Antecedents, Drivers, and Success of Strategic Information Systems Planning: A Resource-Based View

Naser Khani\textsuperscript{a,b}, Khalil Md Nor\textsuperscript{c}, Mojgan Bahrami Samani\textsuperscript{d}, Hossein Hakimpoore\textsuperscript{e,f}

\textsuperscript{a} Isalamic Azad University, Najafabad Branch, 851443131 Daneshgah boulevard, Najafabad, Iran. 
\textsuperscript{b} Universiti Teknologi Malaysia, 81300 Skudai, Johor, Malaysia. 
\textsuperscript{c} Isalamic Azad University, Birjand Branch, End of Ghaffari boulevard, Birjand, Iran.

Abstract

Strategic information system planning (SISP) is a long-standing issue for both scholars and practitioners. Although many studies have been done on SISP success, firms still face with SISP failure. Reviewing previous SISP literature shows that organizational aspects have been neglected in SISP studies. Therefore, this study attempts to fulfill this gap by proposing a conceptual model for SISP success. Using Resource Based View (RBV) as underlying theory, in this paper, we investigated the firm-wide IS capabilities as drivers (i.e. organizational factors) of SISP success. Six firm-wide IS capabilities were identified that are internal and external IS relationships capability, IS knowledge and skills capability, IS planning and change management capability, IS-business integration capability, and IS infrastructure capability. Furthermore, we hypothesized that top management support and formalization are antecedents of SISP success. Generally, the contribution of this study is developing a comprehensive and theory-based model for SISP success in terms of its antecedents and drivers.

Keywords: strategic information systems planning, IS capabilities, antecedents, drivers.

1. Introduction

Strategic Information System Planning (SISP) is the identification of a bundle of computer-based functions that will aid a firm in recognizing its business goals and accomplishing its business plans [1]. The literature review showed that SISP evolution started from a technological focus toward a process focusing on reciprocal relationship with firms’ strategy and even setting business strategy and leading organizational change and design [2]. During the past decade, researchers have proposed many models for the SISP success. Likewise, recently, as organizations heavily rely on information systems for competitive advantage and performance improvement, the executives realized the significance of SISP as well.

However, despite of its potential benefits, the number of successful SISPs is shown to be noticeably low. Consequently, studying SISP success has attracted scholars’ attention. Besides, SISP failures review
indicated that most of those failures stem from little attention to organizational attributes of SISP [3]. Therefore, one of the paths to improve SISP success is to identify what organizational practices that could enhance the probability of SISP success. Moreover, based on research conducted on SISP success, it revealed that there are frequent calls for studying the interrelationships between organizational aspects and SISP success [4], [5]. Nevertheless, research focused on the relationship between firm-wide organizational aspects and SISP success is rather limited [5]. Hence, there is room for both theory and practice to study SISP success by doing a comprehensive empirical study. The present study tries to fulfill this need. Therefore, the main objective of this study is to review and extend the literature and propose empirical testing of the theoretical framework for SISP success.

2. Literature review

These evolution, failures, and previous researches lead the researchers to two important conclusions. First, the best SISP is conducted in a manner that better fits the organization attributes (e.g. culture, structure, style and capabilities). Second, based on the importance of organizational aspects, research on SISP’s organizational constructs can enhance the extent of SISP knowledge.

Reviewing previous frameworks/models on SISP success showed that some studies have utilized a wide perspective such as SISP prescription, critical success factors [1], [6], [7] while others have used a narrow perspective of some organizational constructs such as inter-group interactions, organizational commitment [8], [9], [10]. It can be concluded that there is no consensus on a common set of organizational constructs for SISP success.

Moreover, the evidence from previous studies indicated that research focused on the relationship between firm-wide organizational aspects and SISP success is limited. The most weakness of these studies was that they did not perceive organization as a bundle of activities, resources, assets, and processes. In summary, there is not any comprehensive study of organizational side of the SISP success. Researchers believe that resource-based view of the firm (RBV) can better fill this gap by considering the firm as a set of resources and capabilities. In last decades, the RBV theory has gained increasing dominance in the strategic management field and views organization as a bundle of resources [11]. One of the main concepts introduced by RBV perspective in IS field is IS capability [12]. IS capability is a complex group of IT-related resources, knowledge and skills practiced through organizational processes and empower the firm to utilize IS/IT assets for desired objectives [13].

Generally, particular literature on the relationship between IS capability and SISP success is scarce. Since there was not any established model for organizational capabilities needed for SISP success, a review of the related literature was conducted to identify the capability constructs related to SISP success. Therefore, the researcher investigated the existing SISP success predictors. Based on previous studies, a general list of more than 100 SISP success predictors extracted from the literature. Most of the predictors were related to the “planning dimension” of SISP success and “change management”. Other predictors were related to the “infrastructure” aspects of SISP. Then, “knowledge and skills”, “IS-business strategic integration”, “IS internal relationship and IS external relationship” were other major groups. Acknowledging the complexity of both SISP success and IS capability constructs, the researchers conceptualized a multidimensional IS capability framework for SISP success.

3. Research model and hypothesis development

Based on RBV theory, IS capabilities are emerged when IS and non-IS resources, and assets are combined together through business roles, processes, and structure [12]. The firm-wide IS capability
concept is a combination of several single IS capabilities. Conducting a literature review and integration, a combination of six single IS capabilities were revealed that forms the firm-wide IS capability for the entire organization in order to be successful in SISP. Those single IS capabilities are “IS external relationship”, “IS internal relationship”, “IS technical knowledge and skills”, “IS planning and change management”, “IS-business integration”, “IS management capabilities”. Moreover, according to the literature reviewed, we included top management support and formalization as antecedents of firm-wide IS capabilities. Therefore, the research model is presented as follow (Figure 1):

![Figure 1: Proposed research model for SISP success]

The research model conceptualizes the relationship between top management support and formalization (i.e. antecedents), IS capabilities (i.e. drivers) and success of SISP. Based on previous research, SISP success is considered as “objective fulfillment” and “planning improvement”. Following paragraphs present hypotheses in this study.

**SISP success:** Measuring SISP success has attracted many researchers’ attention [14]. Generally, previous studies in SISP field have used “objectives fulfilment” and “planning improvement” as dimensions of SISP success. These two dimensions have widely been used in different SISP research (e.g. [15], [16], [1]) and therefore are considered proper constructs for measuring SISP success.

**IS External Relationships Capability:** This capability comprises collaborating with external suppliers and managing the relationships with other organizations to deliver high value IS resources [17], [18]. When a firm has the ability to capture external consultants’ knowledge, it is more likely for it to activate its abilities [19]. Developing this capability leads to utilizing IS in a competitive way in which competitors’ ISs will be well monitored and external opportunities will be assessed properly; thus it is an important element of SISP success [1], [6], [8]. Accordingly, the first hypothesis is presented:
H1a, b: “IS external relationships capability” has a strong positive relationship with (a) SISP objectives fulfilment and (b) SISP planning improvement.

**IS Internal Relationship Capability:** This capability is the capacity of firm to build constructive internal relationships between IS users and IS providers to increase positive interactions in IS department and among firm’s departments. In SISP literature, researchers have shown the importance of joint vision [1], good relationships between IS users and IS providers [7], intercommunication [3], and good CIO-CEO relations [8]. These collaborations enhance trust and respect in organization and amongst team members and therefore facilitate knowledge flow among members. Therefore, the second hypothesis is proposed:

H2a, b: “IS internal relationships capability” has a strong positive relationship with (a) SISP objectives fulfilment and (b) SISP planning improvement.

**IS technical knowledge and skills capability:** This capability is the ability of organizations to ensure that IS employees have and deploy IS knowledge [20] and are familiar enough with business knowledge. Moreover this capability also considers the sufficiency of IS knowledge of business employees. The SISP researchers have shown the significance of IS experience and expertise of staff and educated and competent team members [9], [7], [6], [3]. Accordingly, one of the important issues in SISP is related to the quality, education, and the skills of firm’s members. Hence, the next hypothesis is proposed:

H3a, b: “IS internal relationships capability” has a strong positive relationship with (a) SISP objectives fulfilment and (b) SISP planning improvement.

**IS planning and change management capability:** This capability is the organization’s ability to forecast future growth and changes, understanding business situations, and ability to manage IS change [17], [20], [21]. In SISP literature, researchers have shown the importance of predefining objectives, determining the necessity of planning; controlling the planning process, determining planning team with all responsibilities, plan implementation, and reviewing plan recommendation [7], [3], [6], [10], [9]. Since without capability in IS planning and change management executing all these tasks is not possible, the following hypothesis is presented:

H4a, b: “IS planning and change management capability” has a strong positive relationship with (a) SISP objectives fulfilment and (b) SISP planning improvement.

**IS-business integration capability:** This capability is referring to the ability to produce a shared vision between IS and business in terms of enabling process integration and dynamic strategic alignment [22], [18], both IS and top managers’ involvement in firm’s strategic planning [17], and IS-business consulting and mutual understanding [20]. As Hisham and Ariza [23]clarified, IS-business integration has a very strong effect on SISP success. By integrating IS and business, a mutual understanding and common vision will be provided between IS and businesses members and finally will result in SISP success. Therefore, the related hypothesis is as follow:

H5a, b: “IS-business integration capability” has a strong positive relationship with (a) SISP objectives fulfilment and (b) SISP planning improvement.

**IS infrastructure management capability:** This capability is the ability of organizations to offer a flexible IT infrastructure for supporting current and future activities of the firms [24] in which the focus is on technical components efficiency and effectiveness [25]. This capability empowers firms to not only
provide necessary physical requirements, but also enable them to manage those infrastructures properly. Such capability enhances flexibility [26] and thus supports SISP success. Therefore, the related hypothesis is as follow:

**H6a, b:** “IS infrastructure capability” has a strong positive relationship with (a) SISP objectives fulfilment and (b) SISP planning improvement.

**Top management support and commitment:** The support of senior management is one of the key indicators of SISP success. This support depends upon his or her perceived strategic value of information systems, his or her business acumen and his or her awareness of opportunities embedded in IS functions for business [27]. Top management support is measured by CEO involvement in IS planning, his or her perception of IS activities, and business plan (BP) and IS plan (ISP) alignment [27]. Top management commitment and support is well established in the IS literature. Simply stated, with top management commitment, support, and guidance, IS/IT capabilities can perform better in order to achieve firm’s goals e.g. SISP success [20]. Thus, we considered top management as an antecedent for SISP success. Therefore, the next hypothesis is:

**H7a, b:** Top management support has a strong positive relationship with organizational IS capabilities.

**Formalization:** This variable is the extent to which a firm uses procedures and rules to determine behaviour [28]. Formalization enables firms to clarify their business objectives and also will increase effectiveness of IS planning [29]. Especially, lack of formal plans causes organizational difficulties in terms of objective identification and nurturing required capabilities. Generally, formalization increases the quality of SISP through task coordination and regular communication [30]. Previous studies’ findings indicated that a formal culture is more likely to result in SISP success [31]. Likewise, it might enhance organizational IS capability factors as drivers of SISP success. Thus, the next hypothesis is:

**H8a, b:** Formalization has a strong positive relationship with organizational IS capabilities.

4. **Conclusion and contributions**

Based on frequent calls for studying the interrelationships between organizational aspects and SISP success, IS capabilities have been used to reshape the SISP success. Generally, IS capability has been interpreted to have the ability to influence organizational success. As a firm-wide multidimensional construct, IS capability is related to the ability of an organization to provide sustainable competitive advantage. Utilizing one of the most prevalent theories, RBV theory, this research hypothesizes that a successful SISP requires certain IS capabilities to be present in firms. Those IS capabilities are “IS external relationship”, “IS internal relationship”, “IS technical knowledge and skills”, “IS planning and change management”, “IS-business integration”, “IS infrastructure management” capabilities. Furthermore, considering those capabilities as SISP success drivers, we proposed top management support and formalization as antecedents of SISP success. Finally, the research requires empirical examination of abovementioned relationships.

References


