with the project organizational structure adopted in the development of new information systems. Project

organizational structure defines how human resources assigned to a project are organized. Specifically, it describes reporting relationships, lines of authority, roles, and responsibilities for groups and individual assigned to a project. As previously mentioned, IT projects are often cross-functional in nature and as a consequence some IT project team members will belong to business units outside of the IT department. In a traditional organizational structure the IT project manager would have no formal authority over individuals outside of the formal hierarchy of the IT department. However, an organization can implement a project organizational structure designed to confer formal authority to the IT project manager over non-IT personnel involved in the project (Marchewka 2012). According to the project manager literature, a project's organization structure will exist on a continuum. On one end of the continuum is a functional organizational structure, where individuals that share similar areas of expertise are grouped into subunits, and IT projects are correspondingly managed within the existing functional hierarchy of the organization in which the project is occurring. A functional project structure does not provide an IT project manager formal authority over project team members belonging to departments outside of the IT function. At the other end of the spectrum are projects that adopt a projectized organizational structure, where the project manager has sole authority and formal control over the project team members, regardless of the functional areas that the team members typically work. A matrix organizational structure represents a hybrid approach to managing project team members and falls somewhere in the middle of the continuum between the functional and projectized organizational structures. The power that results from the adoption of matrix and projectized organization structures can be thought of as formal horizontal authority conferred to the IT project manager over project team members, particularly individuals from outside the IT department. Therefore, this paper argues that the greater the degree of formal authority granted to an IT project manager over individuals involved in an IT project that are not members of the IT department, the greater the decision-making authority conferred on the IT project manager as it relates to the IT project.

H1b: Project organizational structure will have a significant positive relationship with an IT project manager's decision-making authority.

Thus far, the hypotheses developed in this study examine formal sources of organizational power. However, organizational power is often acquired through political and informal means (Mintzberg 1983). To explain how an IT project manager can gain organization power through social sources, the theory of resource dependence is adopted in this study. Congruent with the pluralist perspective of power, the theory of resource dependence posits that individuals or subunits (departments) within an organization gain power through their ability to provide resources considered crucial to the organization and challenging to obtain (Pfeffer 1981; Pfeffer and Salancik 1978). IT has been argued to have the potential to facilitate competitive advantage (Piccoli and Ives 2005). This premise is based on the notion that IT, in and of itself, is not a source of competitive advantage; rather, it must be deployed in ways that compliment an organization's overall strategy for competitive advantage to be achieved (Beard & Sumner, 2004; Bharadwaj et al., 2007). Using the resource-based view of a firm as a theoretical framework, IT researchers have further argued that gains established through strategic IT alignment are difficult to imitate and consequently are sustainable (Tallon 2007). Therefore, this paper argues that in the case where IT is used strategically by an organization to gain a competitive advantage, the IT department is providing valuable resources that are difficult to obtain. Based upon the theory of resource dependence, as the degree to which an organization depends on IT to create a competitive advantage, the greater the organizational power that will be possessed by the IT department. As a member of the IT department and one of the key facilitators for the implementation of information systems into the organization, this paper argues that the power possessed by IT project managers will be related to the overall power possessed by the IT department. Thus, as the degree to which the IT department is relied on to help an organization execute its strategies increases, so will the decision-making authority of the IT project manager.

H2 Strategic impact of IT will have a significant positive relationship with an IT project manager decision-making authority

For the purposes of this research, this paper argues that two broad categories of IT project outcomes are affected by the decision-making authority of the IT project manager: IT project performance and IT product performance. IT project performance refers to measures of success or failure in the execution of the project itself. Thus, the degree to which the final product resulting from an IT project meets the needs of the organization is not taken into consideration. In this research, three dimensions of project

performance are assessed: budget, schedule, and functionality. Referred to as the triple constraint (Marchewka 2012), meeting budget, schedule, and functionality goals have historically be argued to be the main measures of project management performance (e.g. McFarlan 1981; Xia and Lee 2004). The role of a project manager is "the project team leader and is responsible for ensuring that all of the project management and technical development processes are in place and are being carried out within a set of specific requirements, defined processes, and quality standards" (Marchewka 2012: p. 11). Therefore, the IT project manager is the primary agent responsible for ensuring that a given IT project is completed on time, under budget, and with the specified functionality intact with the delivered system. Given that the IT project manager is accountable for project performance, he will be motivated to carry out decisions designed to improve the execution of the project. A project manager with a high degree of decision-making authority will have the freedom to implement project' rules, policies, and procedures the he believes will be most effective in realizing control of the project. Furthermore, a high degree of decision-making authority provides the ability to quickly implement actions to address emerging problems and changes in dynamic project environments. As such, this paper argues that as the power to make and execute decisions affecting project outcomes increase, the ability of project manager to meet project performance goals will also increase.

H3a: An IT project manager's decision-making authority will have a significant positive relationship with the degree to which IT projects meet budget goals.

H3b: An IT project manager's decision-making authority will have a significant positive relationship with the degree to which IT projects meet schedule goals.

H3c: An IT project manager's decision-making authority will have a significant positive relationship with the degree to which IT projects deliver systems with the targeted functionality.

IT product performance can be defined as the degree to which an IT solution resulting from the completion of an IT project meets or exceeds the expectation or needs of project stakeholders (Baccarini 1999); as such, it broadly refers to the quality of the delivered system. For the purposes of this research, IT product performance is conceptualized as organizational IT satisfaction. Organizational IT satisfaction refers to perceived quality and realized benefits from information solutions provided by an organization's IT department. IT project managers are charged with providing quality information systems that provide the anticipated business value to the organization. However, the practice of IT project management has been described as the art of managing tradeoffs between IT project outcomes (Marchewka 2012). For example, a project manager may need to make compromises between the delivered IT product's performance and aspects of IT project performance (e.g. reducing the amount of allotted testing in an effort to avoid cost or schedule overruns). As previously discussed, power is posited to affect the ability of the IT project manager to control the development of IT projects. This paper argues that when an IT project manager is granted sufficient decision-making authority over project stakeholders, he is better able to manage all aspects of the project. Because there are lessened threats to project performance, such as cost or schedule over runs, the number of necessary trade-offs between project outcomes will be reduced. As a result, a project manager will be better able to provide an information system that meets or exceeds the expectations of stakeholders. Alternatively, without possessing a certain degree of power, an IT project manager will be unable to develop a system that is cost effect, efficient, and can be adequately maintained by the IT function of the organization.

H4: An IT project manager's decision-making authority will have a positive relationship with organizational IT satisfaction.

To rule out the possibility that some third variable is responsible for the relationships examined in this study, control variables were included in the statistical analysis. Specifically, the project manager's age, gender, education, years of work experience, and years in current position were included as control variables for this study's decision-making authority construct. Figure 1. presents this study's research model.

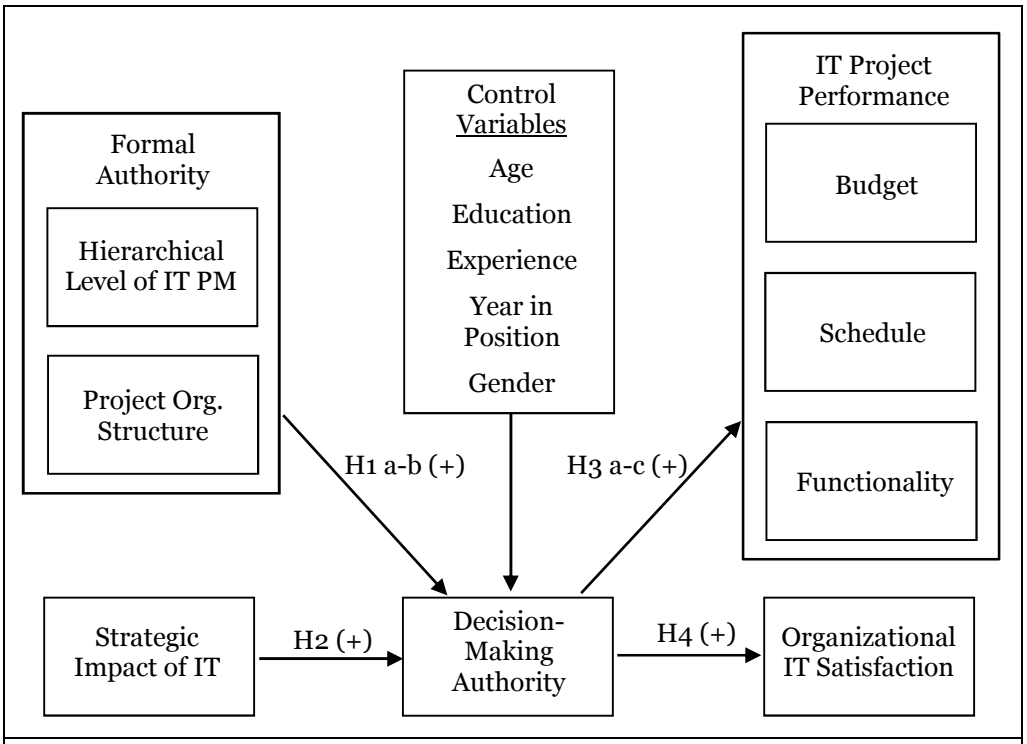

Figure 1. Research Model

Methodology

To test the research hypotheses, a survey methodology was used. For each firm solicited to participate, two key respondents were targeted to complete questionnaires: the primary IT project manager and the CEO. This approach to gathering data was used for several reasons. First, respondents were targeted based upon being the most knowledgeable and therefore most appropriate individuals within the surveyed organizations to answer questions about the study's constructs of interest. Specifically, the primary IT project manager was used as the key respondent for answering questions related to his hierarchal level in the organization, project organizational structure, IT project manager decision-making authority, and IT project performance outcomes (budget, schedule, and functionality) constructs. The CEO was used as the key respondent for answering questions related to the strategic impact of IT and organizational IT satisfaction constructs. Second, by gathering data from multiple respondents within each organization, issues relating to common-method bias were reduced.

To gather data, organizations were contacted directly via telephone and asked to participate in the study. If they agreed, a package was mailed to the contact individual containing multiple surveys in pre-addressed stamped envelopes, so that those surveys can be mailed back to the researcher. Each survey had a code printed on it, so responses from the same firm could be matched. Two weeks after the research packet was mailed follow up calls were made to firms that had not send back both surveys to the researcher.

To develop the survey instrument, an extensive literature review was conducted to identify previously validated measurements for the constructs of interest. Items were identified and adapted to the context of this research. See the Appendix for the survey instrument.

Data Analysis

For this research a two-stage analytical procedure was adopted, where a confirmatory measurement model was first used to determine convergent and discriminant validity, followed by a confirmatory structure model to test the research hypotheses. Utilizing data gathered for hypothesis testing, both instrument validation and hypothesis testing was accomplished using Partial Least Squares (PLS) path

modeling via SmartPLS (Ringle et al., 2005). PLS is preferable to statistical techniques such as regression, because PLS does not assume that measurement is without error and allows for the testing of multiple independent and dependent constructs at the same time, thus allowing for the testing of more complex models. PLS is more appropriate than covariance-based SEM for testing theoretical frameworks that have been crystallized through replication research.

Results

Data Collection and Screening

A total of 601 organizations agreed to participate in this study. At the end of the collection period, 133 firms mailed at least one of the surveys back to the researcher. Of the firms that responded, 107 returned both surveys, providing an effective response rate of 17.8%. To assess non-response bias, the total annual sales of the 107 fully responding organizations were compared to those of all non-responding organizations that agreed to participate in the study. The ANOVA analysis indicated that average annual sales revenue for responding organizations, which was $35.15 million, was not significantly different than non-responding organizations ($F = .944$, $p = .332$). Using the Mahalanobis distance measure, two cases were identified as outliers and removed from the sample. After screening the data a total sample 105 cases were retained for hypotheses testing. Table 1. provides a summary of characteristics for project managers whose responses were retained for hypotheses testing.

Table 1. IT Project Manager Characteristics

Gender		**Education Completed**	
Male	94	Some high school	0
Female	11	High School Degree	4
Age		Some college	16
Less than 20	0	2 year college degree	16
20-29	11	4 year college degree	56
30-39	22	Master's/prof degree	14
40-49	24	Doctoral degree	1
50-59	31	**Years of Work Experience**	
Over 60	17	Less than 2	1
Years in Current Position		2 to 5	5
Less than 1 year	5	6 to 10	15
2 to 3	19	11 to 15	18
4 to 6	15	16 to 20	7
7 to 10	17	More than 20 years	59
More than 10 years	49		

Instrument Validation

For the next step in the analysis the measurement model was validated using PLS path modelling (Gefen and Straub, 2005). Convergent validity was assessed by calculating t-values for indicator loadings. Initial results indicated that all indicators loaded significantly on their respective constructs. However, two items from the IT project manager decision-making authority construct loaded below the suggested .50 level (Hair et al., 2006) and were subsequently dropped from the study. Discriminant item level validity was assessed by examining correlations between item scores and latent variable scores. All items loaded highly on their respective constructs, while no substantial cross-loadings existed. The average variance extracted (AVE) statistics for all latent variables were greater than the recommended minimum of .50, while at the same time being greater than the squared correlations between latent variables (Fornell and Larcker,

1981). The composite reliability for all latent variables exceeded the recommended minimum of .70, suggesting that the study's instrument demonstrated acceptable reliability. To assess the severity of common-method bias in the study, Harmon's Single Factor Test through CFA was conducted on the study's constructs of interest. The $\chi 2$ statistic from the CFA analysis of a single factor was significant ($\chi 2$ = 1142.054, df = 230, p < .001), while CFI = .300, RMSEA = .195, and GFI = .458, suggesting common-method bias is not a serious issue. Table 1. provides a summary of statics for the latent variables examined in this study.

Table 2. Latent Variable Statistics

	CR	AVE	1	2	3	4	5	6	7	8
1. Hierarchal Level of PM	1.0	1.0	1.00							
2. Project Org. Structure	1.0	1.0	-.001	1.00						
3. Strategic Impact of IT	.847	.652	-.099	-.096	1.00					
4. Decision-Making Auth.	.912	.721	.304**	.296**	.222*	1.00				
5. Budget	.781	.644	-.063	.010	.191	.239*	1.00			
6. Schedule	.769	.631	-.049	-.023	.194*	.356**	.590**	1.00		
7. Functionality	.734	.583	-.065	.098	.198*	.454**	.593**	.664**	1.00	
8. Org. IT Satisfaction	.917	.691	-.069	-.145	.429**	.253**	-.019	.162	.195*	1.00

P < .05*
P < .01**

Hypotheses Testing

First, a control variable model was specified where individual characteristics for the IT project manager were related to IT project manager decision-making authority. T-values and standardized paths were calculated for the specified relationships to determine the significance and direction of relationships. The results indicated that years of experience (β = .318, p = .042) and gender (β = -.339, p = .013) had significant relationships, while years in position, education, and age were not significantly related to decision-making authority.

The R^2 for the control model was .165 (F = 3.913, p = .002). The f^2 effect size statistic (Cohen, 1988) was calculated to be .198. This suggests that this study's control variables had a medium effect size on IT project manager decision-making authority.

Next, the constructs of theoretical interest were added to the model. An examination of the t-statistics for the control variables revealed no change in statistical significance or direction. With respect to this study's hypotheses, the relationship between hierarchal level of IT project manager and decision-making authority was significant (β = .297, p < .001), supporting hypothesis 1a. The relationship between project organizational structure and decision-making authority was significant (β = .330, p < .001), supporting hypothesis 1b. The relationship between strategic impact of IT and decision-making authority was significant (β = .255, p = .038), supporting hypothesis 2. The relationship between decision-making authority and budget was significant (β = .239, p = .011), supporting hypothesis 3a. The relationship between decision-making authority and schedule was significant (β = .356, p < .001), supporting hypothesis 3b. The relationship between decision-making authority and functionality was significant (β = .454, p < .001), supporting hypothesis 3c. Lastly, the relationship between decision-making authority and organizational IT satisfaction was significant (β = .253, p = .026), supporting hypothesis 4. Results from hypotheses testing are presented in Figure 2.

The R^2 for IT project manager decision-making authority was .367 (F = 6.957, p < .001). The f^2 effect size statistic was calculated to be .580, which is a large effect size. Large effects are "characterized by the study of potent variables or the presence of good experimental control or both" (Cohen, 1988: p. 13). The change in R^2 over the control variable model was .202 (F = 3.630, p < .001). The f^2 effect size statistic was calculated to be .319, which is a medium effect size. With respect to the IT project performance variables, the R^2 for budget was .057 (F = 6.226, p = .014). The f^2 effect size statistic was calculated to be .060, which is a small effect size. The R^2 for schedule was .127 (F = 14.984, p < .001). The f^2 effect size statistic

was calculated to be .145, which is a small effect size. The R^2 for functionality was .207 ($F = 26.887$, $p < .001$). The f^2 effect size statistic was calculated to be .261, which is a medium effect size. Lastly, the R^2 for organizational IT satisfaction was calculated to be .064 ($F = 7.043$, $p = .009$). The f^2 effect size statistic was calculated to be .068, which is a small effect size.

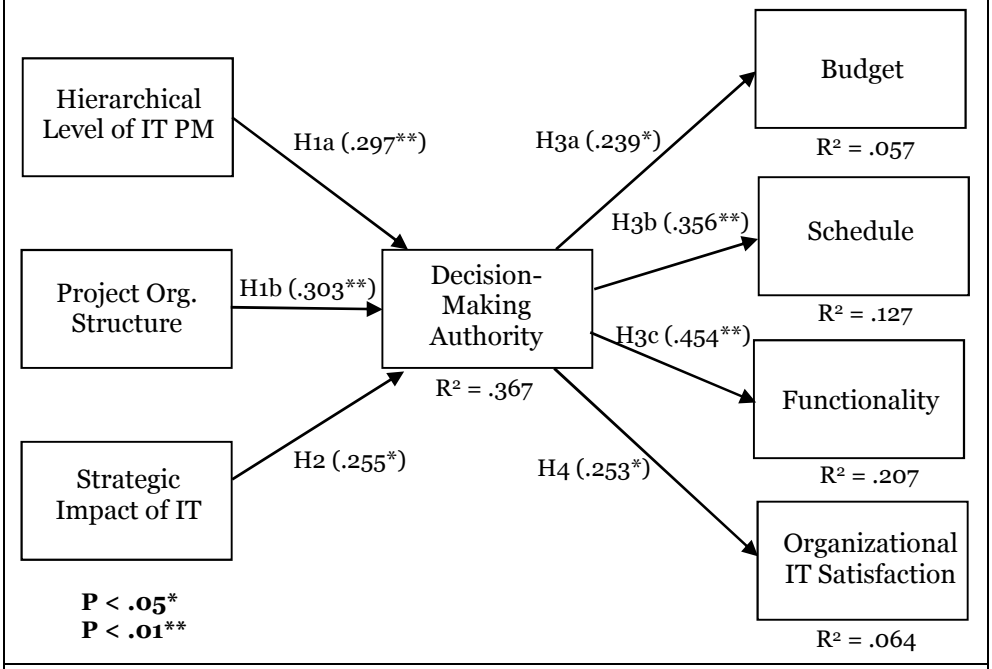

Figure 2. Study Results

Discussion

The purpose of this study was to develop and test a model examining the antecedents and consequences of IT project manager decision-making authority. Using data collected from IT project managers and CEOs, this study provides support for the assertion that the decision-making authority possessed by IT managers plays an important role in determining outcomes for IT projects. These results have important implications for both researchers and practitioners

This study had three hypotheses asserting positive relationships between IT project manager decision-making authority and IT project performance (budget, schedule, and functionality). The results of this research fully supported these propositions. In the same vein, IT project manager decision-making authority was found to have a significant positive relationship with IT product performance (organizational IT satisfaction). Collectively, these results suggest that the role of decision-making authority in effectively managing IT projects is not trivial and should be considered by academics and practitioners alike. Broadly, the results of this study provide further evidence of the importance that power and influence have on the ability of IT departments to execute their functional duties. More specifically, the project management literature has recognized that attempted efforts to control a project may not always be realized (Tiwana and Keil 2010). While previous research has demonstrated factors such as communication (Mastrogiacomo et al. 2014) and leadership performance (see Nixon et al. 2012) are effective means to lead and coordinate a project, they may not be sufficient for influencing the behaviors of organizational members that feel threatened by an IT initiative. This paper asserts that the ability to control a project is, in part, contingent upon the ability to execute decisions and that authority provides one means for doing so. The results of this study support this assertion and consequently provide an important contribution to the IT project manager literature.

This study had two hypotheses concerned with the effect that formal authority had on IT project manager decision-making authority, which the results supported. Specifically, the hierarchical level of the IT project manager was found to have a significant positive relationship with IT project manager decision-

making authority. Business researchers have long argued that an individual's hierarchical level within a firm's organizational structure is related to intraorganizational power (Astley and Sachdeva 1984) and the results of this study appear to confirm these assertions. Specific to the IS literature, it has been demonstrated that a CIO's hierarchical level is related to decision-making authority (Preston et al. 2008). However, previous research has yet to examine this relationship in the context of IT project managers. Thus, this research represents an important contribution in that regard. It is worth noting that hierarchical level of the IT project manager was significantly related to three of the control variables used in this study: age (r = .311, p < .001), years of experience (r = .340, p < .001), and years in current position (r = .322, p < .001). These results are not surprising and suggest that a project manager's formal position is the product of expertise gained over time. Consequently, increasing a project manager's hierarchical position in a firm to improve his ability to control a project does not appear to be practical.

With respect to project organizational structure, the results of this study supported the notion that matrix and projectized structures are significantly related to decision-making authority. These results appear to support previous assertions about the usefulness of non-functional project structures in improving the ability of project managers to control their projects (Marchewka 2012). For IT projects challenged with respect to coordinating activities among project stakeholders and mitigating conflict among of project team members, practitioners should consider implementing a project organizational structure designed to confer greater formal control to the project manager. However, this raises an important question: what are the antecedents necessary for implementing a non-functional project structure? It is probable that a senior IT manager with significant organization power would be necessary for a matrix or projectized structure to be implemented, as it seems unlikely, as the pluralist perspective would suggest, other functional areas would willingly grant an IT project manager formal authority over their employees unless strongly compelled. As can be seen in Table 2, there is a significant relationship between hierarchal position and project organizational structure (r = .261, p = .001), which could be interpreted as evidence of this assertion. If this is the case, implementing a matrix or projectized project environment may not be a project solution that is easily achieved for some organizations, due to a lack of the necessary organizational influence within the IT function.

Lastly, this study posited a positive relationship to exist between the strategic impact that IT provides an organization and the decision-making authority of IT project managers. The data analysis supported this assertion. Broadly, this result provides additional support for the already well-established theory of resource dependence (Pfeffer and Salancik 1978). Interestingly, it does provide some implications for practitioners. Early research examining the overall power possessed by the IT functions within organizations found those departments to have very little organizational influence (Lucas 1984). More recently, however, research has suggested that IT departments possess moderate amounts of organizational influence (Setterstrom and Pearson 2009). The theory of resource dependence would suggest that this shift in power is due to the increased utilization of IT in executing organizational strategies. While IT initiatives remain challenged, there have been improvements over the last several decades in the ability of organizations to meet IT project goals. Certainly, improvements in project control mechanisms and refinement of project management methodologies provide some explanation for these improvements. Notwithstanding the importance of improved project management techniques, if in fact IT project manager decision-making authority is related to IT departmental power, as the results of this research suggest, then it seems plausible that IT managers have gained greater decision-making authority over time as IT has become more critical to the success of organizations. Thus, the increased ability of project managers to achieve successful IT project outcomes might be attributed, in part, to the corresponding increases that have occurred in project manager decision-making authority.

Limitations

It should be noted that several limitations exist for this study. Methodologically, the use surveys to gather data raises some concerns for validity, due to the difficulty ensuring information provided by the respondents is accurate. In the same vein, non-response bias is a concern for this research as well. Another limitation was the use of the IT product performance construct. While the use of a single construct to measure IT product performance is an approach used in previous research published in top-tier journals (e.g. Gemino et. al 2007), one stream of recent research has recognized that IT product success can be conceptualized as multi-dimensional construct (see Petter et al. 2008). The decision to use a single construct was based on the researcher's desire to maintain the parsimony of the research model.

Lastly, because the data used in this study was gathered at a single point in time, causality cannot be concluded from the results.

Future Research

Several avenues for future research can be drawn from this study. One area of potential interest may be the examination of the relationship between IT project manager decision-making authority and project control mechanisms. In particular, the examination of how project manager power might affect choice of particular control mechanisms, as well as how power might affect the relationship between control mechanisms utilized in a project and project performance outcomes, either through mediation or moderation, might provide valuable insights to project managers. Another area of interest might be the investigation of antecedents for IT project organizational structures. As discussed, implementing a project organizational structure that grants a project manager authority over organizational members outside the formal hierarchy of the IT department may not be a simple task. Identifying what factors can be leveraged to implement matrix and projectized organization structures for projects might therefore be useful to practitioners.

Conclusion

Successful management of IT projects remains a challenge for organizations. IT projects are complex, non-routine, and often require the participation of project team members from outside the IT department. Given the cross-functional nature of IT projects, a key challenge for project managers is coordinating the activities of a diverse group of project stakeholders. The results of this research study supports the assertion that IT project managers must possess some degree of organizational power if they are to achieve the desired outcomes for IT initiatives. While relationship building and communication are critical tools for IT project managers, conflict can be expected among some of a project's stakeholders. The authority to choose implementation methods and to ability enforce adherence to them appears to be an important factor for project success. Intra-organizational power continues to be topic of interest for academics, due to the political nature of contemporary organizations, and given the increasingly cross-functional nature of information systems being deployed in modern businesses, should remain an important area of inquiry for IS in particular.

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Appendix

1. Hierarchical Level of IT Project Manager (Armstrong and Sambamurthy 1999) • Who do you report to? If the above person is not the CEO, how many levels are between you and the CEO? (0 - I report directly to the CEO, 1, 2 or more) (R)
2. Project Structure (Larson and Gobeli 1989) • Please circle the option that best describes the typical IT project environment within your organization: o *Functional*: The IT project is divided into segments and assigned to relevant functional areas and/or groups within functional areas. The project is coordinated by functional and upper levels of management. o *Weak Matrix*: A person is formally designated to oversee the IT project across different functional areas. This person has limited authority over functional people involved and serves

primarily to plan and coordinate the project. The functional managers retain primary responsibility for their specific segments of the project. o *Balanced Matrix*: A person is assigned to oversee the IT project and interacts on an equal basis with functional managers. This person and the functional managers jointly direct workflow segments and approve technical and operational decisions. o *Strong Matrix*: A manager is assigned to oversee the IT project and is responsible for the completion of the project. The functional manager's involvement is limited to assigning personnel as needed and providing advisory expertise. o *Projectized*: A manager is put in charge of an IT project team composed of a core group of personnel from several functional areas and/or groups, assigned on a full-time basis. The functional managers have no formal involvement.
3. Strategic Impact of IT (Croteau and Bergeron 2001) • IT has a strategic impact on our firm • In our organization, IT helps us to change industry practices. • Information systems allow our firm to differentiate itself from competitors • IT has enabled our firm to establish competitive barriers • Information systems are used for competitive advantage for our firm • IT has enabled our firm to establish a defensible market
4. IT Project Manager Decision-Making Authority (Lewis et al. 2002; Preston et al. 2008) • Other people and groups within the (greater) organization have notable influence over important operational decisions in my projects. (R)* • As the project manager, I am free to determine the project management approach for projects • I have a great deal of discretion with regard to managing IT projects. • I have authority to adapt the projects' rules, policies and procedures to the changing environment • I feel that I have autonomy in handling work problems relating to projects I manage • I have sufficient freedom in running my projects. • Management outside of the IT project exercise great influence over the design of work assignments within my projects. (R)*
5. Budget (Gemino et l. 2007; Lewis et al. 2002; Marchewka, 2011) • IT projects usually are completed within their budget goals. • The following scale represents your organization's ability to meet project schedules for IT projects over the PAST 3 YEARS. (Much worse, worse, same, better, much better)
6. Schedule (Gemino et l. 2007; Lewis et al. 2002; Marchewka, 2011) • Time goals are usually met for IT projects. • The following scale represents your organization's ability to meet project budgets for IT projects over the PAST 3 YEARS. (Much worse, worse, same, better, much better)
7. Functionality (Belout and Gauvreau 2004; Marchewka, 2011) • The expected amount of work is typically completed for IT projects. • The following scale represents your organization's ability to ability to complete system requirements for IT projects over the PAST 3 YEARS. (Much worse, worse, same, better, much better)
8. Org. IT Satisfaction (Belout and Gauvreau 2004; Gemino et. al 2007; Marchewka, 2011). • Software delivered by the IT department has provided the expected value to the organization • Overall, I am satisfied with software solutions provided by the IT department • Software solutions developed by the IT department are effective • Software solutions developed by the IT department are efficient • Software solutions delivered by the IT department meet the information processing needs of our organization

*Denotes that item was dropped from the measurement model