

# ENTERPRISE RESOURCE PLANNING AND BUSINESS MODEL INNOVATION: PROCESS, EVOLUTION AND OUTCOME

## Abstract

**Purpose** – This study focuses on the implementation process of enterprise resource planning (ERP), the evolution of business model innovation (BMI) and the organizational outcome. This research analyses how ERP and business model innovation are related and in turn what is the final the impact on organizational performance.

**Design/Methodology/approach** – The sample consisted on 104 organizations from different industries, all of them used an ERP software. Structural Equation model was used to test the six hypothesis.

**Findings** – The results indicate that the BMI constructs considered (i.e. value-generation and organizational complexity) mediate the impact of the ERP constructs (organizational adaptation and organizational resistance), in organizational performance. Successful ERP implementation is not an end itself for this companies, but merely, a path and a process for improving the business model with the aim improving performance in the marketplace.

**Research limitations/implications** –This study offers a new outlook on how a company should leverage the ERP adaptation, and any resistance in the organization to innovating in the business model. This study is rooted in the evolutionary perspective of BMI but it also integrates into an overall model other points of view such as the rational positioning view and cognitive view.

**Managerial Implications** – Organizations must understand the ERP flows in depth, each ERP flow is the work result of a multitude of companies over several years. All departments, and in particular the research and development (R&D) department must participate actively in the ERP implementation. Organised complexity means opportunities for success in the market. Organizations must train their departments in ERP and not just teach them how the ERP works. ERP implementation needs consider improvements to the business model and ultimately the performance, but not separately.

**Originality/Value** –Business model innovation has received contributions from several domains such as entrepreneurship, management organization and strategic management among others. Nonetheless, the role of ERP in business model innovation is far from being understood and the few contributions focus only on technology per se. To the best of our knowledge this is the first study that has explored the connections of ERP and BMI and in turn the final outcome in organizational performance.

**Keywords:** enterprise resource planning, business model innovation, organizational performance

## 1. INTRODUCTION

Business model innovation (BMI) has received a great deal of attention lately across a broad spectrum of literature ranging from entrepreneurship to strategic management (Foss and Saebi, 2017). Since the initial contribution of Bellman et al. (1957), researchers have been struggling to find a suitable definition of BMI (Clauss, 2017), and to determine the different dimensions that define the logic of BMI (Spieth and Schneider, 2016) in order to obtain an appropriate measure (Massa et al. 2017). Nowadays, most companies that perform successfully in the market indicate BMI as the key element in achieving its goals. Sorescu et al. (2011: p. 4) define a business model in the following manner: “...a well-specified system of interdependent structures, activities, and processes that serves as a firm’s organizing logic for value creation (for its customers) and value appropriation (for itself and its partners).”

However, apart from conceptual considerations, few studies analyse in depth the drivers that explain the evolution of a business model (Lambert and Davidson, 2013) or relationships with other variables inside the organization (Cortimiglia et al., 2016). In line with this argument, Foss and Saebi (2017) question whether the business model is the outcome of a specific design exercise and consider the real impact of an innovation improvement in the business model. Thus, antecedent and outcomes of BMI require further research and explanation.

First of all, it is essential to understand how a company transforms or adapts its resources to innovation through a business model. A business model, considered as the underlying logic of the firm (Teece, 2010), describes how a company organizes its different components to achieve its business goals (Massa et al., 2017). The idea behind business models focusses on how to articulate structures, activities and process inside the organization that match the firm’s strategy. In this context, business model experimentation (Baden-Fuller and Morgan, 2010) is crucial to understanding how to deal with new organizational configurations. This evolutionary perspective of BMI (Martins et al., 2015) explains how managers adapt their business models to a new competitive situation.

Business models have several components (Taran et al., 2015) and can be defined as a complex set of elements and linkage mechanisms (Chessbrough, 2010). Surprisingly, organizational complexity has received scarce attention in the literature, although the interdependencies and coordination among business components, as well as the number of activities, are essential for corporate strategy decisions (Snihur and Tarzijan, 2018). The objective of any firm is to evaluate the specific combination of elements that could enhance organizational outcomes in the market (Chamberlin et al., 2010). Similarly, according to Clauss (2017), there are three main dimensions of value which explain a firm’s business model: value creation, value proposition and value capture. Specifically, value capture defines how value generates revenue to ensure sustainable performance. As with organizational complexity, value generation through business models has received limited attention in the literature (Osterwalder and Pigneur, 2010). In summary, for a business model to succeed in the market, any company needs to leverage both value-generation (Johnson et al. 2008), and the complexity that these changes entail (Christensen and Raynor, 2003). If such an ideal BMI configuration is achieved, there will be a more reliable contribution to corporate performance and the firm will be more competitive in the market (Zott and Amit, 2008).

BMI is a corporate challenge associated mainly with the exponential increase of data volume. The need for organizations to manage the quantity of information appropriately drives them to implement information systems across corporate areas. A software that has the capability to

connect the information needs in different organizational areas is known as Enterprise Resource Planning (ERP).

ERP is an advanced software solution according to Acar et al. (2017; p 704) who describe it as follows: “...ERP is a crucial information system/technology tool for corporations to manage... processes by means of identifying, capturing, integrating and storing the flow of data information created by means of executing their business transactions, with both entities inside and outside of the firm. Essentially, achieving integration and coordination among departments within the firm as well with as vendors and contractors outside the firm...”.

Studies on ERP reveal the importance of IT and in particular the software currently identified as ERP for organizational competitiveness in business markets. Acar et al. (2017, p. 707) state that: “...ERP satisfies competitive advantage through crucial information, which is produced, shared, and managed...”. Although the use of ERP is essential to many companies around the world (Koch, 1996), the implementation process is often so complex that it can cause an organization to fail in the implementation through wasting both time and resources.

Most companies are nowadays engaged in business changes that are initiated by the use of new technologies. New information technologies have the potential to transform organizational processes and in turn the performance of the firm (Lia and Hsia, 2011). Previous studies have devoted particular attention to how technology could be useful for configuring or innovating in a business model (Mohnen and Hall, 2013).

This stream of research has focussed on how different technology tools and systems can be integrated into the business model (Mason and Spring, 2010). The aim is to adapt technological changes to business model innovation (Martins et al. 2015) and to consider the multi-level implications that this technology could have for the organization as a whole (Chesbrough and Rosenbloom, 2002). However, technology has several dimensions that need to be balanced, one of which is related to how information technologies such as ERP should be implemented inside the organization.

Academics have either focused on BMI (Amit and Zott, 2012; Chesbrough, 2010) or ERP implementation (Acar et al., 2017; Hong and Kim, 2002) in organizations, but to the best of our knowledge, there are few or even no previous studies on the link between ERP and BMI. In particular, not all different dimensions that define the logic of BMI have been identified (Spieth and Schneider, 2016) and the great importance of the ERP on BMI has not been accounted for in academia. Acar et al. (2017) stated: the ERP is the software tool which can appropriately manage the “interdependent structures, activities, and processes that serves as a firm’s organizing logic for value creation and value appropriation”, which is precisely the definition of a Business Model in Sorescu et al.’s (2011: p. 4) words. Therefore, the aim of this study is to clarify this gap, treating ERP as a process that relates to the evolution of BMI, as shown in Figure 1, that ultimately influences the outcome of ERP and BMI. This study focuses on how two of the ERP process factors (organizational adaptation and organizational resistance) could influence both the business model evolution (organizational value-generation and organizational complexity) and organization performance as a whole. The dimensions selected were those considered more appropriated to the aim of this study. Consequently, the research objective is to examine the outcome ERP/BMI through the process of ERP and the evolution of BMI.

Insert Figure 1 about here.

We examine the ERP-process through the constructs of organizational adaptation (Chen et al., 2009) and organizational resistance (Hong and Kim, 2002), and the evolution of BMI through the constructs of organizational value-generation (Achtenhagen et al., 2013) and organizational complexity (Ashmos et al., 2000), all of which relate to the outcome of organizational performance (Hammer and Champy, 1993). We elaborate the hypothesized relationships between the constructs of ERP and BMI in the sections that follow.

The remainder of the manuscript is organized as follows. First, the literature on the main concepts is reviewed, and the main concepts of the proposed model defined. Following this, the hypotheses are presented. Next, the methodology section describes the main steps in testing the proposed model. A careful analysis of potential bias and reliability are explained, and, finally, the results are commented on as well as the implications for both academics and managers.

## **2. THEORETICAL BACKGROUND**

### **2.1. Enterprise Resource Planning (ERP)**

In the present digital era, technology has been leading business for more than three decades. The new information technologies (IT) have started a process that offers new opportunities across different industries. The changes that technology can promote have been studied for quite some time. For example, Brynjolfsson and Hitt (2000, p.23) review: “...*the evidence on how investments in information technology are linked to higher productivity and organizational transformation...*”.

Others such as Rapp et al. (2012) focus their research on how technology can lead to changes in organizational structure. Mathieson and Keil, (1998), Johnson and Bharadwaj (2005) and Román y Rodríguez (2015) study the improvement in organizational efficiency and performance achieved through the use of technology. Davenport et al. (2004) state that IT increases the agility of business to make decisions through fluency in communication, Nazir and Pinsonneault (2012) put emphasis on enabling information integration. Sambamurthy et al. (2003) focus on offering digital alternatives and Román et al. (2018) examine the effects of mobile technology use on salesforce.

Prahalad (2009) as well as Seethamraju and Sundar (2013) contend that a critical business capability is organizational adaption to dynamic business environments, volatile customer needs, emerging business opportunities and market threats. Bhatt (2001) states that the organizational business skills with which the organization identify, organize and use in terms of available information have become the main determinant of competitive advantage.

Previous research highlights the value of technology to organizations and in particular the value of ERP software in treating information that leads to a competitive advantage for organizations in the marketplace (Kalling, 2003). However, the ERP implementation process is complicated and authors such as Sun et al., (2015; p.40) that report: “...*54% of ERP projects are reported to be cost overrun, 72% are time overrun and 66% of the enterprises implementing ERP software initiatives receive less than 50% of the anticipated measurable benefits*”. Furthermore. Gargeya and Brady (2005, p. 501) comment that: “...*systems are capable of functioning as advertised; however, companies run into costly and sometimes fatal difficulties with the implementation and subsequent maintenance of these packages...*”. Saeed et al. (2017) report that “*more than 50 per cent of organizations, among the all types of business claimed that ERP*



*implementation was filled*". In addition, Gillooly (1998) write that the full implementation of ERP is not commonly achieved in less than three years.

Various factors affect the implementation of ERP solutions in an organization. Previous studies and existing theory focus mainly on the many factors which drive the organizational success of ERP implementation, although the number of factors, or the importance of each differs between studies. For example, Fui-Hoon Nah et al. (2001) identify eleven factors, while Stratman and Roth (2002) point out only eight. Ngai et al. (2008) perform a meta-analysis of the eight plus eleven factors reported by both Fui-Hoon Nah et al. (2001) and Stratman and Roth (2002), and subsequently identify and organize eighteen factors which they regard as critical.

This present study focuses on two of these factors in the implementation of ERP-solutions labelled 'organizational adaptation' and 'organizational resistance'. We focus on these two factors as they are the first that an organization should consider before making a decision to implement an ERP software solution. In addition, organizational adaptation and organizational resistance represent the beginning of the implementation process of an ERP software solution. We elaborate and justify the relevance and importance of both factors in the paragraphs that follow.

#### *Organizational Adaptation*

Hong and Kim (2002, p. 25) state that: "...an application package such as enterprise resource planning (ERP) system is one solution to the information technology industry's chronic problems of custom system design: reduced cost, rapid implementation, and high system quality...". Accordingly, ERP is a standardized software that could fit across organizations and industries, though the software solution itself has to be adapted to the requirements of each organization. Gargeya and Brady (2005; p.502) stress that: "...there are dozens of vendors of ERP systems...". It is therefore important that an organization decide carefully which ERP software solution is going to be used in the implementation process. Subsequently, it is crucial to determine which ERP software solution fits the organizations.

The ERP software solution should match the implementation process required of the organization (Van Everdingen et al., 2000). Henderson and Venkatraman (1999) develop the 'strategic alignment model' (SAM) to highlight the importance of fit between business strategy, IT-strategy, organizational infrastructure and organizational processes.

Janson and Subramanian (1996) conclude that the success of an ERP implementation process is significantly related to the fit of ERP software solutions in relation to the user organization. Hong and Kim (2002) refer to the importance of organizational fit in the ERP implementation process and define it as: "...the congruence between the original artifact of ERP and its organizational context...".

The misfit between the ERP software solution and the organization implies not only its adaptation to the organization, but also the organizational adaption to the ERP software solution (Hammer and Stanton, 1999; Volkoff, 1999). Chen et al. (2009; p. 9) explain that: "...in order to introduce the ERP system, the enterprise must moderate its business process and management method according to the requirements of an ERP system... ..to apply the optimal practices, the enterprise may need to moderate the business process of the organization, thus raising the necessity of business process reengineering...". Hammer and Champy (1993) write that through business process reengineering, the organizational adaptation needs of the ERP implementation drive the redesign of business processes so as to improve performance.

### *Organizational Resistance*

Robbins (1996) concludes that when employees are faced with almost any change, they prefer not to cooperate and to remain in what they consider a stable environment. Such stability is to be found the traditional mode of work. Gattiker and Goodhue (2000) indicate that the ERP is a software solution that implies the improvement of integration between organizational departments. Many organizational employees therefore need be involved in the organizational change through an ERP implementation process.

Loh (1998) suggests that it is necessary to actively counteract organizational resistance. The ERP software solution should therefore be used by employees. Organizational resistance to ERP is therefore a key factor in achieving the advantages offered by an ERP software solution. An organization needs to understand the logic of organizational resistance to ERP software solutions and work on this before continuing the ERP implementation process.

## **2.2. Business Model Innovation (BMI)**

The mainstream regarding a definition of business model innovation relates to the idea of analysing the most appropriate way to integrate components of a business, so that they can be assembled in appropriately within the organization (Frankenberger et al. 2013). These definitions of business models that can be found in the literature vary in their emphasis and perspective of element configuration within an organization (Sorescu et al 2011). In line with these arguments, Clauss (2017) summarizes that business models are configurations integrating particular dimensions. Within this configuration, there are two main dimensions that are critical in BMI (Foss and Saebi, 2018): the exploration of new applications (i.e. organizational value generation) and combinations of an organization's resources (i.e. organizational complexity).

### *Organizational Value-Generation*

Firm value is one of the main dimensions of business model innovation (Amit and Zott, 2010). Clauss (2017) summarized three main dimensions of value in business models, namely value creation, value proposition and value capture. In fact, business models describe in essence how a company creates value either internally or in collaboration with other external resources or partners (Frankenberger et al. 2012). Thus, value-generation of BMI describes how an organization uses its resources to create value (Achtenhagen et al., 2013). For example, a business model can be improved through value-generation activities such as improved inventory management (Sorescu et al. 2011). Most organizations are looking for a way to differentiate their business model offer from competitors (Shankar and Bayus, 2003) and often face intense competition in the market (Doz and Kosonen, 2010).

If an organization can define a business model differently from that of competitors, it will certainly obtain a competitive advantage over identical business models of other firms (Voelpel, Leibold, Tekie, and Von Krogh, 2005). However, business models comprise a set of subsystems and linkage mechanisms that should be combined appropriately to provide organizational consistency (Cortimiglia, Ghezzi, & German, 2016). Thus, the technological change of this value generation is the core of organizational transformation in terms of the novelty of its components (Gatignon, Tushman, Smith, & Anderson, 2002).

Wirtz and Dayser (2018) stated: “ A key benefit of BMI, ...is that it sheds light on identifying new value propositions to generate revenues and to find new ways to create and capture value for its stakeholders...”. Some things better than technology evolution to facilitate “new value propositions”, in this line the Triadic Business Models, named T-model (Hagiu and Wright,

2015) have appeared as the evolution of traditional ones (Chandler, 1962). In a technological era of information sharing, companies can generate real new value through encouraging transactions and interactions, usually on an external automated platform. This is precisely what the T-model describes, two or more entities (Andreassen, et al., 2018; Benoit et al., 2018; Gatautis, 2017), such as client and supplier which use the services of the platform provider company to benefit. The three of them (client, supplier and platform provider) gain from the network information, in terms of interaction cost and the bargaining costs of interaction (Coase, 1937, Williamson, 1981). Companies which improve technological connections have more opportunities to generate value (value-cocreation) (Brodie et al., 2006). The company expertise beyond its borders, to navigate, catch, integrate and “explode” information is basic to maintaining or creating a competitive advantage in terms of value creation (Lichtenthaler and Lichtenthaler, 2009; Knockaert and Spithoven, 2014).

T-models have come to complement the traditional ones (Andreassen, et al., 2018), encouraging integration between organizations, flexibility, networks creation, etc. A result of this stream of thought, organizations not only consider value generation addressed to their clients, but are also interested in obtaining benefits from their employees’ and collaborators’ knowledge (De Silva, 2018). However, each industry and company has a different degree of digitalization, which affects the degree of transition between business models (Andreassen, et al., 2018). If one company wants to participate in the network, it has to be technologically updated to exploit the advantages offered by technology and value generation, amongst others. This means that the organization needs to be supported internally not only by its business model, but also by technology (mainly with an appropriate ERP implementation).

### *Organizational Complexity*

Amit and Zott (2001) suggest that business models are structural templates of how firms run and develop their business. Thus, it is critical for any company to find a balance between how to organize the different elements and the novelty of each, so that it can provide optimal performance. Similarly, Clauss (2017), proposes that business models are configurations that integrate specific dimensions. In line with these contributions, the definition of Simon (1962: 468) of complexity in an organizational domain is highly relevant “a large number of parts that interact in a non-simple way.” Such interdependencies or complementarities should not only be considered as the sum of its parts, but also in terms of how these elements cohere to achieve the desired end (Sorescu et al. 2011). Similarly, Snihur and Tarzijan (2018) state that business models comprise a system of different subsystems with different interdependencies between them.

This idea was also suggested by Henderson and Clark (1990) with the idea in mind that each component might be connected to another inside the organization. Thus, if these connections are unknown to the organization, the degree of complexity will be higher than with a more traditional configuration. In fact, the complexity of organizational innovation differs substantially among companies (Krishnan & Ulrich, 2001). Unfortunately, there is a paucity of research on the drivers and consequences of engaging in a more complex business model for companies.

Our approach to business model complexity combines two aspects: scope and novelty. Following Foss and Saebi (2017), we consider complex business model innovation that includes architectural changes in BM elements, which may be new to the industry. As stated by Foss and Saebi (2017, p.217) “complex BMI can be defined as the processes by which

management actively engages in architectural changes in the BMI to disrupt market conditions (i.e., new to the industry)”, “complex BMI affects the BM in its entirety. Examples include traditional brick-and-mortar companies that shift toward becoming online platforms to facilitate the matching of customers and sellers of goods and services (e.g., as seen in the sharing economy)”. Based on Foss and Saebi’s (2017) contributions as well as the original work by Henderson and Clark (1990), business models can be considered as a set of hierarchically ordered subsystems and linkage mechanisms. These rearrangements in the organizational structure can redefine the value generation (Giesen et al. 2007) and organizational complexity (Snihur and Tarzijan, 2018) of the business model.

### **3. HYPOTHESES AND RESEARCH MODEL**

This study examines the relationships between constructs of the ERP implementation process and BMI evolution. The research model is shown in Figure 2 and the hypothesized relationships are outlined below.

Insert Figure 2 about here.

One of the main cornerstones for explaining business model innovation is related to the management of technology inside the company (Mason and Spring, 2011). Among the different dimensions of information technology, the integration of ERP into business model innovation domain is not at all well understood.

The first step in determining the influence of technology inside the company, and in particular, the potential influence of the ERP on the business model innovation, is to know the degree of implementation of the ERP. This is a key concern, because in more than half of the cases, this implementation is not successful (Scheer and Habermann, 2000).

The ERP implementation usually requires an organization to adopts the standardised business process of the ERP and leave the organizational structure based on functions, so as to acquire an organizational structure based on standardised process (Al-Mashari, 2003; Benders, Batenburg, and van der Blonk, 2006; Davenport, 1998). What is widely recognised in previous literature is that the fit between a standard ERP software and organizational needs, require adaptation in both directions (Hammer and Stanton, 1999): (i) from the ERP software to the organization, (e.g. through software development), and (ii) from the organization to the ERP software, (e.g. through the ERP standardization of the organizational work flows), as claimed by Chen et al. (2009). Attending to the second option, what is desirable for most organizations could be inappropriate in other cases (Davenport, 1998; Davison, 2002).

Several determinants negatively affect the adaptation of the organization to the ERP standards. In this respect, Organizational resistance has been identified as one of the major factors affecting the success of the ERP implementation (Hong & Kim, 2002; Lee & Myers, 2004). Companies with low levels of organizational integration and with non-standardised processes will find tough organizational resistance to the ERP implementation (Gattiker & Goodhue, 2004). In this sense, Robbin (1996) states that when employees have to change their work path they prefer not to cooperate. The greater the modifications that the technology require, the greater the employee resistance (Markus, 1983; Markus & Robey, 1983).

Consequently, less adaptation of the ERP software means more organizational adaptation, which implies more change in how employees work. This in turn leads to increased



organizational resistance to the ERP implementation process. Thus, we formulate our first hypothesis as follows:

H<sub>1</sub>: Organizational adaptation relates positively to organizational resistance.

Structural Contingency Theory proposes that the effectiveness of an organization is determined by the fit between organizational structure and contingencies (Morton and Hu, 2008). Donaldson (2001, p. 7) defines contingency as “any variable that moderates the effect of an organizational characteristic on organizational performance”. There are three main points, according to this theory: i) the structure of the organization and the associated contingencies; ii) the organizational structure is impacted by the contingencies; iii) good fit of the structural variable to the contingency level means effectiveness, and poor fit means ineffectiveness. In this theory, effectiveness is understood in a broad sense, as profitability, efficiency, etc. (Donaldson, 2001). Technology has been identified as underlying contingencies in the structural contingency (Donaldson, 2001; Morton and Hu, 2008).

Technology itself does not necessarily lead to better performance unless this technology is somehow linked to business model improvement (Chesbrough, 2010). A business model can be modified or improved for many reasons, which requires managers to make choices on how to obtain a business configuration that adapts to new conditions. As stated by Teece (2010), if the underlying technology changes, the business model must change too. Therefore, any incorporation of information and communication technologies inside the organization, such as ERP, leads to changes in the business model (Björkdahl, 2009).

When an organization implements an ERP software, it is inevitably necessary to make organizational adaptations to the new ERP software (Volkoff, 1999). These organizational adaptations induce to the redesign of business processes with the aim of improving performance (Hammer and Champy, 1993). Such infrastructural technologies are considered as one of the cores of any business model innovation process as they enable connexions between different parts inside the organization (Mason and Spring, 2011).

Various studies assert that technology improves decision-making and communication within the organization (Davenport et al., 2004), and also automatize data integration (Nazir and Pinsonneault, 2012). Achtenhagen et al. (2013) state that value generation through BMI relates to how an organization uses its resources to create value. Ultimately, all the benefits that a satisfactory ERP implementation process (viewing an ERP as a technology contingency) can provide to the organizational structure are aligned to improve the efficiency of resources in creating value, an idea supported by Structural Contingency Theory. Based on this logic, we formulate our second hypothesis as follows:

H<sub>2</sub>: Organizational adaptation relates positively to organizational value-generation.

An organization comprises various components which have to be connected (Henderson and Clark, 1990). This organizational structure of production and networks is highly relevant to any kind of business model fit inside an organization. Thus, companies not only need to define the network structure, but also the connections that take place in providing an adequate business solution (Martins et al. 2015). If the new business model requires the firm to introduce new activities in a novel combination, incompatible with existing activities, there could be a conflict inside the organization (Velu and Stiles, 2013).

One of the characteristics of an ERP software implementation is helping to connect the various components of an organization (Nazir and Pinsonneault, 2012). Nonetheless Buonanno et al. (2005; p. 384) state that: "...companies seem to be disregarding ERP systems as an answer to their business complexity...". What is clear is that ERP software is a technological tool, and as such, it introduces into the organization a new level of complexity through its use (Thompson et al., 1991). Organizational resistance to using the ERP software does not increase organizational complexity levels. Following the same stream is the notion that organizational resistance must be less in organizations with high complexity than in others with low complexity, because these organizations already use a cross-functional structure and already have process more standardised and embedded in the system. Therefore, the organizational resistance could be less significant than in organizations with low complexity (Morton and Hu, 2008). This is the notion that supports Structural Contingency Theory. We therefore formulate our third hypothesis as follows:

H<sub>3</sub>: Organizational resistance has a negative impact on organizational complexity.

An organizational environment is generally varied and complex, and organizational complexity comes from organizational absorption to this complexity (Ashmos et al., 2000). According to Weick (1979), without this environmental adaptation, the organization would fail in responding to environmental changes. Complexity in an organization could emerge from various aspects, such as goals, strategies, interactions and organization structure.

Ashmos et al. (2000) indicate that when the organization pursues various and different goals, this is considered as goal complexity. There is a stream in previous research stating that goal complexity keeps organizational options open and helps to disarm the competence who could attack a single goal (Barney, 1995; Hart and Banbury, 1994). Ashmos et al. (2000) state that strategic complexity derives from the different strategies pursued by an organization. Snihur and Tarzijan (2018) also state that complexity increases when the firm deploys multiple business models. Therefore, business model complexity is a function of a firm's current business model (Helms, 2016), and increases when the firm experiments with alternative solutions.

The classical stream of Porter (1980) and Miles and Snow (1978) is based on the idea that an organization focuses on a specific strategy to be successful. However, Miller (1992) notes that there are successful organizations that follow what seems to be contradictory strategies such as both leadership and cost, and concluded that the fact an organization has multiple strategies does not necessarily decrease performance.

When organizations are more decentralised and have less strict rules, the complexity increases, but this could be positive, according to Galbraith (1973) who found that such organizations have greater capacity to process information. Based on the complexity theory model (Capra, 1996; Stacey, 1995) Ashmos et al. (2000, p. 578) state that: "...when organizations recognize themselves as the complex adaptive systems they are, and arrange themselves in complexity-absorbing ways, successful performance is more likely...". In fact, such complexity has been highlighted as a source of competitive advantage for an organization, based on the idea of interplay between the elements of a business model (Sorescu et al. 2011). Consequently, we formulate our fourth hypothesis as follows:

H<sub>4</sub>: Organizational complexity relates positively to organizational performance.

For most companies, business model opportunities arise from a new way to combine a completely new value set of activities (Palo and Tahtinen, 2013). Understanding the mechanisms that create value in business model innovation is crucial to maintaining or improving the competitive situation in a market (Martins et al. 2015). This cognitive process of conceptual combination is not always included in analyses of the interrelationships between business model innovation dimensions. Thus, complexity has to be appropriately managed and triggered (Ghezzi and Cavallo, 2019).

BMI is related to a more complete change than product innovation, because it entails more complex changes in terms of the value proposition, value creation or value capture (Velu, 2015). Thus, the appropriate combination of business model components is essential to capturing the latent value of business model innovation and will help in choosing the right level of costs and market segments on which to focus (Foss and Saebi, 2018).

On the one hand, as Achtenhagen et al. (2013) state, the value-generation of BMI describes how a company uses its resources to create value. On the other hand, complexity implies multiple options (regarding goals, structure and strategies) for the organization (Ashmos et al., 2000). Therefore, if an organization has more opportunities to manage and combine its resources, it is more likely that the organization can generate more BMI value. Accordingly, we formulate our fifth hypothesis as follows:

H<sub>5</sub>: Organizational complexity relates positively to organizational value-generation.

Business models are designed with the aim of being optimal in terms of competitive conditions in order to achieve satisfactory performance for the organization as a whole (Martins et al. 2015). Organizational value-generation is derived from the benefits that any customers can obtain from an exchange for a variety of reasons (Mason and Spring, 2010).

Thus, instead of viewing business models as only about making money, they should direct to building the “architectures of the revenue” for any organization (Seely Brown, 2006). This argument is also defended by Velu (2015) who demonstrates that firms which generate more value with their improved business model are likely to survive longer than other firms. If an organization can generate value in the innovation of the business model in a way that differs from competitors in the marketplace, this constitutes a competitive advantage (Voelpel et al. 2005).

From classic studies such as Porter (1980), competitive advantage has been related positively to an increase in performance. Recently, Cantele and Zardini (2018) demonstrate that competitive advantage has a positive effect on financial performance. We therefore formulate our sixth hypothesis as follows:

H<sub>6</sub>: Organizational value-generation relates positively to organizational performance.

We test the hypothesized relationships by means of the research model shown in Figure 2.

## **4. METHODOLOGY**

### **4.1. Data collection and sample**

This study focuses on how two of the ERP process factors (organizational adaptation and organizational resistance) could influence both the business model evolution (organizational value-generation and organizational complexity) and the organization performance as a whole.

The research is based in the study of one type of software named ERP, in order to avoid potential context bias (Hartline and Jones, 1996). Choosing just one kind of software enabled the research design to control for product-factors effects that could confound the results. The research did not establish a difference between sectors. All company types from all industries were taken into account. The ERP software affects all departments and is vital to ensuring the appropriate activity of a company (Uwizeyemungu and Raymond, 2012).

All the companies selected for this study were from the same country. In all the cases the company was structured in terms of well-defined departments and all of the core departments for the company were automated by the ERP over more than 3 years. In all cases, the ERP software had available a specific module for each vital department in the company (financial, sales, purchases, etc). The main strategic reason to implement the ERP was to adapt the company to the technology and make it more efficient.

At the beginning of the study, the research team conducted some in-depth and semi-structured interviews with four companies. The profiles interviewed were the General Manager (GM) and the Information Technology Manager (ITM); both were considered essential for this study for two main reasons 1) the direct relationship between the GM with the business model innovation and the selection of the ERP software and 2) the ITM with the ERP implementation process and technological support to the entire organization.

Furthermore, the research team had access to text documents and structured observations of these companies with the aim of approximating to a research model that fits the companies in a practical manner. The results obtained from an online survey were validated through the data obtained from in-depth interviews, textual documents and structured observations.

The information considered was about the ERP implementation process and the evolution of the Business Model with respect to the innovation in various companies. The methodology applied provides an opportunity to test the process results using different perspectives (Teddle and Tashakkori, 2009), this approach allows data triangulation (Silverman, 2010). In-depth interviews with three companies (3 GM and 3 ITM) from outside the previous sample were carried out to validate the data obtained.

Using a mixed method methodological approach facilitates comparing various views at different phases. Furthermore, as indicated this methodology provides the possibility of data triangulation. Therefore, the use of mixed-method offers a greater and fuller comprehension of the influence of ERP implementation on BMI, and ultimately on company performance.

Four companies were interviewed in the pre-research stage. In particular, the meetings were arranged with two different profiles (General manager (GM) and IT manager – (ITM)). All GM were men, aged between 45 and 60. They had a vision of the entire company and authorized the research team with access to important interesting textual documents and the observation of flows within the company.

ITM was a really valuable profile for interviewing, because an ITM has access not only to knowledge about the ERP implementation, but also to the entire information bank of the



company, due to the digital era in which companies nowadays operate. The age of ITM profile was between 40 and 50, all of them men too.

We did not have a pre-established number of meetings for the interviews with each profile, (Liu et al., 2015) Rather, the number was determined by the need for information required by the study. In all cases, the formal and informal interviews lasted between 40 minutes and 1 hour. During the interaction, written notes were taken. Although the research team used a standard structure to conduct each interview, the questions were open-ended, with the aim of letting the interviewee freely provide all the information possible about the ERP implementation factors and BMI.

The research team took notes and recorded conversations during the sessions so as to summarize and discuss them later. The main aim at this stage was to provide a robust basis for the study (Dubois and Gadde, 2014). For example, GM1 state: “...complexity doesn’t reduce performance, a complex innovation in the business model means that the innovation is multifaceted and probably hard to implement, but once done could improve the performance... ...a simple innovation probably couldn’t improve performance to the same level as a complex one...”. In what follows, we summarize findings from this qualitative phase of the study and report several representative quotes from the interviews to achieve a better assessment of our interpretations and conclusions (Kirk and Miller, 1986), and to demonstrate the consistency of GM and ITM of all the companies with respect to the influence of the factors studied on performance.

An online survey was developed for collecting data from companies that have a unique common factor, namely the use of an ERP software by the organization. An email was sent to the participants explaining the study and requesting them to access the hyperlink of the questionnaire web site (Cascio et al. 2010). The email stated clearly that the survey was anonymous and purely for research purposes. The profile of the respondent was mainly a person with a management position who had broad knowledge of the internal process of the company and its automatization, the age range was between 30 and 62 years, the average being 43 years. The research team received back 132 questionnaires, of which 28 stated that they did not use and ERP system. These responses were discarded.

Based on Hair et al., (2010, p. 102) rule of thumb that: “...the researcher should not factor analyse a sample of fewer than 50 observations” and (ibid.) “...the minimum is to have at least five times as many observations than as the number of variables to be analysed”, we therefore conclude that the sample used in this study is satisfactory. Our factor analysis reported contains 15 items and subsequently meeting the recommended threshold of a minimum of 75 usable questionnaires. This study gathered 104 fully filled in questionnaires.

**4.2. Measures**

The scales used in this study were adapted from scales presented in the literature and respondents were asked for the degree of match on a 7-point Likert-scale, ranging from 1 ( I totally disagree with this statement) and 7 ( I totally agree with this statement). Table 1 displays a detailed summary of the construct scales used in this study.

Insert Table 1 about here.

Constructs referred to the ERP process (i.e. organizational adaptation and organizational resistance) were modified from Hong and Kim (2002), and based on qualitative research and a

pre-test. A three-item scale was finally adopted for both scales of ERP factors. With regard to the constructs of BMI evolution (i.e. organizational value-generation and organizational complexity) we used several sources. In order to measure organizational value-generation, we reviewed the work of Clauss (2017) and finally adapted a three-item scale from Johnson, Christensen, and Kagermann (2008). By contrast, the three-item scale on organization complexity was adapted from several sources, such as Zott and Amit (2008), Johnson et al. (2008), Christensen and Raynor (2003) and Sorescu et al. (2011). Our approach to business model complexity is in line with our previous discussion relating to the contributions of Foss and Saebi (2017). Finally, organizational performance was assessed, based on a set of items from Molina-Castillo and Munuera-Alemán (2009). All construct measures were pre-tested and validated through several in-depth interviews with SME managers.

As a further step in assessing respondent suitability for answering the questionnaire, we conducted an analysis of textual documents and direct observations outside the previous sample companies. In line with Yin (2009), a wide range of textual document were provided to the research team (e.g. ERP proposal, technical documents, invoices and customer reports).

Three companies outside the previous sample let one member of the research team takes a passive role in the day-to-day activities of the companies. This researcher could visit the company whenever needed and maintained a passive role without commenting, just observing (Zikmund et al., 2012). This information was useful as an initial validation of the results, the main intention being to minimize bias in the interpretation of the results or previous stages of the research. In this last stage, three additional companies were interviewed, all of which were outside of the previous sample and the procedure was the same as in the pre-research phase. The research team interviewed not only the GM, but also the ITM. The method used in the interviews was the same as in previous phase, as well as the profile of respondents. The selections of these three companies was random. These last interviews were needed to ensure and make a final validation of the study results.

Although our analysis used both qualitative and quantitative techniques to ensure the rigor of data collection, we are aware that common method variance could endanger our analysis. Therefore, we used several techniques such as the Harman one-factor test or the common latent factor from Podsakoff, Mackenzie, Lee, and Podsakoff (2003) to test for bias. The researchers also used the approach of Lindell and Whitney (2001) to account for a threat in common method variance in cross-sectional research. All of these tests confirmed that common method variance is not problematic for our research.

#### **4.3. Reliability and discriminant validity**

This study used several multi-item scales to test the hypotheses. We used several techniques to test the psychometric properties of the measures, as shown in Table 2. Convergent validity was confirmed, as all t-values of the items were significant. We then assessed scale composed reliability (Bagozzi and Yi, 1988) and average variance extracted (Fornell and Larcker, 1981). Both indexes were above the recommended cut-off points of .60 and .50 respectively.

Insert Table 2 about here.

Discriminant validity could potentially also be problematic. Thus, we used both traditional techniques of confidence intervals (Anderson and Gerbing, 1988) and comparing the square root of the AVE with the correlations among the constructs (Fornell and Larcker, 1981). Both tests revealed that discriminant validity was not problematic.

However, recent contributions in this field (Henseler, Ringle, and Sarstedt, 2015; Voorhees, Brady, Calantone, and Ramirez, 2016) recommend a more rigorous test to analyze discriminant validity, such as the heterotrait-monotrait (HTMT) test. Based on these suggestions, we used ADANCO 2.0 (Henseler et al., 2015) to calculate the HTMT ratio of the average correlations between constructs to the geometric mean of the average correlations of items within the same constructs. A value close to 1.0, or one that exceeds this value would imply a discriminant validity violation. We obtained satisfactory results and none of these ratios exceed the cut-off point of .85 recommended in the literature.

In summary, these results provide adequate evidence of both convergent and discriminant validity, as well as the reliability of all measures used in our study as shown in Table 3.

Insert Table 3 about here.

**5. RESULTS**

To test our hypotheses, we ran a structural model that included all the hypothesized paths in our theoretical model, as shown in Figure 3. The overall fit was more than adequate and within the cut-off points recommended in the literature for each of the indexes considered. The overall adjustment fit of the structural model showed adequate levels on all the indicators from the structural model ( $\chi^2(84) = 111.35$  CFI=.96 NNFI=.95 RMSEA=.05). In addition, all hypotheses were significant and with the expected relationship. Thus, we can confirm all the hypotheses of our study.

Insert Figure 3 about here.

Although our model confirmed all the proposed hypotheses, rival models should be tested against the proposed model, as recommended by Anderson and Gerbing (1988). The proposed model included two mediators, and some procedures recommended by Preacher and Hayes (2008) should be considered. The likelihood ratio confirmed a mediation effect of both dimensions of business model evolution (organizational value-generation and organizational complexity).

As a further test for our model, we conducted a test of the indirect effect that the ERP-constructs of organizational adaptation and organizational resistance could have on the BMI-construct's value-generation and BMI organizational complexity. This relationship is not only direct but indirect through the other suggested paths.

Accordingly, we found that organizational adaptation had an indirect effect of -.09 (1.94) in BMI organizational value-generation and also an indirect effect of -.11 (1.98) on BMI organizational complexity. Similarly, ERP organizational resistance had an indirect effect of -.09 (1.94) on BMI organizational value-generation. Surprisingly, the total effect of both dimensions of ERP had a distinct effect on both dimensions of BMI. ERP value-generation had a non-significant total effect on BMI organizational value-generation, but a negative total effect on BMI organizational complexity.

In contrast, ERP organizational resistance had a total effect of -.19 (2.31) on BMI organizational value-generation. With regard to the total effect of both dimensions of ERP, we found different results. ERP value-generation did not have a significant total effect in organizational

performance .01 (.27), but ERP organizational resistance had a significant negative effect -.09 (2.15). A detailed analysis of the results can be found in Table 4.

Insert Table 4 about here.

In the following section, these results are discussed, and research as well as managerial implications are provided.

## 6. DISCUSSION OF RESULTS

The outcome of BMI is affected in several ways. Technology is just one way that affects the evolution of BMI. An important characteristic of ERP is not whether it is a better or worse tool, but its capacity to structure information offering indicators that can be used to manage and create a competitive advantage in the marketplace.

There is previous research that support the idea that the ERP adaptations drive organizational resistance (e.g. Launghlin, 1999; Kong and Kim, 2002). The difficulties of technology adoption are widely known in the literature, with most theories focusing on behavioural intentions, for example, the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980) or the Theory of Planned Behaviour (Ajzen, 1981). From these two theories, Davis et al., (1989) developed the Technology Acceptance Model (TAM), which explains how users accept and use technology. This model is widely supported in the literature (Davis, 1989, 1993; Mathieson, 1991; Jones et al., 2002; Ahearne et al., 2005; Jelinek et al., 2006).

The fact that the ERP is a standard software (which means that it collects the fundamental knowledge and process from a multitude of organizations from various industries) has its disadvantages, because the organization has to pay for the software modifications. Furthermore, the organization has to change its internal process and flows. This may seem to be a disadvantage, but can actually be an important advantage. The standardised ERP process and flows are efficient, which means that when the organization adapts its flows to the ERP flows, the organizational ones will be more efficient (the organization learns from many organizational processes) through the ERP implementation, in just one step, implementation step). This adaptation ERP process automatically creates value for the organization.

Furthermore, ERP is a tool for improving the organization of information, and it offers reports, indicators and can automatically connect internal areas or the company with other companies (suppliers or customers). Therefore, the ERP and the management of complexity that it offers drives the organization to combine its resources through multiple means of creating value through its business model.

ERP as a tool is a powerful way to manage the multitude of goals, structures and available options properly. It is also a way to manage the complexity of BMI, where ERP both structures and organizes the different options. Ultimately, if the options are useful, the improvement of the performance probability.

When the culture of the organization induces resistance to the ERP implementation, this resistance limits treating more options properly, that ERP actually allows. The organizational resistance also constrains having more options of the BMI through the complexity, therefore prohibiting some of the potential ways to improve the performance.

## RESEARCH IMPLICATIONS



Companies are frequently looking for new business models that adapt to novel technologies and offer new business opportunities. To the best of our knowledge this is the first study that has explored the connections of ERP and BMI and in turn the final outcome in organizational performance.

Some may argue that this research only pays attention to ERP, among all the many information communication technologies. But the existence of standards, such as ERP, are also seen as a way for managers to explore and pursue new market opportunities.

There is some previous evidence on how information technology might be useful in the configuration or improvement of a business model. Our study goes a step further in this area, offering a new outlook on how a company should leverage the ERP adaptation, and any resistance in the organization to innovating in the business model.

In addition, the results indicate that the BMI constructs considered (i.e. value-generation and organizational complexity) mediate the impact of the ERP constructs (organizational adaptation and organizational resistance), in organizational performance.

This result could be useful for any firm wishing to pursue an improvement to a business model that focuses on implementing a new ERP system in the organization. Therefore, our study is rooted in the evolutionary perspective of BMI but it also integrates into an overall model other points of view such as the rational positioning view and cognitive view.

### **MANAGERIAL IMPLICATIONS**

A deeper organizational adaptation of ERP will increase organizational resistance to ERP. It is therefore crucial for the organization to conduct a thorough search for the most suitable ERP software in the market in terms of fitting well with the organization and involving its human resources in the selection process.

We recommend that organizations not just adapt its flows to the ERP flows, but also understand these flows in depth as each ERP flow is the work result of a multitude of companies over several years. A flow is not random. Furthermore, it is necessary to understand how the organization acquires knowledge about how other organizations improve their efficiency and acquire new competitive advantages in its industry.

ERP implementation should not be considered as a mechanical process that mainly affects the information technology area. All departments, and in particular the research and development (R&D) department (or the department or team in charge of innovations) must participate actively. This team must realise what adaptations and modifications imply for a future BMI.

Organizations often forget that a successful ERP implementation is not an end itself. It is just a path and a process for improving the current business model, with the aim of achieving better performance in the marketplace. If the organizational resistance to ERP blocks the innovation of the business model, the ERP implementation will fail. The organization can achieve the BMI through other paths, but perhaps with less probability of success due to have fewer options properly documented, as ERP helps to deal effectively with complexity and information flows.

Complexity is usually seen as troublesome for an organization. This notion must be changed, as well organised complexity means opportunities for success in the market. Organizations must train their departments in ERP and not just teach them how the ERP works. There should

be more learning how the ERP can help to achieve what the organization wants. The ERP is just a tool, the “employee mind” has to inject the creativity into the BMI.

Independently of the implementation process, the organization should identify the key indicators for its business success. If the ERP does not consider this information, organizations need to insist on it. The information considered by ERP is the basis for decision-making.

The ERP implementation team does not always understand the business of the organization. The team may just know how to implement ERP, but not be aware of the most important information for market to success. The organization itself is ultimately responsible for implementing and using the ERP as a tool to help achieve organizational goals. Organizations sometimes focus too much or expect too much from the ERP process. ERP is a tool and the organization has always to focus on the business and market in which it operates.

ERP implementation needs consider improvements to the business model and ultimately the performance, but not separately. The organization has to retain focus on its business and market, so that it does not get lost in the complexity of ERP implementation. An ERP process that is well implemented should contribute to improving the business model through the innovation, and therefore so too the performance of the organization. However, sometimes the organization treats the ERP separately from the BMI, thus losing the opportunity provided by ERP implementation to improve the BMI.

## **7. CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH**

We acknowledge that this study entails some limitations. It is limited to those companies that implement an ERP in their organizations. This makes data collection more complicated and in turn reduced the sample. Thus, it would be interesting to explore a larger sample size and replicate findings with population sub-groups such as micro firms, small firms and medium sized firms.

In addition, an interesting stream of research could be related to the notion of comparing organizations that implement ERP in their processes with those which do not. Furthermore, some contextual factors could be explored to provide more insightful recommendations to managers, and improve our understanding of the relationships between the ERP process, the BMI evolution and organizational performance.

Additionally, other constructs that affect ERP implementation could be analysed, apart from those considered in this study, such as organizational adaptation and organizational resistance. Similarly, as stated in the introduction, BMI has been defined as a multidimensional concept. Thus, other BMI constructs, which are different to those included in this study, could be used in the future. For example, it could be relevant to explore the cost implications in terms of both the ERP and BMI implementation, in contrast to those organizations that use more traditional approaches. It would also be relevant to explore how organizations interact with surrounding organizations, in line with the open business model literature, which proposes extending the analysis to buyer-seller relationships.

Figure 1 – ERP and BMI Positioned.



Figure 2 – Theoretical Model.

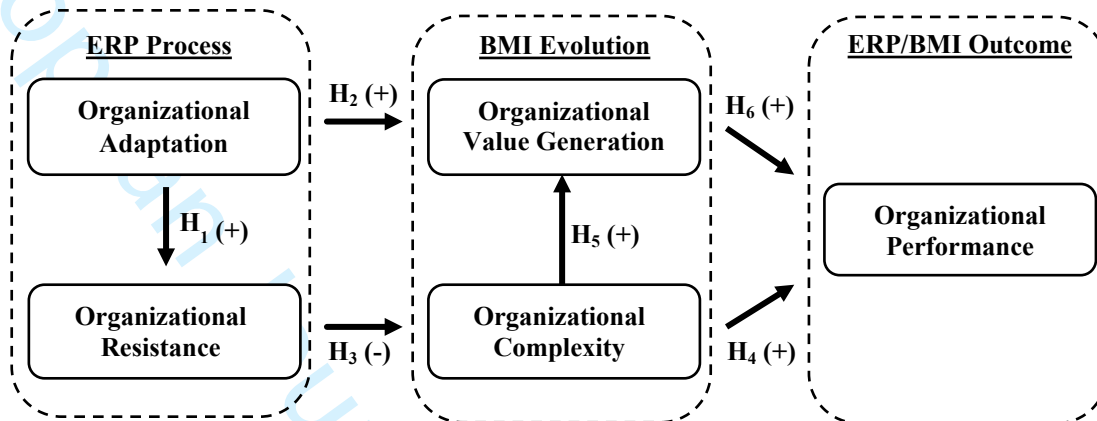
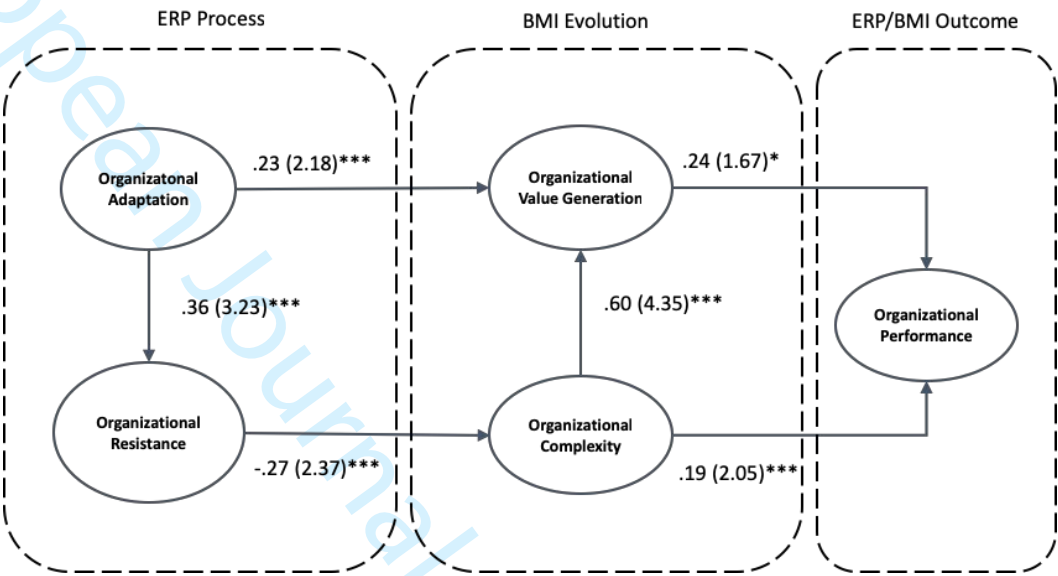




Figure 3 – Model Results.



( $\chi^2$  (84)= 111.35 CFI=.96 NNFI=.95 RMSEA=.05)

Table 1 – Questionnaire.

Enterprise Resource Planning Process	
Construct (Source)	Item
Organizational Adaptation (Hong and Kim, 2002)	In order to align the ERP with our organizational process during the last year, it was needed a significant time and effort for:
1)	...standardize our organizational processes.
2)	...integrate our redundant organizational processes.
3)	...modify our documents and data elements
Organizational Resistance (Hong and Kim, 2002)	During the implementation of our ERP during the last year, there were a lot of cases of:
1)	...users that did not collaborate.
2)	...users that persist in traditional practices not standardized by the ERP.
3)	...department that did not reply to the needs of the team project.
Business Model Innovation Evolution	
Organizational Value-Generation (Johnson, Christensen and Kagermann, 2008)	During the last year, your organization has made changes in its business model to:
1)	...introduce new products.
2)	...introduce new ways to generate income.
3)	...introduce new ways to fix prices.
Organizational Complexity Christensen and Raynor, 2003; Zott and Amit, 2007)	During the last year, your organization has made changes in its business model that:
1)	...have not been implemented before by competitors.
2)	...transform the way to interact with clients.
3)	...modify the way to organize the relationships with clients.
ERP/BMI Outcome	
Organizational Performance (Molina-Castillo and Munuera-Alemán, 2009)	During the last year, your organization has increased:
1)	...the sales.
2)	...the revenues.
3)	...return on investment.

Table 2 – Confirmatory Factor Analysis.

	Loading	SCR	AVE
Organizational Adaptation			
1)	.78 (8.98)	.87	.70
2)	.85 (10.00)		
3)	.85 (10.08)		
Organizational Resistance			
1)	.75 (8.49)	.87	.70
2)	.78 (8.95)		
3)	.95 (12.00)		
Organizational Value-Generation			
1)	.80 (8.54)	.75	.70
2)	.75 (7.91)		
3)	.58 (5.76)		
Organizational Complexity			
1)	.58 (6.13)	.80	.57
2)	.92 (11.23)		
3)	.89 (10.69)		
Organizational Performance			
1)	.78 (9.12)	.88	.71
2)	.91 (11.40)		
3)	.84 (10.06)		
Overall adjustment	2(80)=106.42 CFI=.96 NNFI=.95 RMSEA=.05		
T-value in brackets			

**Table 3 – Discriminant validity (AVE-Correlations and HTMT).**

<b>AVE Correlation Comparison</b>	<b>SCR</b>	<b>AVE</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Organizational adaptation	.87	.70	.84				
2. Organizational resistance	.87	.70	.36***	.84			
3. Organizational Value-Generation	.75	.70	.20*	.01	.84		
4. Organizational Complexity	.80	.57	.05	.26***	.58***	.75	
5. Organizational Performance.	.88	.71	.14	.32***	.43***	.42***	.84
<i>SCR= Scale compose reliability, AVE= Average Variance Extracted</i> <i>Elements in the main diagonal are the square root of the AVE</i> <i>Levels of significance: *** <math>p &lt; .01</math> ** <math>p &lt; .05</math></i>							
<b>HTMT Test</b>			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Organizational adaptation							
2. Organizational resistance			.35				
3. Organizational Value-Generation			.27	.05			
4. Organizational Complexity			.01	.15	.63		
5. Organizational Performance.			.15	.32	.47	.48	



Table 4 – Indirect and Total Effects of Relationships.

	Direct	Indirect	Total
Organizational adaptation → Organizational Value-Generation	.23 (2.18)***	-.09 (1.94)*	.26(1.60)
Organizational adaptation → Organizational Complexity	n.a.	-.11(1.98)**	-.11 (1.98)**
Organizational resistance → Organizational Value-Generation	n.a.	-.19 (2.31)***	-.19 (2.31)***
Organizational adaptation → Organizational Performance.	n.a.	.01 (.27)	.01 (.27)
Organizational resistance → Organizational Performance.	n.a.	-.09(2.15)**	-.09 (2.15)**

## References

- Acar, M.F., Tarim, M., Zaim H., Zaim, S. & Delen, D. (2017), "Knowledge management and ERP: Complementary or contradictory?", *International Journal of Information Management*, Vol. 37 No 6, pp. 703-712.
- Achtenhagen, L., Melin, L., & Naldi, L. (2013), "Dynamics of business models—strategizing, critical capabilities and activities for sustained value creation", *Long range planning*, Vol. 46 No. 6, pp. 427-442.
- Ahearne, M., Bhattacharya, C. B., & Gruen, T. (2005), "Antecedents and consequences of customer-company identification: Expanding the role of relationship marketing", *Journal of applied psychology*, Vol. 90 No.3, pp.574.
- Ajzen, I. (1991), "The theory of planned behavior", *Organizational behavior and human decision processes*, Vol. 50 No. 2, pp. 179-211.
- Ajzen, I., Fishbein, M., (1980), *Understanding Attitudes and Predicting Social Behaviour*. Prentice-Hall, Englewood Cliffs, NJ.
- Al-Mashari, M. (2003), "A process change-oriented model for ERP application", *International Journal of Human-Computer Interaction*, Vol. 16 No.1, pp. 39–55.
- Amit, R., & Zott, C. (2001), "Value creation in e-business", *Strategic management journal*, Vol. 22 No.6-7, pp. 493-520.
- Amit, R., & Zott, C. (2010), "Business model innovation: Creating value in times of change".
- Amit, R., & Zott, C. (2012), "Creating value through business model innovation", *MIT Sloan Management Review*, Vol. 53 No.3, pp. 41-49.
- Andreassen, T. W., Lervik-Olsen, L., Snyder, H., Van Riel, A. C., Sweeney, J. C., & Van Vaerenbergh, Y. (2018), "Business model innovation and value-creation: the triadic way", *Journal of Service Management*, Vol. 29 No.5, pp. 883-906.
- Anderson, J. C., & Gerbing, D. W. (1988), "Structural equation modeling in practice: A review and recommended two-step approach", *Psychological bulletin*, Vol. 103 No. 3, pp. 411.
- Ashmos, D. P., Duchon, D., & McDaniel Jr, R. R. (2000), "Organizational responses to complexity: the effect on organizational performance", *Journal of Organizational Change Management*, Vol.13 No.6, pp.577-595.
- Baden-Fuller, C., & Morgan, M. S. (2010), "Business models as models", *Long range planning*, Vol. 43 No. 2-3, pp. 156-171.
- Bagozzi, R. P., & Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the academy of marketing science*, Vol. 16 No. 1, pp. 74-94.
- Barney, J. B. (1995), "Looking inside for competitive advantage", *Academy of Management Perspectives*, Vol. 9 No.4, pp. 49-61.
- Björkdahl, J. (2009), "Technology cross-fertilization and the business model: The case of integrating ICTs in mechanical engineering products", *Research Policy*, Vol.38 No.9, pp. 1468-1477.
- Bellman, R., Clark, C. E., Malcom, D. G., Craft, C. J., & Ricciardi, F. M. (1957), "On the Construction of a Multi-Stage, Multi-Person Business Game", *Operations Research*, Vol. 5 No.4, pp. 469-503.
- Benders, J., Batenburg, R., & van der Blonk, H. (2006), "Sticking to standards: Technical and other isomorphic pressures in deploying ERP-systems", *Information and Management*, Vol. 43 No. 2, pp. 194–203.
- Benoit, S., Baker, T.L., Bolton, R.N., Gruber, T. and Kandampully, J. (2017), "A triadic framework for collaborative consumption (CC): motives, activities and resources & capabilities of actors", *Journal of Business Research*, Vol. 79 No.10, pp. 219-227.

- 1
- 2
- 3 Bhatt, G. D. (2001), "Knowledge management in organizations: examining the interaction
- 4 between technologies, techniques, and people", *Journal of knowledge management*, Vol. 5 No.
- 5 1, pp. 68-75.
- 6 Brodie, R.J., Glynn, M.S. and Little, V. (2006), "The service brand and the service-dominant logic:
- 7 missing fundamental premise or the need for stronger theory?", *Marketing Theory*, Vol. 6 No.3,
- 8 pp. 363-379.
- 9 Brynjolfsson, E., & Hitt, L. M. (2000), "Beyond computation: Information technology,
- 10 organizational transformation and business performance", *Journal of Economic*
- 11 *perspectives*, Vol. 14 No.4, pp. 23-48.
- 12 Buonanno, G., Faverio, P., Pigni, F., Ravarini, A., Sciuto, D., & Tagliavini, M. (2005), "Factors
- 13 affecting ERP system adoption: A comparative analysis between SMEs and large
- 14 companies", *Journal of Enterprise Information Management*, Vol. 18 No. 4, pp. 384-426.
- 15 Cantele, S., & Zardini, A. (2018), "Is sustainability a competitive advantage for small businesses?
- 16 An empirical analysis of possible mediators in the sustainability–financial performance
- 17 relationship", *Journal of Cleaner Production*, Vol. 182, pp. 166-176.
- 18 Capra, F. (1996), *The web of life* (pp. 153-171). Audio Renaissance Tapes.
- 19 Cascio, R., Mariadoss, B. J., & Mouri, N. (2010), "The impact of management commitment
- 20 alignment on salespersons' adoption of sales force automation technologies: An empirical
- 21 investigation", *Industrial Marketing Management*, Vol. 39 No. 7, pp. 1088-1096.
- 22 Chamberlin, T., Doutriaux, J., & Hector, J. (2010), "Business success factors and innovation in
- 23 Canadian service sectors: an initial investigation of inter-sectoral differences," *The Service*
- 24 *Industries Journal*, 30(2), 225-246.
- 25 Chandler, A. (1962) *Strategy and Structure: The History of the American Industrial Enterprise*.
- 26 Cambridge, MA: MIT Press
- 27 Chen, H. H., Chen, S. C., & Tsai, L. H. (2009), "A study of successful ERP—from the organization
- 28 fit perspective. *Journal of Systemics, Cybernetics and Informatics*, 7(4, pp. 8-16.
- 29 Chesbrough, H. (2010), "Business model innovation: opportunities and barriers", *Long range*
- 30 *planning*, Vol. 43 No.2-3, pp. 354-363.
- 31 Chesbrough, H., & Rosenbloom, R. S. (2002), "The role of the business model in capturing value
- 32 from innovation: evidence from Xerox Corporation's technology spin-off
- 33 companies", *Industrial and corporate change*, Vol. 11 No.3, pp. 529-555.
- 34 Christensen, C. M., & Raynor, M. E. (2003), "Why hard-nosed executives should care about
- 35 management theory", *Harvard business review*, Vol. 81 No.9, pp. 66-75.
- 36 Clauss, T. (2017), "Measuring business model innovation: conceptualization, scale development,
- 37 and proof of performance", *R&D Management*, Vol. 47 No.3, pp. 385-403.
- 38 Coase, R.H. (1937), "The nature of the firm", *Economica*, Vol. 29 No. 4, pp. 368-405.
- 39 Cortimiglia, M. N., Ghezzi, A., & German, A. (2016), "Business model innovation and strategy
- 40 making nexus: evidence from a cross-industry mixed-methods study", *R&D Management*, Vol.
- 41 46 No. 3, pp. 414–432.
- 42 Davenport, T. H. (1998), "Putting the enterprise into the enterprise system", *Harvard Business*
- 43 *Review*, Vol. 76 No.4, pp. 121–131.
- 44 Davenport, T. H., Harris, J. G., & Cantrell, S. (2004), "Enterprise systems and ongoing process
- 45 change", *Business Process Management Journal*, Vol. 10 No. 1, pp. 16-26.
- 46 Davis, F.D. (1989), "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of
- 47 Information Technologies", *MIS Quarterly*, Vol. 13, pp. 319-340.
- 48 Davis, F. D. (1993), "User acceptance of information technology: system characteristics, user
- 49 perceptions and behavioral impacts", *International journal of man-machine studies*, Vol 38 No.
- 50 3, pp. 475-487.
- 51 Davison, R. (2002), "Cultural complications of ERP", *Communications of the ACM*, Vol. 45 No.7,
- 52 pp. 109–111
- 53
- 54
- 55
- 56
- 57
- 58
- 59
- 60

- De Silva, M., Howells, J., & Meyer, M. (2018), "Innovation intermediaries and collaboration: Knowledge-based practices and internal value creation", *Research Policy*, Vol. 47 No. 1, pp. 70-87.
- Donaldson, L. (2001), *The contingency theory of organizations*. Thousand Oaks, CA: Sage Publications.
- Doz, Y. L., & Kosonen, M. (2010), "Embedding strategic agility: A leadership agenda for accelerating business model renewal", *Long range planning*, Vol 43 No. 2-3, pp. 370-382.
- Dubois, A., & Gadde, L. E. (2014), "Systematic combining"—A decade later", *Journal of Business Research*, Vol. 67 No. 6, pp. 1277-1284.
- Fornell, C., & Larcker, D. F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Foss, N. J., & Saebi, T. (2017), "Fifteen Years of Research on Business Model Innovation", *Journal of Management*, Vol. 43 No.1, pp. 200-227. doi:10.1177/0149206316675927
- Frankenberger, K., Weiblen, T., & Gassmann, O. (2013), "Network configuration, customer centricity, and performance of open business models: A solution provider perspective", *Industrial Marketing Management*, Vol. No. 5, pp. 671-682. doi:http://dx.doi.org/10.1016/j.indmarman.2013.05.004
- Fui-Hoon Nah, F., Lee-Shang Lau, J., & Kuang, J. (2001), "Critical factors for successful implementation of enterprise systems", *Business process management journal*, Vol. 7 No. 3, pp. 285-296.
- Galbraith, J.R. (1973), *Designing Complex Organizations*, Addison-Wesley, Reading, MA.
- Gargeya, V. B., & Brady, C. (2005), "Success and failure factors of adopting SAP in ERP system implementation", *Business process management journal*, Vol. 11 No.5, pp. 501-516.
- Gatautis, R. (2017), "The rise of the platforms: business model innovation perspectives", *Inzinerine Ekonomika-Engineering Economics*, Vol. 28 No.5, pp.585-591.
- Gatignon, H., Tushman, M. L., Smith, W., & Anderson, P. (2002), "A structural approach to assessing innovation: Construct development of innovation locus, type, and characteristics", *Management Science*, Vol. 48 No. 9, pp. 1103-1122.
- Gattiker, T. F., & Goodhue, D. L. (2000), "Understanding the plant level costs and benefits of ERP: will the ugly duckling always turn into a swan?. In *hicss* (p. 7017). IEEE.
- Ghezzi, Antonio, & Cavallo, Angelo. (2019), "Agile business model innovation in digital entrepreneurship: Lean startup approaches", *Journal of Business Research*. In press
- Giesen, E., Berman, S.J., Bell, R., & Blitz, A. (2007), "Three ways to successfully innovate your business model", *Strategy and Leadership*, Vol. 35 No.1, pp. 27-33.
- Gillooly, C. (1998), *Disillusionment*. *Information Week*, Vol. 16, pp. 46-56.
- Hagiu, A. and Wright, J. (2015), "Multi-sided platforms", *International Journal of Industrial Organization*, Vol. 43 (C), pp. 162-174.
- Hair, J., Black, W., Babin, B. and Anderson, R. (2010), *Multivariate Data Analysis: A Global Perspective*, Pearson Education, Upper Saddle River, NJ.
- Hammer, M., & Champy, J. (1993), "Business process reengineering. London: Nicholas Brealey, 444.
- Hammer, M., & Stanton, S. (1999), "How process enterprises really work", *Harvard business review*, Vol. 77, pp.108-120.
- Hart, S., & Banbury, C. (1994), "How strategy-making processes can make a difference", *Strategic management journal*, Vol.15 No. 4, pp. 251-269.
- Hartline, M. D., & Jones, K. C. (1996), "Employee performance cues in a hotel service environment: Influence on perceived service quality, value, and word-of-mouth intentions", *Journal of business research*, Vol. 35 No.3, pp. 207-215.



- Henderson, R. M., & Clark, K. B. (1990), "Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms", *Administrative science quarterly*, Vol. 35 No. 1, pp. 9-30.
- Henderson, J. C., & Venkatraman, H. (1999), "Strategic alignment: Leveraging information technology for transforming organizations", *IBM systems journal*, Vol. 38 No.2.3, pp. 472-484.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the academy of marketing science*, Vol. 43 No. 1, pp. 115-135.
- Hong, K. & Kim, Y.G. (2002), "The Critical Success Factors for ERP Implementation: an Organizational Fit Perspective", *Information and Management*, Vol. 40 No. 1, pp. 25-40.
- Janson, M. A., & Subramanian, A. (1996), "Packaged software: selection and implementation policies", *INFOR: Information Systems and Operational Research*, Vol. 34 No. 2, pp. 133-151.
- Jelinek, R., Ahearne, M., Mathieu, J., & Schillewaert, N. (2006), "A longitudinal examination of individual, organizational, and contextual factors on sales technology adoption and job performance", *Journal of Marketing Theory and Practice*, Vol. 14 No.1, pp. 7-23.
- Johnson, D. S., & Bharadwaj, S. (2005), "Digitization of selling activity and sales force performance: An empirical investigation", *Journal of the Academy of Marketing Science*, Vol. 33 No. 1, pp. 3-18.
- Johnson, M. W., Christensen, C. M., & Kagermann, H. (2008), "Reinvesting Your Business Model, w HBR's Must-Reads on Strategy," *Harvard Business Review*, December.
- Jones, E., Sundaram, S., & Chin, W. (2002), "Factors leading to sales force automation use: A longitudinal analysis", *Journal of Personal Selling & Sales Management*, Vol. 22 No. 3, pp. 145-156.
- Kalling, T. (2003), "ERP systems and the strategic management processes that lead to competitive advantage", *Information Resources Management Journal (IRMJ)*, Vol. 16 No.4, pp. 46-67.
- Kirk, J. and Miller, M.L. (1986), *Reliability and Validity in Qualitative Research*, Sage Publications, Beverly Hills, CA.
- Knockaert, M., & Spithoven, A. (2014), "Under which conditions do technology intermediaries enhance firms' innovation speed? The case of Belgium's collective research centres", *Regional Studies*, Vol. 48 No.8, pp. 1391-1403.
- Koch, C. (1996), "The integration nightmare: sounding the alarm", *CIO Mag*, November Vol.15, pp. 6-10.
- Krishnan, V., & Ulrich, K. T. (2001), "Product development decisions: A review of the literature", *Management Science*, Vol. 47 No. 1, pp. 1-21.
- Lambert, S. C., & Davidson, R. A. (2013), "Applications of the business model in studies of enterprise success, innovation and classification: An analysis of empirical research from 1996 to 2010", *European Management Journal*, Vol. 31 No. 4, pp. 668-681.
- Laughlin, S. P. (1999), "An ERP game plan", *Journal of business strategy*, Vol. 20 No.1, pp. 32-37.
- Lee, J. C., & Myers, M. D. (2004), "Dominant actors, political agendas, and strategic shifts over time: A critical ethnography of an enterprisesystems implementation", *The Journal of Strategic Information Systems*, Vol. 13 No.4, pp. 355-374.
- Lichtenthaler, U., & Lichtenthaler, E. (2009), "A capability-based framework for open innovation: Complementing absorptive capacity", *Journal of management studies*, Vol. 46 No. 8, pp. 1315-1338.
- Lin, L.-M., & Hsia, T.-L. (2011), "Core capabilities for practitioners in achieving e-business innovation", *Computers in Human Behavior*, Vol. 27 No. 4, pp. 1884-1891.
- Lindell, Michael K., & Whitney, David J. (2001), "Accounting for common method variance in cross-sectional research designs", *Journal of Applied Psychology*, Vol. 86 No.1, pp. 114-121.

- Liu, Y., Chen, X., and Ralescu, D.A. (2015), "Uncertain currency model and currency option pricing", *International Journal of Intelligent Systems*, Vol.30 No.1, pp. 40-51.
- Loh, M. (1998), *"Managing Change in these Hard Times"*.
- Markus, M. L. (1983), "Power, politics, and MIS implementation", *Communications of the ACM*, Vol. 26 No. 6, pp. 430-444.
- Markus, M. L., & Robey, D. (1983). "The organizational validity of management information systems", *Human Relations*, Vol. 36 No. 3, pp. 203-226.
- Martins, L. L., Rindova, V., P., & Greenbaum, B. E. (2015), "Unlocking the hidden value of concepts: a cognitive approach to business model innovation", *Strategic Entrepreneurship Journal*, Vol. 9 No.1, pp. 99-117.
- Mason, K., & Spring, M. (2011), "The sites and practices of business models", *Industrial Marketing Management*, Vol. 40 No.5, pp. 1032-1041.
- Massa, L., Tucci, C., & Afuah, A. (2017), "A critical assessment of business model research", *Academy of Management Annals*, Vol. 11 No.1, pp. 73-104. doi:10.5465/annals.2014.0072.
- Mathieson, K., & Keil, M. (1998), "Beyond the interface: Ease of use and task/technology fit", *Information & Management*, Vol. 34 No.4, pp. 221-230.
- Mathieson, K. (1991), "Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior", *Information systems research*, Vol. 2 No. 3, pp. 173-191.
- Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman Jr, H. J. (1978), "Organizational strategy, structure, and process", *Academy of management review*, Vol. 3 No. 3, pp. 546-562.
- Miller, D. (1992), "Generic strategies: classification, combination and context", *Advances in strategic management*, Vol. 8, pp. 391-408.
- Mohnen, P., & Hall, B. H. (2013), "Innovation and productivity: An update", *Eurasian Business Review*, Vol. 3 No. 1, pp. 47-65.
- Molina-Castillo, F. J., & Munuera-Aleman, J. L. (2009), "New product performance indicators: Time horizon and importance attributed by managers", *Technovation*, Vol. 29 No.10, pp. 714-724. doi:10.1016/J.Technovation.2008.11.005.
- Morton, N. A., & Hu, Q. (2008), "Implications of the fit between organizational structure and ERP: A structural contingency theory perspective", *International Journal of Information Management*, Vol. 28 No.5, pp. 391-402.
- Nazir, S., & Pinsonneault, A. (2012), "IT and firm agility: an electronic integration perspective", *Journal of the Association for Information Systems*, Vol. 13 No. 3, pp. 150.
- Ngai, E. W., Law, C. C., & Wat, F. K. (2008), "Examining the critical success factors in the adoption of enterprise resource planning", *Computers in industry*, Vol. 59 No. 6, pp. 548-564.
- Palo, T., & Tähtinen, J. (2013), "Networked business model development for emerging technology-based services", *Industrial Marketing Management*, Vol. 42 No. 5, pp. 773-782.
- Podsakoff, P. M., MacKenzie, S. B., Podsakoff, N. P., & Lee, J. Y. (2003), "The mismeasure of man (agement) and its implications for leadership research", *The Leadership Quarterly*, Vol 14 No. 6, pp. 615-656.
- Porter, M.E. (1980), *"Competitive Strategy"*, The Free Press, New York, NY.
- Prahalad, C. K. (2009), "In volatile times, agility rules", *Business Week* 80. September 21.
- Preacher, K. J., & Hayes, A. F. (2008), "Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models", *Behavior research methods*, Vol 40. No. 3, pp. 879-891.
- Rapp, A., Beitelspacher, L. S., Schillewaert, N., & Baker, T. L. (2012), "The differing effects of technology on inside vs. outside sales forces to facilitate enhanced customer orientation and interfunctional coordination", *Journal of Business Research*, Vol. 65 No. 7, pp. 929-936.
- Robbins, S.P. (1996), *"Organizational Behavior: Concept, Controversies, Applications"* (7th ed.), Prentice Hall International Edition.

- Román, S., & Rodríguez, R. (2015), "The influence of sales force technology use on outcome performance", *Journal of Business & Industrial Marketing*, Vol 30. No. 6, pp. 771-783.
- Román, S., Rodríguez, R., & Jaramillo, J. F. (2018), "Are mobile devices a blessing or a curse? Effects of mobile technology use on salesperson role stress and job satisfaction", *Journal of Business & Industrial Marketing*, Vol 33 No. 5, pp. 651-664.
- Saeed, S., Shaikh, A., Memon, M. A., Memon, M. H., Abassi, F. A., & Naqvi, S. M. R. (2017), "Implementation of Failure Enterprise Systems in Organizational Perspective Framework", *International Journal Of Advanced Computer Science And Applications*, Vol. 8 No.5, pp. 54-63.
- Sambamurthy, V., Bharadwaj, A., & Grover, V. (2003), "Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms", *MIS quarterly*, pp. 237-263.
- Scheer, A. W., & Habermann, F. (2000), "Making ERP a success", *Communications of the ACM*, Vol. 43 No. 4, pp. 57-61.
- Seely Brown, J. (2006), "*The business model: Connecting internal and external innovation*". In H.W. Chesbrough (Ed.) *Open innovation: The new imperative for creating and profiting from technology*: 63. MA: Harvard Business School Press
- Seethamraju, R., & Sundar, D. K. (2013), "Influence of ERP systems on business process agility", *IIMB Management Review*, Vol. 25 No. 3, pp. 137-149.
- Shankar, V., & Bayus, B. L. (2003), "Network effects and competition", *Strategic Management Journal*, Vol. 24 No. 4, pp. 375-384.
- Silverman, D. (2010), *Doing Qualitative Research*, 3rd ed., Sage, London
- Simon, H., 1962, "The architecture of complexity", *Proc. Am. Philosophical Soc.* Vol.106, pp. 467-482.
- Snihur, Yuliya, & Tarzijan, Jorge. (2018), "Managing complexity in a multi-business-model organization", *Long Range Planning*, Vol. 51 No.1, pp- 50-63.
- Sorescu, A. B., Frambach, R. T., Singh, J., Rangaswamy, A., & Bridges, C. (2011), "Innovations in retail business models", *Journal of Reatiling*, Vol. 1 No.1, pp. 1-16.
- Stacey, R. D. (1995), "The science of complexity: An alternative perspective for strategic change processes", *Strategic management journal*, Vol. 16 No. 6, pp. 477-495.
- Sun, H., Ni, W., & Lam, R. (2015), "A step-by-step performance assessment and improvement method for ERP implementation: Action case studies in Chinese companies", *Computers in Industry*, Vol. 68, pp. 40-52.
- Spieth, P., & Schneider, S. (2016), "Business model innovativeness: designing a formative measure for business model innovation", *Journal of Business Economics*, Vol. 86 No. 6, pp. 671-696.
- Stratman, J. K., & Roth, A. V. (2002), "Enterprise resource planning (ERP) competence constructs: two-stage multi-item scale development and validation", *Decision Sciences*, Vol.33 No. 4, pp. 601-628.
- Taran, Y., Boer, H., & Lindgren, P. (2015), "A Business Model Innovation Typology", *Decisions Sciences*, Vol. 46 No. 2, pp. 301-331.
- Teece, D. J. (2010), "Business models, business strategy and innovation", *Long Range Planning*, Vol. 43 No. 1, pp. 172-194.
- Teddlie, C., & Tashakkori, A. (2009), "*Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*", Sage.
- Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991), "Personal computing: toward a conceptual model of utilization", *MIS quarterly*, pp. 125-143.
- Uwizeyemungu, S., & Raymond, L. (2012), "Impact of an ERP system's capabilities upon the realisation of its business value: a resource-based perspective", *Information Technology and Management*, Vol. 13 No.2, pp. 69-90.

- 1  
2  
3 Van Everdingen, Y., Van Hillegersberg, J., & Waarts, E. (2000), "Enterprise resource planning:  
4 ERP adoption by European midsize companies", *Communications of the ACM*, Vol. 43 No. 4,  
5 pp. 27-31  
6  
7 Velu, C., & Stiles, P. (2013), "Managing decision-making and cannibalization for parallel business  
8 models", *Long Range Planning*, Vol 46 No. 6, pp. 443-458.  
9  
10 Velu, C. (2015), "Business model innovation and third-party alliance on the survival of new  
11 firms", *Technovation*, Vol. 35, pp. 1-11.  
12  
13 Voelpel, S., Leibold, M., Tekie, E., & Von Krogh, G. (2005), "Escaping the red queen effect in  
14 competitive strategy: Sense-testing business models", *European Management Journal*, Vol 23  
15 No. 1, pp. 37-49.  
16  
17 Volkoff, O. (1999), "Using the structurational model of technology to analyze an ERP  
18 implementation", *AMCIS 1999 Proceedings*, 84.  
19  
20 Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016), "Discriminant validity  
21 testing in marketing: an analysis, causes for concern, and proposed remedies", *Journal of the*  
22 *Academy of Marketing Science*, Vol. 44 No.1, pp. 119-134. doi:10.1007/s11747-015-0455-4  
23  
24 Weick, K.E. (1979), *The Social Psychology of Organizing Reading*, Addison-Wesley, Reading,  
25 MA.  
26  
27 Williamson, O. E. (1981), "The economics of organization: The transaction cost approach",  
28 *American journal of sociology*, Vol. 87 No. 3, pp 548-577.  
29  
30 Wirtz, B., & Daiser, P. (2018), "Business model innovation processes: A systematic literature  
31 review", *Journal of Business Models*, Vol. 6 No. 1, pp. 40-58.  
32  
33 Yin, R.K. (2009), *Case study research: Design and methods*, Thousand Oaks, CA.  
34  
35 Zikmund, W., Babin, B., Carr, J., and Griffin, M. (2012), *Business Research Methods*: Cengage  
36 Learning., *H4 B*.  
37  
38 Zott, C., & Amit, R. (2008), "The Fit between Product Market Strategy and Business Model:  
39 Implications for Firm Performance", *Strategic Management Journal*, Vol. 29 No.1, pp. 1-26.  
40  
41 Zott, C., & Amit, R. (2007), "Business model design and the performance of entrepreneurial  
42 firms", *Organization science*, Vol. 18 No. 2, pp. 181-199.  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60