Determinants of Self-Service Analytics Adoption Intention: The Effect of Task-Technology Fit, Compatibility, and User Empowerment

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ABSTRACT

The increasing popularity of self-service analytics (SSA) is empowering business users to analyze data and generate actionable insights autonomously. While there are many benefits to SSA tools, there is a scarcity of research on the factors influencing their adoption in business organizations. This article presents an extended technology acceptance model (TAM) that incorporates the task-technology fit (TTF), compatibility, and user empowerment as critical antecedents of users’ intention to adopt SSA tools for reporting and analytics tasks. To test the proposed model, data were collected through a questionnaire survey of 211 business users working in different industries in Jordan. The collected data were analysed using structural equation modeling (SEM). The results of this study demonstrate that the task-technology fit, compatibility, and user empowerment are significant predictors of users’ perceptions of usefulness and ease of use of SSA tools. Both of perceived usefulness and perceived ease of use have a positive effect on users’ intention to adopt SSA tools. Collectively, all these factors account for 51.6 percent of the variance in the behavioral intention. The findings of this study provide several key implications for research and practice, and thus should contribute to the design and adoption of more user-accepted SSA tools and applications.

KEYWORDS

Business Organisation, Compatibility, Decision Support, Self-Service Analytics, Task-Technology Fit, Technology Acceptance Model, User Empowerment

INTRODUCTION

In today’s business environment, business users are demanding more control and faster access to business data and analytics in order to gain actionable insights and make more informed decisions (Daradkeh & Al-Dwairi, 2017). Conversely, IT organizations are unable to respond fast enough to support the constantly changing needs of business users (Schlesinger & Rahman, 2016). Due to the increasing demand for information and analytics coupled with fast-growing data volumes, the business intelligence and analytics technology has undergone a dramatic change over the last few years. It has evolved from a highly governed and IT-centric process towards a self-service and decentralized...
process empowering business users with self-service reporting and analytics capabilities (Alpar & Schulz, 2016).

Self-service analytics (SSA) has emerged as a new paradigm of business intelligence and analytics that enables business users, including those with limited analytical skills, to become more self-reliant and less dependent on the IT professionals (Aspin, 2014). It offers an environment in which business users can access, analyze, and glean actionable insights from business data, without direct intervention of IT department (Burke, Simpson, & Staples, 2016). Such environment can expand the reach and scope of reporting and analytics applications to address a broader range of business problems and opportunities. This expansion must support the needs of business users for personalized and collaborative decision-making and information sharing (Clarke, Tyrrell, & Nagle, 2016). It also enables organizations to build analytics-driven culture; giving them a competitive advantage over their rivals. At the same time, technical IT teams will be liberated from the constant barrage of reporting and analytics demands of business users, so that can focus their efforts on more strategic business initiatives (Sharda, Delen, Turban, Aronson, & Liang, 2015).

Recent years have witnessed an increasing adoption of SSA tools in business organizations. According to a recent survey by Logi Analytics (2017), about 66 percent of organizations have started to implement or have already implemented SSA solutions. SSA is becoming a top priority for organizations of all sizes– from global enterprises to early-stage startups– as governed data becomes more accessible and cloud technology enables easy sharing (Alpar & Schulz, 2016). Gartner predicts that by 2020, SSA platforms will make up 80 percent of all enterprise reporting and analytics (Dinsmore, 2016). Consequently, most business users and analysts in organizations will be able to access SSA platforms to prepare, integrate, curate, and model data for reporting and analytics tasks.

In response to the growing demand for SSA tools, many reporting and analytics vendors such as Tableau Software, Microsoft, Tibco Spotfire, and QlikTech have been broadening their portfolios to offer a wide range of tools with user-friendly user interfaces that promise to deliver advanced reporting and analytics capabilities such as visualization, dashboards, scorecards, OLAP multidimensional analysis, predictive analysis and statistical modeling (Sharda et al., 2015). These capabilities empower business users to harness data to improve decision-making; and further to increase the productivity and agility of organizations (Weber, 2013).

While SSA offers many benefits to empower business users and organizations, the praxis shows that the success attained from adopting SSA tools is still questionable. The organizations do not achieve the appropriate benefits from SSA deployment (Alpar & Schulz, 2016; Meyers, 2014). Also, organizations are still facing difficulties in establishing a SSA environment among business users. A study by Eckerson (2012) reported that about 64 percent of SSA initiatives are rated as having achieved only an “average” or lower level of success by business analytics professionals. Another study by Logi Analytics (2015) also showed that while 91 percent of business users agree that SSA tools are essential, the adoption of these tools remains stagnant, with less than a quarter of business users (22 percent) reporting that they are satisfied with SSA initiatives in their organizations. Prior studies reported that the implementation of many SSA applications failed due to technological, organizational, cultural, and infrastructural issues (Abelló, Darmont, Etcheverry, Golfarelli, Mazón, Naumann, Pedersen, Rizzi, Trujillo, Vassiliadis, & Vossen, 2013; Clarke et al., 2016; Dinsmore, 2016). Many organizations are not able to make SSA an effective tool for decision-making and creating a competitive advantage. The reasons for this failure are not clear and still not well investigated. Therefore, the need for a systematic and deliberate study of SSA adoption in business organizations is crucial.

The main purpose of this study is to explore the factors that affect business users to successfully and effectively adopt SSA tools in the workplace. To this end, this study presents an integrated model that is developed based on extending the technology acceptance model (TAM) (Davis, 1989), and incorporating three critical factors; namely, the task-technology fit (TTF) (Strong, Dishaw, & Bandy, 2006), compatibility (Karahanna, Agarwal, & Angst, 2006; Rogers, 2003) and user empowerment (Alpar & Schulz, 2016; Munjin, 2013) as antecedents of users’ beliefs towards intention to adopt SSA
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