Chapter 6
Business Intelligence Implementation Critical Success Factors

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ABSTRACT

Many organizations take business intelligence (BI) systems to improve their decision-making processes. Although many organizations have adopted BI systems, not all of these implementations have been successful. This chapter seeks to identify critical success factors (CSFs) that impact on the successful implementation of BI systems in organizations. So, at first, through literature review, 26 CSFs were identified. Following that, a questionnaire was developed and then filled out by domain experts who had at least three years of experience in BI implementation projects. Robust exploratory factor analysis (EFA) was run for data analysis, which finally classified 26 CSFs into four distinct groups termed as "organizational," "human," "project management," and "technical." The results of this study provide a very useful reference for scholars and managers to identify the relevant issues of BI projects in Iran.

INTRODUCTION

For future enterprises must compete in all aspects, the need to generate, collect and transform their data into actionable knowledge would be sensed more than ever (Delen & Demirkan, 2013). Therefore, almost all enterprises are involved in the process of adopting decision support systems to exploit data, return information more agile and better, and also improve analytical capabilities as a new valence for their services (Delen & Demirkan, 2013; Martins, Oliveira, & Popovič, 2013; Rouhani & Ravasan, 2014). Thus, the theme "business intelligence (BI)" is introduced as a response to current needs of businesses and consequently to solve managerial decision- making issues (Petrini & Pozzebon, 2009). Rather than having a unique and generally accepted definition, BI is typically used as an 'umbrella' term to describe

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a process, or concepts and methods that improve decision making by using fact-based support systems. Many terms such as "*business intelligence*", "*business analytics*", "*big data*", "*data mining*", and "*data warehousing*" are often used interchangeably in the literature. Rouhani and Zare ravasan (2015) proposed a taxonomy for BI definitions approaches as managerial, technical, and system enabler main categories. BI has evolved because the amount of data generated through the internet and smart devices has grown exponentially altering how organizations and individuals use information(Larson & Chang, 2016). Regarding decision-support, BI intends to equip stakeholders with valuable information on decision-making process through data integration and analytical capabilities (Popovič, Hackney, Coelho, & Jaklič, 2012). Many analysts posit BI as the number one IT investment and the top-most priority for most chief information officers (CIOs) (Ishikiriyama, Miro, & Gomes, 2015; Işık, Jones, & Sidorova, 2012; Rouhani, Ashrafi, Zare, & Afshari, 2016; Wieder & Ossimitz, 2015; B. Wixom & Watson, 2010). By considering the top management concerns, it is not astonishing that BI has settled on the head of IT developments in recent years (Howson, 2008; Luftman & Ben-Zvi, 2010). One assumption is that it is becoming more pervasive within organizations and is affecting the way information is used, analyzed and applied. As a result, enterprises can lead, decide, measure, manage and optimize their performance to obtain superior efficiency and derive financial benefits (Hostmann, Rayner, & Friedman, 2006).

However, Rasmussen, Goldy, and Solli (2002) declared that the cost of buying and implementing BI software could vary from 50 thousand dollars to millions. Sahay and Ranjan (2008) and Ramamurthy, Sen, and Sinha (2008) also cited the tremendous cost of BI implementation in the organizational environment. Nonetheless, many organizations have invested significantly in BI systems to help them gain better information processing and make the best business decisions, but have seen only limited success in getting their business users to adopt them (Ocampo & MCSD, 2007). In a similar vein, Gartner revealed that more than 50 percent of BI projects have been accepted on a limited basis or have failed. There is anecdotal evidence that a significant number of companies have been unable to realize the expected benefits of BI and they sometimes even consider the BI initiative as a failure in itself (Chenoweth, Corral, & Demirkan, 2006; M. I. Hwang & Xu, 2005; Johnson, 2004). The Gartner group also warned that more than half of the Global 2000 enterprises would fail to realize the capabilities of BI and, hence, would lose market share to companies that could successfully apply BI systems (Dresner H. J., 2002). A survey of 142 companies, found that 41 percent of the respondents had experienced at least one BI project failure and only 15 percent of respondents believed that their BI initiative was a significant success (Hawking & Sellitto, 2010). Moss and Atre (2003) indicated that 60% of BI projects failed due to inadequate planning, poor project management, undelivered business requirements and so on.

While the goal of BI has been to facilitate business analytics, increase revenue and competitiveness, it can impose substantial costs for given enterprises. Hence, it indicates that adopting these systems should also be considered with caution by organizations from different aspects. Besides, it is evident that occurrence of an inconsistency and inappropriate assessment about influencing factors during the implementation process can lead projects into failure.

Despite its importance and aforementioned high failure rate, few studies have investigated the success or failure critical factors in the implementation of these systems (Jagielska, Darke, & Zagari, 2003). Therefore, empirical research is needed to shed more light on those CSFs influencing the implementation of BI systems. An understanding of the CSFs enables BI stakeholders to optimize their scarce resources and efforts by focusing on those significant factors that are most likely to aid successful system implementation (Yeoh & Koronios, 2010). Because the rate of BI systems implementation is raising in Iran and these projects, by their nature, are associated with a high failure rate, so it is of crucial impor-