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# Perceptions of Illegitimate Power in IT Projects

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**Abstract.** When IT projects are initiated because of personal benefits then the initiator acts contrary to the legitimate power of their organisational position. Due to their expertise and technical knowledge, IT managers may believe that during the initiation of an IT project power boundaries were crossed and hence, develop perceptions of power misuse, or as termed in the literature, perceptions of illegitimate power. Building on existing work in the area of organisational power and resistance, we examine the extent to which four factors (IT project complexity, IT project benefit creation ability, top management commitment, and formal project management) influence an IT manager's perceptions of illegitimate power in IT projects. Our empirical analysis confirmed that three of four factors affect perceptions of illegitimate power; only the hypothesis between formal project management and perceived illegitimate power was not significant. This paper contributes to IS research because it is an initial attempt to capture factors that trigger perceived illegitimate power. The research has practical implications because it demonstrates how illegitimate power perceptions emerge.

**Keywords:** Illegitimate power, resistance, IT project, top management commitment, formal project management, IT project complexity.

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# 1 Introduction

Organisations initiate information technology (IT) projects to achieve major organisational changes leading to significantly improved organisational outcomes (Markus 2004). There are many reasons why IT change projects are undertaken (Krell et al. 2011). One reason being the desire to expand a person's span of control, thereby strengthening their organisational power (Markus and Pfeffer 1983). In the context of organisations, one source of power is legitimate power (French and Raven 1959; Raven 1965). A person with legitimate power has the right to influence others, request activities and behaviours from them, and they, in turn, are expected to comply with the requests (French and Raven 1959; Raven 1965). Consequently, if a person acts outside the boundaries of their organisational position then that person exercises illegitimate power (Mintzberg 1983). Indeed, illegitimate power – or the misuse of a person's organisational power position – has been touted as “one of the prime moving forces within any organisation, for better or worse” (Pinto 2000, p. 85).

Research on implementation of IT projects has shown that individuals may exhibit resistance behaviour towards the newly implemented technology (Markus 1983). However, individuals do not resist new technologies per se (Dent and Goldberg 1999); rather their behaviours are motivated by fear of uncertainty, the redistribution of resources, and feelings of inequity when compared to others in the organisation (Joshi 1991). Resistance behaviours are even stronger when people suspect that an IT project is initiated because of illegitimate power (Marshall 1978). In this case, a project initiator uses the IT project to achieve personal benefits, such as securing a promotion or weakening the position of a rival (Levine and Rossmore 1994).

Anyone in an organisation may develop perceptions of illegitimate power in relation to an IT project, but we focus on IT managers in this study<sup>1</sup> (King et al. 2001; Shearer and Steger 1975) because their advanced technology knowledge and insights into the business domain allows for determining the need for and the benefits of an IT project (Fink and Neumann, 2009). Thus, IT managers are more apt at perceiving illegitimate power if they fail to comprehend the need and the potential benefits for the project (Howard et al. 2003).

This study examines factors that contribute to perceptions of illegitimate power by investigating the research question: *What factors explain an IT manager's perception of illegitimate power in relation to the initiation of an IT project?* We use as our theoretical lens prior research on power and resistance towards information technology; in particular French and Raven's (1959) sources of power to define illegitimate power and Joshi's (1991) model of resistance to explain the IT managers inequity beliefs in situations of perceived illegitimate power. To identify the factors that contribute to the creation of perceived illegitimate power, we draw on Lapointe's and Rivard's (2005) framework on resistance to IT projects

We conducted a quantitative study and included responses from 92 Australian IT managers to test our hypotheses. Data were analysed using structural equation modelling (SEM)/ partial least squares (PLS). Results showed that three of four identified factors (i.e., complexity, IT project benefit creation ability, and top management commitment) impact perceptions of illegitimate power by IT managers. Formal project management did not have a significant impact.

This paper contributes to IS research by enhancing our understanding of power and resistance in IT projects. In particular, this paper is an initial attempt to investigate factors that influ-

ence perceptions of illegitimate power. The paper has practical implications as it suggests IT project conditions that may facilitate perceptions of power misuse and highlights how top management may mitigate potential resistance behaviour. Our findings may assist firms in detecting situations that may cause IT managers to perceive that an IT project is initiated ‘for the wrong reasons’ and ultimately, help to improve the success rate of firms’ IT projects.

## 2 Background

### 2.1 Defining organisational power

Power has been studied in different fields of research, including management (Salancik and Pfeffer 1974; Shen and Cannella 2002), marketing (Gaski 1984; Ho 2001), psychology (French and Raven 1959; Garrison and Pate 1977) and information systems (Jasperson et al. 2002; Markus 1983). Jasperson et al. (2002) showed in their review article on power and IT research that the concept includes themes of “authority, centralisation, decision rights and participation in decision making, influence, and politics” (Jasperson et al. 2002). Table 1 presents key themes relevant to our research on illegitimate power (for elaborative definitions of further power themes see Jasperson et al. 2002). Hence, the challenge in studying power stems from the various meanings this concept encompasses. For example, power has been described as the ability of one person to influence another person to do what this person would not have otherwise done (Raven et al. 1998). This rational view of power captures the right of a power holder to request changes in the behaviour of another person (Gaski and Nevin 1985). The concept of power is closely related to the concept of legitimacy, however, the literature describes the two as separate concepts (Mitchell et al. 1997). In its simplest form, legitimacy can be conceptualised as “a form of social approval that facilitates the acquisition of power” (Bouquet and Birkinshaw 2008, p. 477).

From a structural perspective, power is the result of a person’s position within an organisational structure (Cendon and Jarvenpaa 2001). Mitchell et al. (1997) add that “power gains authority through legitimacy” (p. 869), but “power and legitimacy are different, sometimes overlapping dimensions, and each can exist without the other” (p. 859). Consequently, a powerful person has authority and decision rights over organisational resources (Mintzberg 1983). IT is a resource that, when introduced or significantly changed, can affect the power balance in an organisation and may alter the span of control of certain individuals (Krell et al. 2011; Markus 1983). The amount of power a person holds depends on their position in the organisation. For example, Pfeffer (1981) explains that the power of a manager in a support department is limited compared to the power of a manager in a core organisational department because of the fewer resources the support department manager has. Ultimately, a person who loses legitimate standing in an organisation experiences a decrease in legitimate power and influence over others (Suchman 1995). The intertwined nature of key themes in the study of power is illustrated in figure 1.

<i>Concept</i>	<i>Definition</i>
<i>Power</i>	The ability to evoke a change in another's behaviour (Gaski and Nevin 1985, p. 130).
<i>Hierarchical Authority</i>	Hierarchical authority refers to official organisational authority derived from the right to supervise and give orders to others (Kluegel 1978, p. 289).
<i>Legitimacy</i>	A generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Mitchell et al. 1997, p. 869).
<i>Legitimate Power</i>	Legitimate power is the formal power and authority legitimately granted to the manager under charter by the organisation's peers (Singh et al. 2009, p. 167).
<i>Illegitimate Power</i>	Illegitimate power is the exercise of power outside the legitimate (or formal) authority structure such that the person exercising power imposes his or her will on others in the organisation (Walker and Newcombe 2000, p. 38). Illegitimate power is the act of ascribing to oneself more than one has in terms of authority (Singh et al. 2009, p. 173).

Table 1. Key power themes in this study

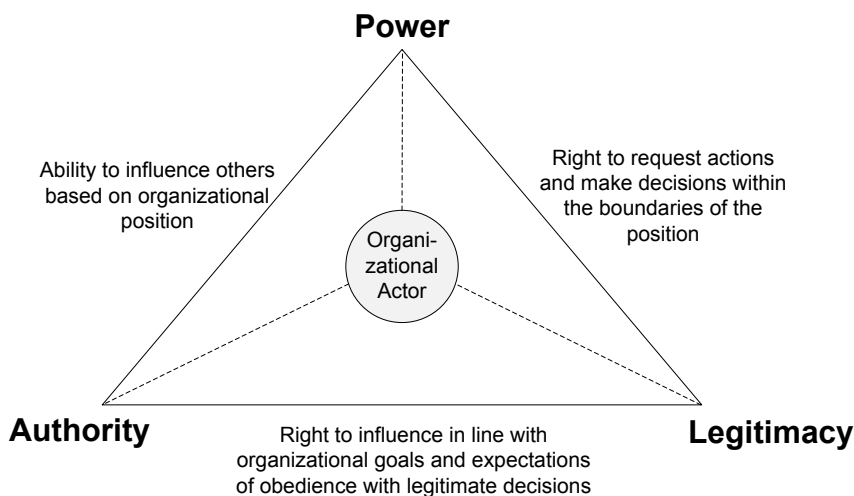


Figure 1. Power and intertwined themes of structural power (based on Gaski and Nevin 1985; Mintzberg 1983; Raven 1993; Suchman 1995)

The structural perspective of power focuses on the decision authority of organisational power holders and thus, has a top-down view of power. The Scandinavian research tradition in exam-

ining power can be described as a bottom-up view that is concerned with challenging patterns of dominance enacted and reinforced by IT (Beck 2002; Ditttrich 2003). Floyd et al. (1989) suggest that the implementation and use of IT in organisations is a collaborative process among designers and users that is characterised by mutual learning and cooperation. Through participatory design, users become involved in decisions throughout an IT project to facilitate “better systems for users and for organisations” (Kyng 2010, p.4). User participation in IT-related decisions also leads to changes in attitudes toward the IT (from passive adaptation to self-secure contribution) (Ditttrich 2003) and as such enables the generation of support for the IT project across the organisation. However, as Beck (2002) argues “participation is not a sufficient condition for changing power relations” (p. 7) and that examining the role played by technology in IT projects may allow for an improved understanding of the dominance pattern.

Taken together, the concept of power in organisational settings is a complex phenomenon that captures the rights of a person to influence others. The organisational position gives legitimacy and power to certain individuals enabling them to dominate other organisational members. Technology, and as such IT projects, can alter patterns of dominance by serving as change agents for individuals who may lack power based on the formal organisational authority and structural position.

## 2.2 Illegitimate power and other sources of power in organisations

The power a person possesses in an organisation can stem from different sources. Prior research in organisational psychology has focused on the identification of power sources and the most robust and well-known framework is French and Raven’s (French and Raven 1959; Raven 1965) that lists six sources of power (originally five, a sixth source was added later). The power sources are presented in table 2. Of these various power sources, three sources (coercive, reward, and legitimate) depend on formal organisational authority whereas the other three are forms of personal power based on the power holder’s traits and behaviours (Singh et al. 2009). For our study, we focus on sources that relate to power from a structural and authoritarian perspective. For a person to exercise coercive power or reward power, he or she needs to have authority and thus, must be in an organisational position that gives the person legitimate power. In fact, Etzioni (1975) also refers to legitimate power as position power.

Legitimate power determines the limits of a person’s power through official norms that outline what is perceived as legitimate and illegitimate behaviour. For example, Preston et al. (2008) state that a subordinate (e.g., IT manager) needs to consult first with their superior (e.g., CIO) before engaging in any IT-related activity (e.g., replacing a legacy system with an ERP system).

The opposite of legitimate power is illegitimate power which is used “to achieve objectives which are not the organisation’s” (Walker and Newcombe 2000, p. 38). Motivated by their private goals and their self-interests, individuals engage in illegitimate power to achieve personal benefits (Hochwarter et al. 2000). Individuals, who act based on illegitimate power, employ tactics such as secrecy and deception, and have hidden agendas (French and Bell 1990). The self-interests can be satisfied through the implementation of new technology to provide access to

tangible and intangible resources (Doolin 2004). Mintzberg (1983) elaborates that illegitimate power emerges when the 'system of authority' - defined by the power vested in office or position fails - and an individual displaces the organisational goals and interests in favour of their own personal benefits.

<i>Sources of Power</i>	<i>Meaning</i>
<i>Coercive power</i>	Ability of a person to use threats of punishment. Others comply to avoid being punished.
<i>Reward power</i>	Promise of monetary or non-monetary compensation. Others comply because they want the rewards.
<i>Legitimate power</i>	Ones right to influence based on the person's organisational position. Others comply because they accept the legitimacy of the power holder.
<i>Expert power</i>	Reliance of someone's skills, knowledge, expertise. Others comply because they believe in the superior knowledge of the power holder.
<i>Referent power</i>	Identification with and admiration of a powerful other. Others comply because they respect and identify with the power holder.
<i>Informational power</i>	Use of persuasive information or logical reasoning. Others comply because they believe in the information and facts provided.

Table 2. Sources of power based on French and Raven's framework (French and Raven 1959; Raven 1965)

### 2.3 Resistance behaviour to technology change

Closely related to the study of power is the topic of resistance. Hirschheim and Newman (1988) define resistance as a person's "adverse reaction to a proposed change" which may be clearly visible or less obvious (Hirschheim and Newman 1988, p. 398). Indeed, resistance behaviours can be covered up for some time only to appear at a later stage. An extensive body of IS research has demonstrated that IT can trigger resistance behaviour (see for example, Jasperson et al. 2002; Lapointe and Rivard 2005; Markus 1983; Markus and Pfeffer 1983).

Resistance behaviour can have different motivations. Included among the nine primary causes of resistance are uncertainty, lack of involvement, and redistribution of resources (Hirschheim and Newman 1988). Perceptions of illegitimate power can also cause resistance. When a person believes another individual is acting outside the legitimate boundaries of the position to gain personal benefits then the person will not comply with any requests (Mintzberg 1983). For example, when an IT manager is asked by his or her CIO for a recommendation about a new ERP system but then the recommendation is not followed, the IT manager may not understand this decision, and might perceive that the decision is motivated by the CIO's personal interests. In

this case, the IT manager might suspect illegitimate power to be at play (Hirschheim and Newman 1988) and subsequently, might exhibit resistance behavior toward the decision.

## 2.4 Theoretical models explaining resistance to technology change

Markus (1983) builds on interaction theory to examine how people decide about resisting new technology. Those individuals in a firm who believe the new technology will alter the power distribution to their disadvantage will exhibit resistance behaviour. Similarly, Joshi (1991) theorises that individuals resist new technology under perceptions of inequity. The assessment of equity is undertaken at three different levels. At the first level, the person assesses the extent to which IT alters required inputs and received outputs. If the net gain is negative, then the person perceives inequity through the technology. At the second level, the assessment is done between the potential benefits of the new IT for the organisation and the person. If the person perceives that the organisation gains more than the person, then the person develops feelings of inequity. Finally, at the third level, the assessment takes place between the achieved outcomes through the new IT for any reference group (e.g., team in another department) and the person. If the assessment reveals that a reference group gains more than the person, perceptions of inequity surface. Perception of inequity at any of the three levels result in resistance behaviour (Joshi 1991).

Lapointe and Rivard's (2005) framework on resistance presents five basic primitives that capture the phenomenon of resistance to technology: subject of resistance, object of resistance, initial conditions, perceived threat, and resistance behaviour. The subject, who can be any person in an organisation, exhibits resistance behaviours to IT if a threat is perceived; for example, loss of resource control after an IT implementation. For our study the two primitives of (1) object of resistance and (2) organisational conditions are of interest because they present triggers for feelings of inequity and thus, are key factors in causing resistance behaviour (Lapointe and Rivard 2005). Different understandings exist about the meaning of the object of resistance. For example, Bartos et al. (2008) consider an entire information system as the object of resistance whereas Martinko et al. (1996) consider only particular features of an information system as the object of resistance. Furthermore, an IT project as a whole can also represent the object of resistance, whereas in the later stages of an IT project, the object of resistance may become the IT advocates (e.g., beta users or project champion) (Lapointe and Rivard 2005). In addition, Lapointe and Rivard (2005) posit that resistance behaviour is contextual and that the organisational conditions under which technology is introduced have a strong impact on the extent to which a person comprehends the project. These conditions relate to either the existing organisational settings (e.g., established routines and procedures for budgeting approvals and IT investment decisions) or accompanying conditions of the IT project (e.g., any aspects that relate to the IT project, such as the project management approach chosen).



### 3 Hypotheses development

In this study, we use Lapointe's and Rivard's (2005) model of resistance and focus on the resistance object and accompanying conditions to identify factors that facilitate perceptions of illegitimate power. The perceptions of illegitimate power are a result of the interaction of the object with the conditions (Lapointe and Rivard 2005) and may cause an IT manager to feel that inequity arises from the project (Joshi 1991). Next, we present our hypotheses and figure 2 depicts our research model.

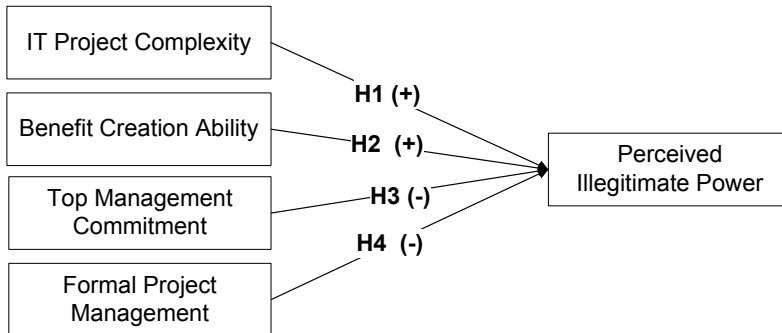


Figure 2. Research model

#### 3.1 Complexity of the IT project and perceived illegitimate power

Among all projects an organisation initiates, IT projects tend to be the most complex ones (Xia and Lee 2004). Complexity of an IT project is a direct project characteristic and hence, represents the object of resistance. We propose that the level of IT project complexity impacts on the IT manager's perceptions of illegitimate power.

IT project complexity is defined by the number, variety, and size of the different project parts which are sub-projects to the main IT project (Xia and Lee 2004). IT project complexity also includes the notion of complicatedness suggesting that the more complex a project is, the more challenging it is to successfully deliver the project (Geraldi et al. 2011). Project complexity has been shown to impact on time, budget/cost and outcome quality. For more complex projects, the time and budget needed to complete the project increases while the quality decreases (Baccarini 1996).

A highly complex project may lead to information inadequacy (Pich et al. 2002) because of the many parts that interact with each other, which, in turn, make it almost impossible to evaluate the benefits of each individual part. Therefore, information inadequacy provides the opportunity for an IT project initiator to add parts to the project that serve personal benefits. The more complex an IT project is, the greater the opportunities that sub-project parts are used to

satisfy personal interests. Furthermore, the complicatedness of the IT project makes it difficult to capture the outcomes of the IT project. As a result, an IT manager may not fully understand a highly complex IT project and is challenged to rationalise all sub-projects and how they align with the organisation's objectives. In such a situation, an IT manager may believe that personal interests are pursued and may perceive the project initiator has acted outside legitimate power boundaries, thereby using the complexity of the IT project to mask personal benefits. Hence, the IT project would trigger feelings of inequity because the IT manager believes the IT project provides benefits for the project initiator and not for the organisation. Prior research on trust and distrust suggests a similar relationship. A study on the use of online banking found that a lack of understanding of the functions of the IT facilitated the emergence of distrust in the IT system (Benamati and Serva 2007). Consequently, we argue that for highly complex IT project, IT managers are more likely to develop perceptions of illegitimate power. Accordingly,

**H1:** The level of complexity of the IT project has a positive effect on the level of perceived illegitimate power.

### 3.2 Ability of the IT project to create benefits and perceived illegitimate power

Organisations invest in IT to achieve organisational benefits and to gain business value (Melville et al. 2004). The benefits include strategic, informational, and transactional benefits (Mirani and Lederer 1998). The ability to create organisational benefits is directly related to the IT project and as such, represents a characteristic of the resistance object. Thus, we propose the benefit creation ability of an IT project as another factor that impacts on an IT manager's perceptions of illegitimate power.

Organisational benefits generated through IT projects have attracted considerable attention in research (see for example, Mirani and Lederer 1998; Murphy and Simon 2002; Shang and Seddon 2002) because they serve as evidence for the positive influences IT has in organisations. Mirani and Lederer's (1998) three classic categories include 25 organisational benefits which are divided into (1) strategic benefits, e.g., competitive advantage and alignment; (2) informational benefits, e.g., information access and information flexibility; and (3) transactional benefits, e.g., communication efficiency and business efficiency. In their study on enterprise systems, Shang and Seddon (2002) added IT infrastructure benefits as a fourth type.

IT managers possess skills and expertise to evaluate the benefits an IT project may provide to the firm (Fink and Neumann, 2009). Although prior research has shown that IT projects are initiated to achieve organisational benefits, claims by project initiators that an IT project provides numerous – even potentially conflicting – benefits in multiple categories may seem implausible to an IT manager. This means that overly positively presentation of an IT project, as having the ability to provide extensive organisational benefits, may create doubts about project's true benefits. In fact, certain combinations of benefits are even not possible to achieve (Murphy and Simon 2002).

Consequently, the over-promises regarding the IT project's benefits may motivate the IT manager to question the ability of the project to create them. In addition, Mintzberg (1983)

explains that for most benefits, for example information access and flexibility, it cannot clearly be determined which actions result in the creation of a benefit, making it almost impossible to determine the extent to which an action achieves a benefit.

The doubts of the IT manager in the benefit creation ability may also motivate the manager to scrutinise the communicated benefits on their credibility and correctness. Because an IT manager is not able to comprehend all benefits he or she may conclude that the IT project contributes to the personal benefits of the project initiator. In this case, a project initiator acts outside the legitimate boundaries of the position, and uses power illegitimately to undertake the IT project. In turn, the perceptions of illegitimate power contribute to feelings of inequity (Joshi 1991) because the power holder will gain personal benefits from the project. Hence, we argue that if an IT manager cannot reconstruct the benefits of the IT project as exclusively organisational benefits, he or she may believe personal benefits are pursued and power boundaries have been crossed leading to perceptions of illegitimate power. Accordingly,

**H2:** The extent of benefit creation ability of the IT project has a positive effect on the level of perceived illegitimate power.

### 3.3 Top management commitment and perceived illegitimate power

Top management is always involved in IT projects; albeit to varying extents. Top management in a company is defined as the 'dominant coalition' (Finkelstein 1992) and as those individual(s) others turn to "as the organisation's symbolic figureheads and who are expected to provide public accounts" (Ginzel et al. 1992). The extent to which top management is involved in an IT project illustrates top management commitment to the project, which we propose as an accompanying condition of an IT project, that impacts on an IT manager's perception of illegitimate power.

Top management commitment consists of three components: (1) setting and defining the objectives of the IT project, (2) providing feedback throughout the project, and (3) demonstrating participation (Rodgers et al. 1993). The commitment is visible through sufficient and unconstrained resource allocation to the IT project (Kearns 2007), endorsement of the project to subordinates (Teo and Pian 2003), and the use of top management's influence to advance the project (Aladwani 2002). An extensive body of prior research has shown that top management commitment is required for IT projects to be successful (see for example, Akkermans and van Helden 2002; Sabherwal et al. 2006; Thong et al. 1996). In fact, Young and Jordan (2008) conclude that top management commitment is not only one of many critical success factors (CSF) for an IT project but it "is the most important CSF" (Young and Jordan 2008, p. 720). However, some studies showed that conditions of weak top management can be overcome by forming and strategically using alliances with other organisational stakeholders (Ngwenyama and Nørbjerg 2010).

Top management commitment signals to an organisation that senior management advocates for the project (Markus 1983). It can be assumed that top management, prior to giving its commitment, has scrutinized the project and undertook an independent evaluation of the project. Such an evaluation includes resource assessments, cost and benefit analysis, and the estimation

of skills required for the project (Ahire and O'Shaughnessy 1998). The extra level of scrutiny and a large number of senior executives, who are committed to the project, mitigate beliefs that hidden agendas are pursued to achieve personal benefits. Hence, the stronger the commitment from the top, the less likely the IT manager believes power boundaries were crossed by a project initiator. Consequently, the IT manager is compelled to believe that organisational objectives rather than personal benefits are the reason to initiate the IT project (Mintzberg 1983). Subsequently, perceptions of illegitimate power are reduced. Accordingly,

**H3:** The level of top management commitment to an IT project has a negative effect on the level of perceived illegitimate power.

### 3.4 Formal project management and perceived illegitimate power

Companies use project management to plan and manage their different IT projects to successfully deliver on the project objectives (PMBOK 2004). We propose that the project management approach is another accompanying condition of an IT project that may also influence perceptions of illegitimate power.

The project management institute (PMI), the largest international association dedicated to project management (Raz and Michael 2001), defines project management as the “application of knowledge, skills, tools, and techniques to project activities” to successfully complete a project (PMBOK 2004, p. 368). Examples of project management activities include the definition and tracking of milestones (Leimeister et al. 2008) and the allocation of skilled human resources to particular project tasks (Kankanhalli et al. 2007). Two approaches to project management exist: informal project management (Labuschagne and Brent 2005) and formal project management (Irani and Love 2000). Informal project management relies on the intuition of project managers (Gane 2001). The informal approach is characterised by a deliberate lack of project documentation and relies on communication and intrinsic motivation of project members (Labuschagne and Brent 2005). Formal project management is a structured approach that applies standardised techniques to ensure that project requirements are met (Crawford et al. 2003). During the project, various standardised techniques are used to produce documents that allow monitoring and controlling the IT project (Jaafari 2001). Formal techniques include project schedules, plans for staff and budget (PMBOK 2004), and stakeholder analysis (Bonke and Winch 2000).

Formal project management provides a governance mechanism for IT projects (De Haes and Van Grembergen 2004). To comply with the organisation's governance procedures, the project initiator needs to use different formal techniques when seeking approval of the IT project and for estimating project times and budgets/costs. It can be assumed that the formal mechanisms make it difficult for a project initiator to simultaneously comply with the organisational governance system and pursue personal benefits. Consequently, an IT manager may believe the project initiator cannot act outside the legitimate boundaries of the organisational position when formal project management is satisfactory performed.

Consequently, the application of formal mechanisms and the existence of extensive documents give the IT manager confidence that power boundaries are adhered to and no illegitimate

power is at play. Furthermore, the check-and-balances of the formal approach require that official processes for an IT project are followed leading to an increase in transparency of the IT project (Bourque et al. 1999). Project transparency is widely argued as a mode of control that further limits opportunities to cross power boundaries and exercise illegitimate power (Mintzberg 1983). Thus, we argue that an increased level of formal project management reduces an IT manager's perceptions that personal benefits are pursued and the project initiator acts outside its legitimate power. Accordingly,

**H4:** The level of formal project management applied to an IT project has a negative effect on the level of perceived illegitimate power.

## 4 Methodology

### 4.1 Research instrument development

In this study, a research instrument was developed to measure the impact of four factors on perceptive illegitimate power following the guidelines by Malhotra and Grover (1998). In a first step, an extensive literature review was performed to determine if items/questions exist for the constructs of interest (for additional details beyond the background section on the literature review see, Krell 2010). This literature review revealed that established measures for the constructs were available in prior research; however modifications of the items were necessary for the current study. Because modifications of prior research measures are a threat to an instruments' validity and reliability (Straub 1989), researchers need to carefully undertake the modifications so that the instrument retains its original strengths (Stewart et al. 2012). In this study, we modified the items to account for the different context (i.e., IT system) and we changed the mode of survey administration to entirely online to be able to benefit from using the Internet for data collection (i.e., faster turnaround time and more cost-effective compared to mail surveys) (Barbeite and Weiss 2004).

In a second step, the research instrument was validated and refined using expert panels (for more details on the panels, see the appendix). First, an academic panel consisting of six IS researchers were asked to comment on the appropriateness of the measurement instrument. These panel members were chosen because of their research expertise in the areas of IS adoption, use, power, culture, and success. Second, a practitioner panel of four IT professionals commented on the understandability and answerability of the questions. The practitioners were experienced with IT projects; either as external consultants or in-house IT personnel in Australian and international companies. For both panels, an evaluation form was created that included (1) the definition of each construct, (2) the items/ questions for each construct, and (3) instructions for the panel expert on what to focus on when commenting on the questions in the survey. Feedback from the panels indicated a high level of appropriateness, understandability, and answerability

of the research instrument. However, based on the practitioners' recommendations, we did some minor word changes to some questions.

## 4.2 Pilot test

To refine the research instrument and to determine the reliability of the instrument, the questionnaire, as presented in table 3, was pilot tested with sixty-nine participants (i.e., IT managers). We sourced participants from the Australian business database Who's Who because the database provided names and contact details of IT managers in Australian firms. The response rate for the pilot study was 17.5% which compares favorably to other online surveys (Couper 2000) and is in line with response rates for studies that target similar organisational members (Byrd and Turner 2000).

Reliability was determined for all constructs through the calculation of the correlation coefficient Cronbach Alpha, and all alphas are between 0.72-0.98, indicating an acceptable level of reliability (Hair et al. 1998). The alpha for the formal project management construct, however, was high (0.98). A re-evaluation of the questionnaire showed that the items measuring this construct appeared directly one after another, and thus, the concern was that respondents might not evaluate each item individually (Dillman 1999). To avoid this problem, the items were randomly distributed on different pages in the main study. After this modification, the survey instrument was deemed ready for the main study.

## 4.3 Main data collection

Data for the main study were collected via an online survey over a three-month period from November 2008 to January 2009. Data are representative for our study on perceptions of illegitimate power because the factors included in our research are applicable for today's IT projects. Survey participants were IT managers in Australian organisations recruited by a survey panel vendor. Participants were contacted via e-mail and invited to participate in the survey.

Various measures suggested in the literature were implemented to improve the response rate and to minimise non-responses and dropouts. For example, we included in the subject field and the invitation text a plea for help outlining that this research is part of a PhD thesis at a large Australian university and that the PhD student would be grateful for the IT managers' participation (Trouteaud 2004). Progress information was used to minimise the dropout rate and included a motivational text (i.e., Almost done! Only two pages to go) (Vicente and Reis 2010). Furthermore, we avoided the word 'survey' and instead used the word 'study' because Porter and Whitcomb (2005) observed lower response rates when the invitation text or the subject line included the word survey (Porter and Whitcomb 2005). We chose a design which used plain colours and only included the university logo on the front page (Dillman et al. 1998; Vicente and Reis 2010). Finally, two reminders were sent in intervals of four weeks (Creswell 2009). A total of 150 responses were returned of which eight were removed, because the data suggested the survey was not answered sincerely, resulting in a sample of 142 responses.

<i>Construct (# of items)</i>	<i>Mean (SD)</i>	<i>Item</i>	<i>Scales/ Questions</i>	<i>References</i>	<i>Al- pha</i>
<i>Perceived illegitimate power (3)</i>	2.55 (1.46)	POWE1	The project only serves the purpose of a few individuals, not the whole firm	(French and Raven 1959; Kacmar and Carlson 1997; Mintzberg 1983; Miranda and Bostrom 1993)	0.76
		POWE2	Some individuals initiated the project to extend their power		
		POWE3	Personal benefits, rather than benefits of the firm were the decisive reason to initiate the project		
<i>Complexity of the IT project (4)</i>	4.25 (1.38)	COMP1	The technical implementation of the project was difficult	(Baccarini 1996; Tait and Vessey 1988; Teo et al. 2003; Xia and Lee 2004)	0.77
		COMP2	Implementing the system was a challenge for my firm		
		COMP3	The system implementation involved multiple software platforms		
		COMP4	The system required a lot of integration with other systems		
<i>Benefit crea- tion ability (3)</i>	4.35 (1.47)	BENE1	Estimate how much the system contributes or will contribute in the future to return on investment	(Mirani and Lederer 1998; Premkumar and King 1992; Shang and Seddon 2002)	0.72
		BENE2	Estimate how much the system contributes or will contribute in the future to market share		
		BENE3	Estimate how much the system contributes or will contribute in the future to customer satisfaction		
<i>Top manage- ment com- mitment (4)</i>	5.67 (1.21)	TOPM1	Top management was interested in the project	(Aladwani 2002; Kearns 2007; Teo and Pian 2003; Wixom and Watson 2001)	0.90
		TOPM2	Top management considered the project important for the firm		
		TOPM3	Top management effectively communicated its support for the project		
		TOPM4	Top management supported the project		
<i>Formal project man- agement</i>	4.66 (1.55)	FPRM1	A formal budget plan was developed for the project	(Crawford et al. 2003; Henry et al. 2007; Martin et al. 2007; PMBOK 2004)	0.98
		FPRM2	Quality requirements for the project were formally specified		
		FPRM3	A formal project staff plan was developed		
		FPRM4	A formal resource plan was developed		

Table 3. Construct measurement and scale reliability of the pilot sample

After the main data collection was completed, the researchers explored the possibility of combining the pilot data and main survey data. The combination was deemed suitable because (1) no wording changes to the survey items were performed after the pilot and (2) between the two data sets no differences were determined when unpaired t-tests between the two groups were performed. Hence, a combined data sample with 211 responses was created. Of these 211 responses, 34 responses came from respondents in micro firms (i.e., less than five employees or non-employing businesses based on the classification framework of the Australian Bureau of Statistics) and 14 responses from small businesses (i.e., firms with 5-19 employees). These 48 responses were removed from further data analysis because it is very likely that in micro firms and small business the different roles of IT manager, managing director, CIO, and owner rest with one individual. Hence, for these companies, perceptions of illegitimate power or top management commitment may not be relevant.

Furthermore, perceptions of illegitimate power may also be impacted by the type of IT project, specifically the IT artifact implemented. In IT projects that trigger major organisational change (i.e., technochange projects), the IT artifact becomes the change driver (Markus 2004) and thus, it is important to only study those IT projects where technochange takes place. In our data collection, we differentiated between IT project as either enterprise systems or individual software applications. Enterprise systems integrate core business processes across various functional areas in a firm and include enterprise resource planning (ERP) systems, customer resource management (CRM) systems, and supply chain management (SCM) systems (Markus 2004). Individual software applications are used independently from - but in support of - the firm's business processes. Because we were in this study interested in major organisational change in the spirit of Markus (2004) technochange, we only included in our analysis those projects that were focused on enterprise systems and thus, removed further responses (71 responses) from our sample resulting in a sample of 92 responses.

Having only 92 responses, we deemed it important to determine the statistical power of our remaining sample using the software G\*Power 3.0 (Faul et al. 2007). In our calculation, we assumed a moderate effect size of 0.15, an alpha of 0.05 for the predictors (four independent variables), and a statistical power of 0.8. Based on these assumptions, our required sample size is at least 85 responses (Faul et al. 2007). Thus, we concluded that the statistical power is acceptable.

## 4.4 Control variables

We included two control variables (1) firm size and (2) project length because these variables were likely to be correlated with the model's constructs (Becker 2005).

First, illegitimate power might be influenced by firm size. In larger firms, in which many hierarchies and departments exist, employees are not informed about every IT project in the organisation. In contrast, in smaller firms, employees are usually aware of the various IT projects and know the person who is in charge of the project. Thus, employees in larger firms might be more likely to perceive that others exercise illegitimate power (Mintzberg 1983). To account for possible effects, number of employees is used as a proxy for firm size (Dewar and Dutton 1986). The scale is in line with conditions of Australian businesses as argued by Gregor et al. (2006) and is based on the classification of the Australian Bureau of Statistics (ABS 2001).



Second, we cannot exclude the possibility that responses are affected by the length of the IT project. As the occurrence of illegitimate power can never be formally documented (Mintzberg 1983), respondents might recall more incidents they perceived as illegitimate power if the project continued over a longer period of time. Therefore, the number of months over which the IT project was undertaken is included as a second control variable.

## 5 Results

The research uses structural equation modeling (SEM)/ partial least squares (PLS) to analyse the data. SEM is a multivariate technique for data analysis that simultaneously estimates a structural model between latent variables and the measurement models of each latent variable (Hair et al. 1998). A PLS model is usually analysed and interpreted sequentially in two stages, that is, the assessment of the adequacy of the measurement model followed by the assessment of the structural model (Barclay et. al, 1995). Considering our sample size of 92 participants, PLS provides a robust analysis because of its component-based estimation (Chin 1998). Results were obtained using SmartPLS 2.0 M3 (Ringle et al. 2005).

Our sample included responses from 41.4% medium businesses (20-199 employees) and 58.6% large businesses (> 200 employees). The 92 IT managers represented a variety of industries with 37% of them employed in companies in the service industry (e.g., 11% communication services, 17 % property and business services, and 13% finance and insurance) and 63% of the respondents from other industries (i.e., non-service industries such as 7% resale trade, 7% manufacturing, and 7% construction). The majority of IT projects (72.8%) had been completed within twelve months prior to administrating the survey.

### 5.1 Test of the measurement model

In a first step, we analysed the data by performing an exploratory factor analysis. We used a principal component method to extract initial factors and a varimax rotation method to create a final factor solution. We used the exploratory factor analysis to demonstrate that the appropriate number of factors emerge from the measurement items, that a high coefficient load of each item on only one factor exists (above 0.6 but not less than 0.4), and that the items load on the factors they theoretically should (Gefen and Straub 2005). For our data, we achieved these three objectives as per table 4.

In a second step, other quality checks of the measurement model were performed, including testing for (1) construct reliability, (2) convergent validity, and (3) discriminant validity (Bagozzi 1982). Construct reliability demands a strong correlation of the items that are related to one particular construct (Fornell and Larcker 1981). For each construct we examined the scale's internal consistency using the reliability coefficient Cronbach Alpha (Cronbach 1951). The recommended threshold for Cronbach Alpha to be sufficient and acceptable is 0.60 (Hair et al. 1998). For all of our constructs the coefficient was between 0.68-0.91, hence suggesting construct reliability (see table 5). Additionally, we assessed each construct's composite reliability

which can vary between 0 and 1. Results above a value of 0.6 are frequently judged as acceptable (Bagozzi and Yi 1988). As our constructs composite reliability values are between 0.79-0.93, we determined they exhibit construct reliability (see table 5).

<i>Items</i>	<i>Factor 1 = Top Management Commitment</i>	<i>Factor 2 = Illegitimate Power</i>	<i>Factor 3 = Benefits</i>	<i>Factor 4 = IT Project Complexity</i>	<i>Factor 5 = Formal Project Management</i>
TOPM1	.878	-.042	.084	.015	.259
TOPM2	.753	-.079	-.038	-.150	.275
TOPM3	.878	.048	.095	-.017	.288
TOPM4	.777	-.222	-.002	.092	.357
POWE1	.009	.897	.163	.127	.015
POWE2	-.188	.811	-.088	.092	.014
POWE3	-.053	.850	.217	.026	-.095
BENE1	-.032	.110	.815	.002	.211
BENE2	-.053	.191	.854	.137	.055
BENE3	.193	-.013	.745	.168	-.091
COMP1	.149	-.024	.067	.816	-.059
COMP2	-.159	.072	-.003	.757	.069
COMP3	-.122	.187	.240	.608	.176
COMP4	.222	.392	.354	.465	.105
FPRM1	.226	.053	-.176	.141	.795
FPRM2	.263	-.007	.152	-.005	.699
FRPM3	.261	-.009	.184	.034	.803
FPRM4	.352	-.083	.058	.067	.770

Table 4. Results from exploratory factor analysis

Convergent validity was examined in two ways; calculating the average variance extracted (AVE) and examining the indicator loadings (Fornell and Larcker 1981; Liang et al. 2007). AVE captures the amount of variance the indicators share with the construct they are supposed to measure and this value should be 0.5 and above which suggests that the measurement items share more variance with the construct they are supposed to measure than any other construct. Our calculated AVEs fulfill this criterion with one AVE boarding the 0.5 threshold (see table

5). In addition, convergent validity was determined by examining the indicator loadings. These values are supposed to be above 0.6, however, loadings ranging between 0.5 and 0.6 are still considered acceptable when other indicators are higher than the 0.6 threshold (Chin 1998). From table 5, we conclude that the indicator loadings suggest convergent validity.

<i>Latent variable</i>	<i>Items</i>	<i>Mean</i>	<i>SD</i>	<i>Standardised factor loadings</i>	<i>Cronbach Alpha</i>	<i>Composite reliability (rho)</i>	<i>AVE</i>
<i>IT project complexity</i>	COMP1	5.30	1.46	.553* **	.68	.79	.493
	COMP2	4.76	1.53	.543***			
	COMP3	4.38	1.87	.792***			
	COMP4	4.71	1.70	.862***			
<i>Benefit creation ability</i>	BENE1	4.85	1.87	.855***	.78	.86	.681
	BENE2	4.08	1.84	.939***			
	BENE3	5.13	1.66	.658***			
<i>Top management commitment</i>	TOPM1	5.48	1.40	.849***	.91	.93	.756
	TOPM2	5.11	1.53	.848***			
	TOPM3	5.46	1.42	.850***			
	TOPM4	5.53	1.36	.929***			
<i>Formal project management</i>	FPRM1	5.03	1.49	.662***	.84	.85	.593
	FPRM2	4.64	1.71	.587***			
	FRPM3	4.68	1.72	.785***			
	FPRM4	4.67	1.66	.986***			
<i>Perceived illegitimate power</i>	POWE1	2.99	1.90	.929***	.85	.91	.767
	POWE2	2.90	1.81	.798***			
	POWE3	3.41	1.90	.895***			

Table 5. Quality criteria of the constructs (significant at \*\*\* $p < 0.001$ )

Finally, discriminate validity indicates the extent to which a construct is different from other constructs; hence it expresses the dissimilarity between the measurements of measuring different constructs (Oliver et al. 2010). The items for a construct are expected to load more highly on their construct than on any other construct (Chin 1998). To show discriminate validity, the square root of the AVE for each construct should be greater than the correlations between that construct and all other constructs (i.e., common variances) (Fornell and Larcker 1981). Exami-

nation of table 6 suggests that the measurement model has an adequate level of discriminate validity.

	<i>Mean</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>1. Complexity of the IT project</i>	4.79	1.18	.702				
<i>2. Benefit creation ability</i>	4.69	1.42	.356**	.825			
<i>3. Top management commitment</i>	5.39	1.26	0.037	.088	.869		
<i>4. Formal project management</i>	4.76	1.36	.176	.156	.610**	.770	
<i>5. Perceived illegitimate power</i>	3.10	1.64	.306**	.246*	-0.167	-0.046	.876

Table 6. Discriminate validity assessment (significant at \* $p < 0.05$ , \*\* $p < 0.01$ )

To examine the possibility of multicollinearity, we calculated the variance inflation factor (VIF) values among the constructs in the model. Our results range from 1.05 to 1.74 and hence, are well below the strict threshold of 3.3 (Bollen and Lennox 1991; Petter et al. 2007) suggesting that multicollinearity is not a concern.

## 5.2 Structural model

Building on our examination of the measurement model, we then tested the structural model. Significance of the hypotheses was tested using the bootstrap procedure with 200 re-samples (Gil-Garcia 2008). The path coefficient between IT project complexity and perceived illegitimate power is positive and significant, and therefore, H1 is supported ( $\beta = 0.304$ ,  $t = 5.029$ ,  $p < 0.001$ ). The path coefficient between the ability to facilitate benefits and perceived illegitimate power is positive and significant, and thus, H2 is supported ( $\beta = 0.175$ ,  $t = 2.753$ ,  $p < 0.001$ ). The path coefficient between top management commitment and perceived illegitimate power is negative and significant, providing support for H3 ( $\beta = -0.197$ ,  $t = 2.494$ ,  $p < 0.05$ ). The path coefficient between formal project management and perceived illegitimate power is non-significant and thus, H4 is rejected ( $\beta = -0.058$ ,  $t = 0.826$ , ns). Overall, the PLS model explains 20.6% of the variance in the dependent variable perceived illegitimate power (Figure 3).

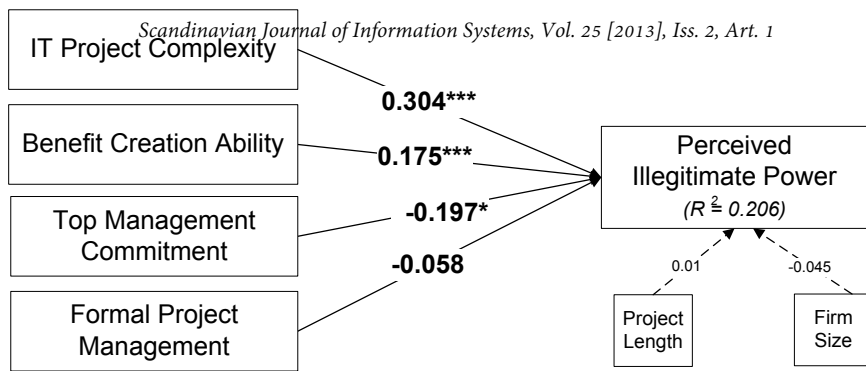


Figure 3. Results of structural model (\*:  $p < 0.05$ , \*\*\*:  $p < 0.001$ )

## 6 Discussion

This research aimed at understanding what influences IT managers to perceive that an IT project may have been initiated because of illegitimate power. Drawing on prior research on power and resistance (Joshi 1991; Lapointe and Rivard 2005), we proposed four factors as affecting perceptions of illegitimate power: IT project complexity, benefit creation ability, top management commitment, and formal project management. The results support three of the four factors; the hypothesis on the effect of formal project management on perceived illegitimate power is not significant. In the following, we discuss the results in more detail.

### 6.1 Perceptions of illegitimate power in IT projects

Complex IT projects are prone to perceptions that personal benefits are the main drivers and project initiators pursue hidden agendas. This finding is of concern as we believe that in the future the complexity of IT projects is unlikely to decrease and potentially even further increase fuelled by globalisation and increased market demands. However, we do not suggest that companies refrain from initiating complex IT projects. Our findings convey, however, that IT project complexity is an issue that needs to be considered to ensure that perceived illegitimate power is addressed.

Schrader et al. (1993) suggest that the manner in which a project is framed can influence its complexity. Highly ambitious projects with large scope and numerous IT features are difficult to understand and individuals may fill these knowledge gaps with incorrect information. If an IT manager does not understand how an IT project contributes to the organisational objectives, perceptions may surface that it provides personal benefits. Therefore, framing a project in alignment with the organisation's objectives is important. Furthermore, dividing a complex project into several smaller sub-projects for which the contribution can be clearly articulated may be another way to mitigate perceptions of illegitimate power. For example, in agile software development, the project management framework Scrum acknowledges the value of slicing a large

software development project into small development cycles—so called sprints (see for example, Baskerville et al. 2010; Rising and Janoff 2000; Schwaber 2004).

An extensive body of literature has evidenced that IT projects bring various benefits to organisations. Indeed, research has identified long lists of organisational benefits, clearly highlighting the positive implications of implementing IT in companies. Although nobody denies that IT projects provide benefits, our findings caution attributing too many benefits to one project. Instead of trying too hard to 'sell' a project, the project initiator should focus on the key benefits because these few may be easier to comprehend (Shang and Seddon 2002). If others in the firm can understand the benefits and are able to connect the IT project with the benefits, fewer perceptions may emerge that the IT project caters for personal interests. Consequently, fewer perceptions evolve that illegitimate power is at play.

The study showed that higher levels of top management commitment can reduce perceptions of illegitimate power. Endorsement of an IT project by top management has a strong influence on how a project is perceived in the organisation; it signals approval and support of the project, and indirectly requests a contribution from every employee to the project. Indeed, Liu et al. (2010) demonstrate that top management commitment increases the motivation of employees to contribute to IT projects. Apparently, in the eyes of IT managers, the high level of managerial support signals that it is unlikely that an IT project was initiated to gain personal benefits. Thus, top management commitment is crucial and senior executives need to be sensitive to the influence they can have.

Contrary to our theoretical prediction, the negative effect of formal project management on perceived illegitimate power was not significant. Our inability to support this relationship has motivated us to go back to the literature seeking other theoretical explanations. A perspective potentially able to explain the impacts of a chosen project management approach in IT projects is a control perspective (Ouchi 1977; Ouchi 1979; Ouchi 1980). In his seminal work, Ouchi (ibid) and later supported by Kirsch's writings (Kirsch 2004; Kirsch 1997) suggest that control is directed toward motivating employees to act in accordance with organisational objectives. However, control needs to be a nuanced combination of two key control modes which are formal controls and informal controls (Jaworski 1988; Kirsch 1997).

Project management that relies on documented processes, plans, and procedures can be understood as formal control. Pre-defined targets (e.g., delivery dates, adherence to budget plans) that the project team is expected to meet are examples of formal output controls (Ouchi 1979). For formal controls to be effective, command and control structures and a variety of other IT governance mechanisms (e.g., steering committees) need to be enforced (Huang et al. 2010; Xue et al. 2011). Under a formal governance approach, power holders are in charge of formal controls and little consideration is given to how these controls and their use are perceived by other organisational members (e.g., IT managers, users, developers). In fact, high levels of formality and a strict enforcement may give room for perceptions of power misuse regarding decisions of power holders and if these decisions are not understood, others may question them.

It is for this reason that the literature suggests to supplement formal control with informal modes that emphasise social dynamics and self-motivation among team members (Kirsch 1997). An extensive body of literature in the fields of new product development teams, agile IS development teams, and ERP implementation teams promotes informal modes of control as a way to achieve goal alignment (see for example, Benamati and Serva 2007; Kirsch et al. 2010;

Maruping et al. 2009). Informal control modes do not depend on written documents and utilise interpersonal relationships to motive desired organisational behaviours (Maruping et al. 2009). The interpersonal relationships create relational capital that allows for increased trust in others (Nahapiet and Ghoshal 1998), and in turn reducing distrust and perceptions of illegitimate power. Philip et al. (2007) add that 'corridor talks' and spontaneous conversations create mutual understanding of behaviours of others in the organisation, which, in turn, mitigate beliefs that a power holder acts outside structural power boundaries resulting in fewer perceptions of illegitimate power.

For example, informal project management in agile IS development is achieved through daily meetings (Vidgen and Wang 2009) in which neither formalised agendas exist nor meeting minutes are created. Thus, informal project management provides larger degrees of flexibility in planning and additionally, mandates effective cooperation and team work (Kerzner 2009). This involvement enables IT managers to obtain more comprehensive knowledge about the need for and the benefits of an IT project and thus, may result in lower perceptions of illegitimate power.

## 6.2 Contributions to theory and implications for practice

This paper contributes to the IS literature on power and resistance by identifying factors that relate to IT managers' perceptions of illegitimate power in IT projects. Prior research has focused on understanding the concept of power, why people resist IT projects, and how resistance behaviours change throughout an IT project. Our work theorises about resistance behaviour and demonstrates how beliefs on power misuse emerge in the context of IT projects. Furthermore, this paper contributes to IS research on critical success factors (i.e. top management commitment). Prior research has shown the importance of top management commitment for the success of an IT project. This study suggests that top management commitment can also mitigate perceptions of illegitimate power. Finally, contributions to research on IS benefits arise from our findings. This body of knowledge has compiled a huge repository of benefits through IT projects. Our findings caution that an overly positive presentation of benefits may negatively impact on project success.

This research also has implications for practitioners. We provide knowledge that can be useful for firms in their efforts to counterbalance perceptions of illegitimate power. We have portrayed illegitimate power as dysfunctional because personal interests are the prime driver for action; not organisational benefits (Mintzberg 1983). Thus, we conceptualised perceptions of illegitimate power as destructive for professional work environments and as something that should be prevented. Consequently, firms need to be aware that perceptions of illegitimate power are more likely to occur in complex IT project for which too many benefits are communicated. However, top management can actively decrease perceptions of illegitimate power in IT projects by demonstrating their commitment.

### 6.3 Limitations and future research

Although we are convinced that we developed sound hypotheses and used an appropriate approach to test them, we still acknowledge there are limitations of our study. First, the usage of Australian data might have introduced a cultural bias. Prior research has shown that patterns of interaction and power relationships differ across countries (Singelis and Brown 1995) and thus, our results may not be generalisable to other cultures. Second, our data collection took place at the end of 2008. We believe, however, the data are still representative for examining perceptions of illegitimate power because the factors included in our research model are still relevant and applicable for today's IT projects. For example, IT projects are still complex and so is the technology that is implemented, there is still the need to achieve benefits, and top management can still be considered an important success factor for an IT project. Third, we surveyed IT managers and used a panel vendor to gain access to the participants. IT managers possess foremost technical expertise and some business knowledge regarding IT projects (Feeny and Willcocks 1998). Yet, we believe that the participants were capable and knowledgeable survey respondents. Furthermore, we relied on self-reported data from the respondents. To address this risk, we stated in the questionnaire that the IT manager can save and return to the survey at any time if the person needs to gather further information from other stakeholders in the organisations. Fourth, our explained variance of 20.6% may be seen small, however, there is no agreement in the literature on the magnitude necessary to claim the relevant research has theoretical and practical significance. Finally, we acknowledge that the AVE for the construct of IT project complexity is marginally below the threshold; however, we believe the four items share more variance with this construct than with any other construct in our model.

The paper opens several avenues for future research in the broader area of organisational power in the context of IT projects. First, this study applied a broad definition of technochange (Markus 2004) to capture IT projects that facilitate major organisational change. Future research may want to examine the impact that different types of technochange projects have on perceptions of illegitimate power. Second, drawing on prior research (Markus 1983), we linked perceptions of illegitimate power to feelings of inequity and resistance behaviour. Empirical work regarding this link would strengthen our findings and provide additional insights into consequences of perceptions of illegitimate power. Third, we have conceptualised illegitimate power as the pursuit of personal benefits and a destructive force in the work environment (Hirschheim and Klein 1994). However, some researchers have argued that illegitimate power may also provide organisational benefits in certain situations (Silva 2007). For example, when the power holder acts outside the legitimate power boundaries to progress an IT project which is beneficial for the firm. Thus, future research could examine the formation of perceptions of illegitimate power and emergent resistance behaviour when position boundaries are crossed in the interest of the firm. Finally, a direction for future research evolves from the non-significance of the proposed relationship between formal project management and perceptions of illegitimate power. This research applied a quantitative method using a cross-sectional design for the data collection. However, research using a case study approach (Yin 2009) or a mixed method approach (Venkatesh et al. 2013) could be undertaken to gain in-depth knowledge and an improved understanding on the 'right' balance of formal and informal controls (including project management approaches).



## 7 Conclusion

Information technology (IT) projects, initiated by individuals to gain personal benefits, lead to perceptions of illegitimate power. Understanding the formation of illegitimate power perceptions is important because these perceptions can endanger the success of an IT project. This paper examined factors that contribute to IT managers' perceptions of illegitimate power. We used Lapointe and Rivard's (2005) model of resistance and in particular, their primitives of resistance object and accompanying organisational conditions to identify factors that facilitate perceptions of illegitimate power in organisations. Results of the empirical analysis show that perceived illegitimate power is impacted by IT project complexity, IT project benefit creation ability, and top management commitment, but not formal project management. This paper contributes to IS research by identifying antecedents of perceived illegitimate power.

## 8 Notes

1. An IT manager is defined as a person who occupies an IT-related position in a formal organisation, is accountable for the outputs of IT-related tasks of at least one other person or a group, gives effective leadership to that person or the group, and has formal authority over the person or the group (King et al. 2001; Shearer and Steger 1975).

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## Appendix

Panel Experts for Validation and Refinement of the Research Instrument (for further details see, Krell 2010).

	<i>Academic Panel</i>	<i>Practitioner Panel</i>
<i>Participants</i>	IS researchers (not included in any further data collection) (ten approached – six participated)	IT consultants and IT managers (not included in any further data collection) (eight approached – four participated)
<i>Expertise and knowledge</i>	Research expertise (conference and journal publications) in the areas of IS adoption, use, power, culture, and success	IT project experiences through their involvement multiple IT projects, at least three years work experience
<i>Mode of feedback</i>	Written documents and face-to-face meetings	Written documents and face-to-face meetings
<i>Instructions of feedback form</i>	Evaluate how well the whole group of questions estimates the construct: <ul style="list-style-type: none"> <li>• Scale: 1 to 7 (weak - outstanding)</li> <li>• Result: 5.6 (average across all constructs)</li> </ul>	Evaluate how easily answerable is the entire group of questions: <ul style="list-style-type: none"> <li>• Scale: 1 to 7 (difficult – very easy)</li> <li>• Result: 5.6 (average across all constructs)</li> </ul>
<i>Information included in feedback form</i>	Construct definition: <ul style="list-style-type: none"> <li>• Proposed question(s)</li> <li>• Answer scale</li> <li>• Open-end comment field</li> </ul>	Construct definition: <ul style="list-style-type: none"> <li>• Proposed question(s)</li> <li>• Answer scale</li> <li>• Open-end comment field</li> </ul>