



# The combined effects of managerial control, resource commitment, and top management support on the successful delivery of information systems projects

Narmeen Kanwal <sup>a,\*</sup>, Muhammad Shahnawaz Zafar <sup>b,1</sup>, Sajid Bashir <sup>a,\*\*</sup>

<sup>a</sup> Capital University of Science and Technology Islamabad, Pakistan

<sup>b</sup> University of Education Lahore, Pakistan

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## Abstract

Current research on information systems (IS) projects fails to comprehensively explain how these projects can achieve higher performance. This study examines the underlying conditions that result in IS project performance. We examined the role of managerial control as well as the moderating effects of resource commitment and top management support. Data were collected from 262 respondents working in various IS projects across Pakistan. The results indicate that managerial control plays a key role in the performance of IS projects. The moderating role of resource commitment was established for clan control and outcome control, while it failed to play a moderating role for behavioral control and self-control. In case of top management support, the moderation was established for outcome control and clan control while for other two dimensions of managerial control i.e. self-control and behavioral control, the moderating role was not established.

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## 1. Introduction

In recent years, there has been extensive research on information systems (IS) projects and the role of formal and informal control systems in the efficient management of IS projects (Tiwana, 2010; Cram and Brohman, 2013; Gregory et al., 2013). Despite widespread research interest in studying these two constructs, there are few studies (e.g. see Rauniar and Rawski, 2012; Marnewick, 2016; Berssaneti and Carvalho, 2015; Coombs,

2015) linking managerial control and IS project performance. This omission is serious because managerial control is considered key to project performance (Yang & Fam, 2009), and managerial control by the project manager ensures that desired standards of professionalism (Beringer, Jonas & Kock, 2013; Huang et al., 2014) and goal oriented performance are maintained within a project (Henderson and Lee, 1992; Kirsch, 1997).

The project manager is expected to reinforce common values among project employees through intrinsic motivation and self-control (Andersen and Chen, 2002; Neal et al., 2013; Huang et al., 2014) as a way of enhancing project performance (Chua et al., 2012). Therefore, it is important to know whether managerial control is a determinant of project performance. The first objective of this study is to fill this research gap. This topic is important to investigate because clients want effective control through their liaison with project teams, so it represents a way of improving project performance (Liu and Deng, 2014). The project

\* Correspondence to: N. Kanwal, House #33, Block #19, Sarwar Saheed Road Jauharabad, Khushab, Pakistan.

\*\* Correspondence to: S. Bashir, Capital University of Science and Technology, Off Islamabad Expressway, Kahuta Road, Zone-V, Islamabad, Pakistan.

E-mail addresses: [narmeenkanwal786@yahoo.com](mailto:narmeenkanwal786@yahoo.com) (N. Kanwal), [sbashir@cust.edu.pk](mailto:sbashir@cust.edu.pk) (S. Bashir).

<sup>1</sup> Address: House #362, Officers Colony Jauharabad, District Khushab.

can become more efficient and effective if client and vendor are able to establish proper components of informal control (Soh et al., 2011; Heumann&Mähring, 2015). While this relationship exists in every type of project, its implications for information systems (IS) projects are more prominent since these projects require more control (Aubry, 2015).

We posit that managerial control and its constituent components, which include behavior, outcome control, clan and self-control (Kirsch et al., 2002; Kirsch, 1997) can be applied to the operational structure of IS projects to generate creativity and discipline in the complex operations of these projects (Nidumolu and Subramani, 2003; Rustagi et al., 2008). An important objective of this study is to clarify the relationship between managerial control and project performance (Liu and Wang, 2016) as well as the moderating effects of resource commitment (Mao et al., 2016) and top management support (Ahmed et al., 2016), since the literature suggests that resource commitment and top management support are important for different phases of projects (Richey et al., 2014; Swink, 2000; Young and Jordan, 2008; Dong et al., 2009; Hermano and Martín-Cruz, 2016). However limited theoretical perspective exists in the literature as of yet that clarifies the relationships among these constructs within the field of IS projects, specifically (Hsu et al., 2011; Liu and Wang, 2016).

Since major work on managerial control addresses various contexts (Keil et al., 2013), the present research contributes to the project management literature in three ways. First, we examine the role of managerial control on project performance satisfaction, which has been widely neglected in existing research. Second, we explore the moderating effect of management support and resource commitment, thereby enriching existing knowledge of IS projects. Third, the vast majority of the IS project literature addresses developed country contexts, with the theoretical and practical implications of IS projects in developing countries like Pakistan having largely been ignored thus far. This study thus moves the field forward by analyzing IS projects in a non-US/Western context.

## 2. Theory and hypotheses

### 2.1. Managerial control and information systems projects

Effective managerial control results in favorable project outcomes (Henderson and Lee, 1992; Jackson et al., 1997) because it allows a team to combine their efforts in project operations (Piccoli and Ives, 2003). The four components of managerial control as defined in the extant literature are behavior control, outcome control, clan control and self-control (Kirsch et al., 2002; Kirsch, 1997). Studies suggest that behavior control and outcome control significantly interact with vendor performance in information systems projects (Srivastava and Teo, 2012; Liu and Wang, 2014). Informal control, clan control and self-control have also been observed to affect outcomes (Keil et al., 2013; Henry et al., 2015). In addition, basic common acquaintance specifically in IS projects (Tesch et al., 2009). Studies such as the one by Di Tullio and Staples (2013) suggest that the four components of managerial control are imperative for IS project performance. These

findings provide us with some direction for our first set of hypotheses, which suggest that.

**H1a.** Behavior control is positively associated with IS project performance.

**H1b.** Outcome control is positively associated with IS project performance.

**H1c.** Clan control is positively associated with IS project performance.

**H1d.** Self-control is positively associated with IS project performance.

### 2.2. The moderating role of resource commitment

Resources of various kinds can contribute to project performance. Studies suggest that the utilization of resources under optimal control mechanisms contributes to the ultimate performance of an entity (Snell, 1992). Under these conditions, resource commitment can be considered as a force that monitors resource distribution, ensuring the proper utilization of resources for optimal performance (Ulmer, 2000; Ripollés et al., 2012). In a recent study, Richey et al. (2014) argued that firms cannot maintain high levels of performance without a steady flow of resources. Resource commitment has a profound impact on performance (Li et al., 2011).

Due to the significance of resource commitment for the performance of an entity in general, we argue that it should also be significant for IS projects. When managerial control is applied at the same time that optimal resource commitment is ensured, the combined effect of both should enhance the performance of IS projects. Conversely, a low level of resource commitment can adversely affect project performance. This leads us to our next set of hypotheses, which suggest that:

**H2a.** Resource commitment moderates the relation between behavior control and the performance of IS projects, such that higher resource commitment strengthens the relationship.

**H2b.** Resource commitment moderates the relation between outcome control and the performance of IS projects, such that higher resource commitment strengthens the relationship.

**H3c.** Resource commitment moderates the relation between clan control and the performance of IS a project, such that higher resource commitment strengthens the relationship.

**H4d.** Resource commitment moderates the relation between self-control and the performance of IS projects, such that higher resource commitment strengthens the relationship.

### 2.3. The moderating role of top management support

The other factor we considering the present study is the potential moderating role of top management support on the relationship between managerial control and project performance. A plethora of literature supports a significant association between top management support and IS project performance

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