A Success Assessment Model for BI Tools Implementation: An Empirical Study of Banking Industry

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ABSTRACT

In today’s rapidly-changing business environment, the need for useful business analytics is vital for organizations, not only to succeed, but also to survive. Traditional enterprise systems have disabilities to meet the expectations of organizational decision makers in the competitive area. In this regard, it is necessary to evaluate the success of BI tools in organizations, and there is a need to provide a model for this assessment. Hence, in this study, a model for assessing the success of business intelligence is presented by identifying and introducing the most important and effective factors in evaluating the success of BI tools. This study is an applied study in terms of purpose and a survey-descriptive, empirical study in terms of methodology. According to statistical methods, importance of the success factors was evaluated and the results show that 24 factors were identified consequential in research model based on four areas such as organizational memory, information integration, knowledge creation, and presentation.

KEYWORDS
Business Intelligence, Implementation, Success Assessment, Tools

1. INTRODUCTION

A major issue in many firms was the integration of data and processes from these heterogeneous systems and organizational diversity applications. This lack of integration resulted in data congestion, poor data quality, inconsistent data definitions and formats, disjointed and poorly defined business processes, and poor information access due to a diversity of user interface designs, lack of knowledge and inadequate reports. The lack of integration hindered business process execution and effective decision making (Hawking & Sellitto, 2010).

Business Intelligence (BI) solutions have made a top priority of IT executives in organizations who implemented these solutions for several years and the market for related software products continues growing rapidly (Ishikiriyama, Miro, & Gomes, 2015; Rouhani, Ashrafi, Zare, & Afshari, 2016; Wieder & Ossimitz, 2015). An early study by IDC (1996) found that companies that used BI effectively could achieve an average of 401 percent return on investment (ROI) over a three-year period. In a Cutter Consortium Report (2003) survey of 142 companies, it was found that 70 percent of the respondents had implemented data warehousing and BI initiatives (Herzum, 2003). Gartner (2009), a leading information technology research and advisory company, conducted a worldwide survey of 1,500 Chief Information Officers and identified the BI area as a number one technology priority. According to Gartner Inc., BI platforms allow companies to develop BI applications that offer three

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categories of functionalities: “analysis (OLAP\textsuperscript{1}), information delivery (reports and dashboards), and platform integration (BI metadata management and a development environment)” (Tutunea, 2015).

Although BI has the potential to improve the performance of a company, a review of the literature indicated that a significant number of companies often failed to realize the expected benefits of BI and sometimes considered a BI project as a failure in itself (Chenoweth, Corral, & Demirkan, 2006; Hwang & Xu, 2005; Johnson, 2004). Gartner predicted that more than half of 2000 Global enterprises would fail to realize the capabilities of BI and would subsequently relinquish market share to companies that had leveraged BI (Dresner et al., 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 major success (Hawking & Sellitto, 2010).

However, considering the studies conducted, so far little has been done in order to study and explain dimensions and factors of success evaluation of these systems and no systematic studies have been carried out about the success evaluation of business intelligence tools after implementation with a focus on banking area and their application scope. Moreover, it is essential to evaluate the success of these systems in organizations and it is highly important to present a model to deal with the evaluation. Thus, this study attempts to identify and study the factors affecting the efficacy measurement and business intelligence success tools after implementation in banks as one of the best organizations to implement the system due to the sensitivity of the data in the market competitive atmosphere and the wide variety of available information systems.

Accordingly, the main question of the study is raised: “What is the proper model to evaluate the success of business intelligence tools in the banking system?” This study aims to come up with an answer to this question so that an efficient model to assess the success of business intelligence tools in the banking system in particular is obtained by identifying and presenting the most significant and effective factors in the success evaluation of these systems. To respond the research question, statistical analysis were used, divided into parametric tests and non-parametric tests. In order to analyze the data, this study has applied non-parametric statistical tests such as Kolmogorov-Smirnov and Binomial for variables with abnormal distribution, and t-student parametric statistical test for variables with normal distribution. The Friedman test was used to evaluate the significance and ranking of success factors in any areas related to business intelligence tools.

This research was carried out to find answers to the above question and to provide a model for efficient decision support by evaluating the intelligence of business systems. The rest of this paper is organized as: Section 2 consists of a theory background of BI definitions and classification of BI tools with definition for each group. Section 3 includes a wide-ranging literature review about BI and decision-support, data mining and data warehouse criteria to evaluate success of BI tools. Section 4 discusses the research methodology. Section 5 describes the empirical results and an analysis in order to rank the factors involved in the success evaluation of business intelligence tools. A model “success evaluation of BI tools in banking industry” developed to evaluate success of BI tools used in banks, based on the 24 corresponding factors, is demonstrated in Section 6. Finally, Section 7 concludes the research work and its main results and limitations, gives suggestions for implementing BI tools in organizations, and proposes directions for future research.

2. BACKGROUND

Business intelligence is a collection of abilities, technologies, tools and solutions helping managers to understand business conditions. Such systems as business intelligence aim to use the raw data available in organizations effectively to introduce approaches of the past, present and future conditions and to reduce the gap between junior and senior managers from information communication viewpoint. Using the whole data available in organizations (systematic and non-systematic), these systems produce and provide appropriate information properly for right individuals at the right time. Business intelligence means to have better insight into operations and comprehensive knowledge of such
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