



## Organizational Agility Conceptual Model

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### ABSTRACT

*Organizational agility is a complex and multidimensional concept. One of the challenges in researching organizational agility is its unified definition and concept. Literature analysis reveals various dimensions and frameworks are used to analyze organization agility. Many of them focus on narrow industry or only approach the organizational agility concept from limited perspective. This article attempts to combine different approaches and angles to organizational agility to a more cohesive and encompassing conceptual model that is applicable to variety industries and organizations. The variety and combination of attributes, characteristics, capabilities, and practices make the measurement of organizational agility are analyzed. Building on research main frameworks for analyzing organizational agility concept are identified. Conceptual organizational agility model based on organizational agility attributes, capabilities and practices framework is presented. This article contributes to research by providing more unified concept, which can be adapted in studying organizational agility in a wide and global range of organizations, regardless of the industry they operate in.*

## INTRODUCTION

Organizations are constantly facing change. Globalization, fast technological advances, competition, disruptive business models, emerging new markets, constantly evolving consumer preferences – are daily challenges for most big and small organizations. Combined with more traditional risks of business and economy lifecycles, these everchanging challenges force organizations to become more efficient and agile in order to survive. According Kazlauskienė, Bartusevičienė, Tamulienė (2017) a lot of discussions on the variety and identification of individual abilities and/or general competences arise. There is a lack of unanimous approach among scholars. Authors determined the potential of leveraging abilities to increase income of country population by distinguishing abilities in the context of intangible assets definition and evaluation.

Organizational agility is increasingly growing in significance as one of the main tools for gaining and maintaining a competitive advantage in the fast-changing market environment. Agility is be-

coming one of the key organizational characteristics that business practitioners seek in order to stay adaptive and competitive in turbulent environments.

Due to increasing popularity of e-commerce, even small-size businesses are able to compete on a global scale. These developments further increase the need for organizational agility in order to adapt and compete outside home markets. To take advantage of emerged global opportunities, companies have to have efficient and agile business processes, flexible organizational structure, open-to-change workforce, agile networks and partners, and easily adaptable technology.

Consumer habits and needs constantly change as well. The current age of information abundance and speed provides new levels of choice for the customers. Customers are becoming more knowledgeable. Product and service reviews, user ratings are available instantly for the judgment and choice by consumers. Ability to select the best service provider or business partner at moment's notice gives new meaning for a competitive marketplace. In order to stay competitive companies should not only provide great product or service but also be ready to change and customize them to accommodate the ever-changing customer tastes and expectations. Agility allows organizations to adapt to the changing market situation, customer expectations and plays a major role in organizational survival in the consumer-driven environment.

In order to effectively compete in changing market environment, organizations have to be proactive and anticipate change. To achieve that, organizational structures should allow for greater agility, through flexibility and response. Švagždienė, Jasinskas, Simanavičius (2017) suggested that even though views of the various interested groups on the preferred business practices are quite different, however, many of them have a common denominator and can be harmonized. The success of learning organization depends on the values conveyed. Practitioners need new organizational solutions, forms, and tools to embrace the changing environment and capture new opportunities. Successful adaptation to external forces requires agile organizational enablers, abilities, and practices. In order to control and improve agility level, organizations need to be able to understand agility and identify which internal organizational factors affect it.

The *aim of the article* is to combine different approaches and angles to organizational agility to a more cohesive and encompassing conceptual model that is applicable to variety industries and business organizations. The *methods of research* include the following: analysis of scientific literature, the conceptual organizational agility model is a basis for further studies, research, practical applicability and measurements of agility level.

## 1. THE CONCEPT OF ORGANIZATION AGILITY

While organizational flexibility has been studied for the last few decades and many attempts have been made to define agility in the business organizations. However, most definitions focused on separate functional areas of the businesses. By Wendler (2013), only recently organizational agility - as entire enterprise phenomena, gained more interest from researchers.

Organizational agility is a multidimensional and complex topic and is approached by many researchers from different perspectives. One camp of the researchers Alberts & Hayes, (2003); Bottani (2010); Cai (2013); Charbonnier-Voirin (2011); Eshlaghy et al. (2010); Giachetti et al. (2003); Jackson & Johansson (2003); Lin et al.(2006); Ren et al.(2009); Sharifi & Zhang (2001); Yusuf et al. (1999) study agility from the perspective of enablers and capabilities which help organizations to achieve agility. The second group of researchers Charbonnier-Voirin (2011); Gehani (2010); Goldman et al.(1995); Sherehiy et al. (2007); Vázquez-Bustelo et al.(2007) identify main practices that agile organizations use in their daily operations. Third group of researchers Dove (2005); Dyer & Shafer(2003); Holsapple & Li(2008); Lu & Ramamurthy(2011a); Nijssen & Paauwe (2012); Sambamurthy et al.(2003); Singh & Sharma(2013); Wright & Snell (1998) approaches agility from the perspective of how organizations interact with changing environment through sense-response dimension.

Most of the earlier research is concentrated only on specific industry of organizations, in particular – manufacturing sector, where researchers analyze what manufacturing organization can do to enhance their agility (Ganguly et al., 2009; Jackson & Johansson, 2003; Yang & Li, 2002; Yauch, 2011; Yusuf et al., 1999). Others evaluate agility in a narrow context of business process or area – e.g. supply chain agility (Ren et al., 2009; Sharifi & Zhang, 2001; Van Hoek, 2001), human resource agility (Breu et al., 2002; Shafer, 1997), knowledge management and IT capabilities (Cai, 2013; Kassim & Zain, 2004; Lu & Ramamurthy, 2011b; Sarker & Sarker, 2009; Singh et al., 2013), business processes (Arteta & Giachetti, 2004), strategic alignment (Tallon & Pinsonneault, 2011), market orientation (Grewal & Tansuhaj, 2001). Lin et al., (2010) focuses on agility properties in organization networks.

Recently, researchers have increased focus on IT, learning and innovations effect on agility level in an organization and its performance (Cegarra-Navarro et al., 2016; Khoshlahn & Ardabili, 2016; Ravichandran, 2017). Few of the researchers analyze how organizational agility influences competitive advantage (Côte-Real et al., 2017; Mikalef & Pateli, 2017). Other analyses focus on individual factors and their influence on organizational agility. For example, Panda & Rath (2017), Mikalef & Pateli (2017), Felipe et al. (2016), Yeganegi & Azar (2012) study how information technology capabilities affect agility level in the organization. Their empirical research shows the direct positive correlation between IT capabilities and agility level in the organization, i.e. the better IT capabilities organization has, the more agile it is.

As literature review reveals, organizational agility has its roots in manufacturing context. It was defined as a manufacturing system which is able to meet the needs of a changing marketplace, shifts quickly between products, in real time in order to adapt to changing customer needs. Early agility research (Goldman et al., 1995; Sharifi & Zhang, 2001; Yusuf et al., 1999) characterized agility as an ability to reconfigure manufacturing system in order to respond to unpredictable changes in the market. The ability to reconfigure entails utilization of structural and infrastructural elements, which adds to the position that agility is a more encompassing capability compared to flexibility (Attafar et al., 2012). By synthesizing existing technologies and production methods (Goldman et al., 1995), combining managerial and manufacturing tools (Sharifi & Zhang, 2001) with the help of people and processes organizations are able to reach agility. Literature often confuses definitions of organizational agility and manufacturing agility, due to mixing performance outcomes and manufacturing processes (Narasimhan et al., 2006). Researchers conceptually differentiate organizational agility – a performance capability, from agile manufacturing systems – cluster of related practices (Attafar et al., 2012).

Goldman et al. (1995) introduced the concept of agile enterprise strategy and vision, by defining the agile organization as one which is profitable in continuously changing environment and is able to adapt to unpredictable consumer habits. Dove (1996) proposed that organizational agility level depends on a balance of its four dimensions: cost, time, quality and scope. Yusuf et al. (1999) argued that organizational agility level is influenced by aligning “competitive bases” (speed, flexibility, innovation proactivity, quality, and profitability), reconfigurable resources and knowledge. In order to improve organizational agility level, companies have to combine these enablers and adapt to consumer needs and changing marketplace. Referring back to the discussion of the differences between organizational flexibility and agility, from Yusuf et al. (1999) definition possible distinction between these two terms can be identified, with the flexibility being an inclusive enabler for organizational agility and emphasis on speed.

The concepts of speed and innovation as key properties of organizational agility was brought up by (Lu & Ramamurthy, 2011a). They define agility as an organizational capability to deal with unexpected changes in the environment via rapid and innovative responses, which help to take advantage of those changes. Speed is one of the most important requirements for agility in terms of response and implementation, while innovativeness refers to the quality and substance of response (e.g. strategic orientation, product development, decision-making) (Cai, 2013).

Review of various organizational agility definitions in the scientific literature allows identifying common themes and building blocks of organizational agility. In the simplest form, enterprise agility can be defined as organization's ability to identify changes in the environment and respond accordingly. *Ability to recognize* the changes in the environment refers to the know-how, experience, and knowledge of the organization and its decision makers. Dove (1999) refers to this ability as 'knowledge management'. *Environmental change* is also present in other definitions of organizational agility as 'competitive market opportunities' (Sambamurthy et al., 2003), 'dynamic and continuous change' (Sarkis, 2001); and referred as changes arising from competitor's actions, consumer preferences, regulatory or legal changes, economic shifts, technological advancements etc. (Overby et al., 2005). *Ability to respond* or 'seize' (Sambamurthy et al., 2003), 'reconfigure' (Sharifi & Zhang, 2001) is an ability to act in response to the changes and in the situation dictated by the environment and internal resources and abilities. Identification of abilities that help organizations to respond to the environmental changes and their evaluation is one of the purposes of this article.

Overby et al., (2005) adds a strategic element to the process of sensing the changes and responding to them. Response to the changes has to be *appropriate* and factor in the quality and cost of the actions. The response has to support organizational goal (e.g. market share increase, international expansion, strengthening competitive position, etc.) and adjust to the change so that it helps in advancing towards these goals. On the other hand, the pursuit of short-term market opportunities may distract the organization from long-term strategic focus. Such short-term market opportunities can be risky, capital-intensive, or unprofitable.

Putting together all these elements of organizational agility allows to generate the following definition: *organizational agility is an organizational ability to recognize unexpected changes in the environment and appropriately respond in a swift and efficient manner, by utilizing and reconfiguring internal resources, thus gaining competitive advantage in the process.*

## 2. ORGANIZATIONAL AGILITY FRAMEWORKS

Many frameworks and models analyze agility and its characteristics in a different context, therefore they differ in content and structure, which leads to organizational agility definition issues. Some of the frameworks and definitions do not apply to the whole organization, others are too narrow and cover specific industry. Literature review reveals that there is no consensus about the construct of agility, which makes the empirical research difficult (Wendler, 2013). In order to build the basis for empirical research, further distilling of the agility theory is needed and agility domain with applicable frameworks has to be selected. Based on Wendler (2013) and literature review, different agility frameworks can be categorized under four domains: agile manufacturing, agile software, agile workforce and agile organization/enterprise.

For most of the domains, agility frameworks are interrelated and have similar themes: organizational culture, workforce, customers, organizational abilities, technology, which are represented in each separate domain with an emphasis on that particular domain (Wendler, 2013). For example, studies in both agile manufacturing and agile software development domains analyze the effect of the agile workforce, however, with former, the emphasis is on manufacturing organization employees, while the latter focuses on software developers. Therefore, it is important to distinguish domains and discuss them as separate areas of research. It allows to simplify and focus already the multidimensional concept of agility and act as a development process which grows into encompassing organizational agility domain.

Main agility domains are well researched; however, they mostly focus on their own respective field. A large number of publications cover agile manufacturing, agile software development, and agile workforce perspectives. However, there is a lack of studies addressing the conceptualization and development of integrated and holistic agile enterprise concept (Sherehiy et al., 2007). Although enterprise agility concept started together with agile manufacturing idea development, the

most interest organizational agility gained only recently – after the increased attention to the agile software development concept. This shows the increased interest in the effects of agility on the entire organization, not only on separate functional or structural areas (Wendler, 2013).

Development of organizational framework, which is unified and applicable to different organizations is a difficult challenge. Organizational agility frameworks are not yet clearly defined and conceptualized. According to Sherehiy et al. (2007), some of the approaches to organizational agility are too broad and imprecise, that involves all definitions, practices, and technologies used in the industry over the last two decades. This approach synthesizes agile manufacturing, flexible production technologies, Just-in-Time production, Total Quality Management, lean manufacturing, workforce empowerment under the same coverage of agile organization concept. The idea is that only agile organization is able to utilize various new methods and technologies and take the most advantage of it. Based on this approach it is clear why organizational agility concept was and is somewhat confusing and difficult to classify. On the other hand, the second approach to organizational agility is much more narrow and focused and distinguishes it from all other organizational methods. An agile organization is different from lean manufacturing, TQM, JIT or even agile manufacturing concepts, as it covers the whole organization, while these concepts are only a collection of operational techniques and methods that mostly apply to manufacturing organizations. The agile organization extends the manufacturing concept and encompasses different organizational elements, goals, and objectives, allowing them to adapt to unexpected and fast changes in a dynamic business environment (Sherehiy et al., 2007).

Literature analysis shows that most of the organizational agility research could be divided into 3 main approaches or frameworks, based on the dimensions and focus they use. Each framework has a similar approach to agility in organization and concepts to describe it. One camp of the researchers (Alberts & Hayes, 2003; Bottani, 2010; Cai, 2013; Charbonnier-Voirin, 2011; Dyer & Shafer, 1998; Eshlaghy et al., 2010; Giachetti et al., 2003; Jackson & Johansson, 2003; Lin et al., 2006; Ren et al., 2009; Sharifi & Zhang, 2001; Yusuf et al., 1999) use the framework of agility *enablers and capabilities* which help organizations to achieve agility. The second group of researchers (Charbonnier-Voirin, 2011; Gehani, 2010; Goldman et al., 1995; Sherehiy et al., 2007; Vázquez-Bustelo et al., 2007) try to identify main *practices* that agile organizations use in their daily operations. Third group of researchers (Dove, 2005; Holsapple & Li, 2008; Lu & Ramamurthy, 2011a; Nijssen & Paauwe, 2012; Sambamurthy et al., 2003; Singh & Sharma, 2013; Wright & Snell, 1998) developed the framework based on *sense-response dimensions*. Sense-response framework sees organizational agility through the two perspectives: abilities to identify opportunities and ability to act upon them in an efficient manner. All three approaches are discussed in more detail in the following sections. Discussion of each approach helps to construct a more holistic and inclusive model of organizational agility in further sections of this article.

## 2.1. Enabler-capability framework

The main purpose of agility in an organization is to better adjust to change and gain competitive advantage and to take opportunities from changes in the environment and thrive in uncertainty and unpredictability. Therefore, agile enterprises need a set of capabilities and enablers to respond to such change. The framework of enablers and capabilities is based on the premise that agile organization can achieve competitive advantage in changing the environment. This framework can approach organizational agility subject from two dimensions: static and dynamic. Static dimension refers to the question “What organizational *has* that makes it agile?” and focuses on the structural aspects of the organization. While dynamic dimension attempts to answer the question “What organization *is able* to do, in order to be more agile?” and focuses on abilities of the organization. Both dimensions are mutually dependable on each other. The organization cannot be agile if it only relies on the structural element. Having newest technology or organizational

structure will not provide the benefit if it is not properly utilized in order to respond to changing the environment. While having knowledgeable employees and ability to be agile will be ineffective if organizational structure is not flexible enough and restricting. Therefore, both dimensions are important and should be used and developed together when aiming for higher organizational agility level.

Enablers and capabilities framework has roots in agile manufacturing, where established processes and activities have to be changed often to adjust to the changes in customer demand or market conditions, therefore e.g. flexibility of the processes is one of the enablers that organization has. Different researchers use different terms to identify the features of the agile organization has and call them enablers, attributes, providers, levers etc. Authors of this article use term 'enabler', as it more accurately describes the context (according to Cambridge Dictionary (2016) "*enabler*, noun. – Something or someone that makes it possible for a particular thing to happen or be done")

Yusuf et al. (1999) bases essential organizational agility enablers on main competitive foundations of agility: speed, flexibility, innovation, proactivity, quality, and profitability. Agility enablers are used as leverage to achieve agile capabilities (Bottani, 2010; Eshlaghy et al., 2010; Gunasekaran, 1999). Gunasekaran (1999), discusses seven enablers of agile manufacturing: virtual enterprise formation tools and metrics, physically distributed teams and manufacturing, rapid partnership formation tools and metrics, concurrent engineering, integrated product, production, business information system, rapid prototyping tools, and electronic commerce. Agile *capabilities* refer to whether the organization is able and *can do* what is necessary in order to be more agile. Agile capabilities allow organizations to respond effectively to change and reach competitive advantage. Various researchers use different terms to name those capabilities: responsiveness, quickness, innovation, knowledge management, learning (Charbonnier-Voirin, 2011; Dove, 1999; Sharifi & Zhang, 2001). Charbonnier-Voirin (2011) groups different aptitudes into three key organizational agility capabilities. First one - the ability to mobilize a rapid response to change – is based on reactive flexibility and refers to an ability to organize existing resources. Second capability – aptitude to read the market - refers to the organizational ability to see the changes in the market and identify the opportunities. The third capability in Charbonnier-Voirin (2011) framework – aptitude to integrate organizational learning, refers to the organizational capacity to align employee skills and experience with those of organization

Other authors identify similar organizational capabilities that help organizations to deal with challenges arising from environmental change, and summarize them according to four principles: responsiveness, competency, flexibility/adaptability, and quickness/speed (Eshlaghy et al., 2010; Giachetti et al., 2003; Lin et al., 2006; Ren et al., 2009; Sharifi & Zhang, 2001; Yusuf et al., 1999). Macro perspective on the organizational capabilities can identify organizational agility as a higher-order dynamic capability itself, which can enhance performance by effectively adjusting organization to environmental changes (Cai, 2013).

## 2.2 Organizational agility practices and processes

This approach towards organizational agility asks a question "What organization *does* to be agile". Not exactly a framework in the sense of structured approach to study agility, however an important dimension and focus, as it emphasizes the utilization of enablers and capabilities in improving organizational agility. The focus lies on the practices and processes of the organization aiming towards agility, although there is a lack of consensus in the literature. For example, Yusuf et al. (1999) use enablers and practices as synonyms. They offer a general list of enablers under ten domains: the introduction of new products, the formation of partnerships, continuous improvement, short conception/production of deadlines, decentralized decision-making, response to market requirements, etc. These enablers can be turned into actions or practices, e.g. formation of partnerships is not a static ability, but rather an action which utilized people and networking skills to form successful partnerships.

It is important to distinguish the framework of enablers and framework of practices. Enablers or characteristics is what abilities, features, and capabilities organization *has*. However, it does not mean that organization is actually using those agility enablers in order to become agile and achieve competitive advantage while adapting to the fast-changing environment and seizing market opportunities. The action or practice is what distinguishes agile organizations from the rest, as it utilizes those enablers and characteristics that organization *has*. Agile abilities and enablers can be wasted if not properly used. Or they can be too costly or time-consuming. At the same time, an organization might not have any of the necessary agility enablers and still be able to aim towards and improve organizational agility level by practice alone. Therefore, constant practicing of agility is much more important than just mentioning or identifying it as another organizational enabler.

Goldman et al. (1995) identify four dimensions that organizations should aim towards in order to stay competitive and achieve agility. The dimensions can be interpreted as activities or practices that organization should perform continuously: enrich the customer, cooperate, organize for change, and leverage the impact of people and information. Similarly to Goldman et al. (1995), Charbonnier-Voirin (2011) identifies practices that are important in the agile organization and structure them into four main categories: practices directed towards mastering change, practices promoting the value of human resources, cooperative practices, and practices to create value for customers.

In order to implement the agility-based strategy, Gehani (2010) recommends to use the following actions and implement practices based on them: front-line decision-making empowerment, cross-functional team sharing, modular integration of available technologies, delayed design specification, product succession planning, enterprise-wide integration of learning. Empowerment of employees allows the organization to shorten the decision-making time, reduces delays, improves response and delivery times. In process employees are more involved and motivated, the organization is more agile in responding to changes and customers are satisfied due to improved service.

Organizations may not have necessary enablers or capabilities to become agile by simply activating them, Organizational agility is a process and needs to be changed constantly in order to adapt to constantly changing the environment. Thus high organizational agility level becomes a goal and organizations set different strategies in achieving these goals in a most efficient and effective way. By acting towards these goals, organizations start to utilize, develop or invent different enablers and capabilities necessary for organizational agility.

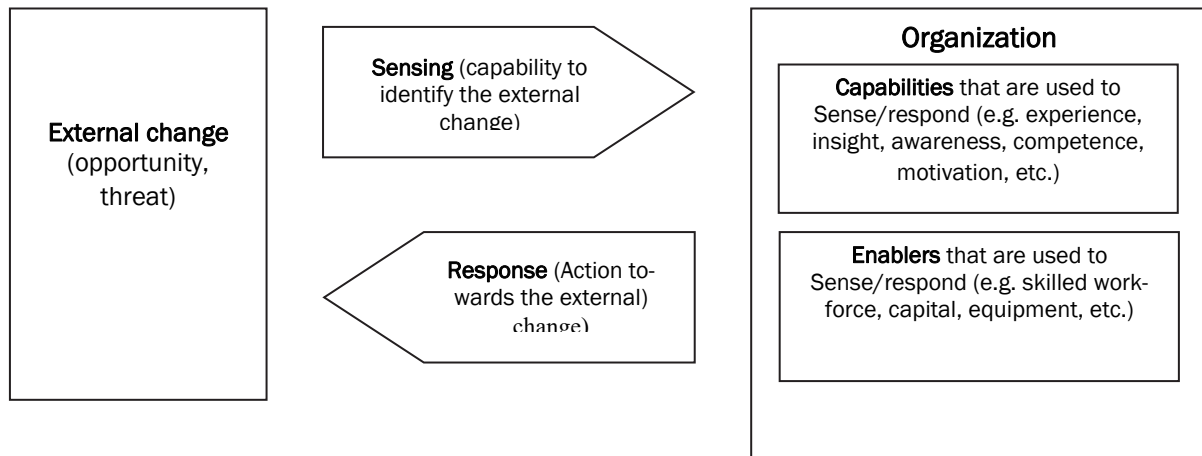
## 2.3 Sense-response framework of organizational agility

The overview of both: enablers-capabilities framework, and practices approach, reveals some commonalities. Most of the researchers, discussing organizational agility using these frameworks rely on two main dimensions: sensing dimension and response dimension. The process of change is highly influenced by these dimensions. A catalyst for change, or organizational agility driver, usually occurs externally. Whether it is a change in customer tastes, competitor behavior or industry changes, they all influence organization from outside. In order to take advantage of these changes and utilize them as opportunities, first organizations must be able to recognize them and acknowledge. This ability or act of recognition by itself highly depends on the organizational abilities and people skills, experience and know-how.

Organizational agility within sense-response framework (Figure 1) can be described as a process of events, with sensing ability as a first step (sub-process). Once external threats or opportunities are identified, the organization has to identify whether it can cope with these changes: are external changes applicable to the organizational existing status and future strategic goals; are these changes potentially benefit an organization; can organizational actually do something about

those changes. The ability to utilize internal and external organizational resources (capabilities and enablers) in response to environmental changes is a second sub-process in the sense-response framework. The organizational response is highly dependent on its capabilities and enablers. Once the decision to act towards an external change is made, the organization uses its capabilities and enablers to respond to the opportunity or threat. This complex process of evaluation and effective action to external stimuli is the basis for successful agile organization, based on the sense-response framework.

**Figure 1.** Sense-response framework



Source: Authors' estimation.

Sense-response framework stands out of other frameworks (enabler-capability and practice) as it encompasses both of the previously discussed frameworks into a cohesive structure, based on constant process and action. According to Singh & Sharma (2013), sense-response framework can be explained by the concept of the magnitude of variety change (flexibility) and rate of generating a variety of change (speed). The flexibility component represents a structural dimension of organizational change and shows the degree to which organization is able to *respond* by changing its practices, products, services or processes. While second concept – speed, represents how fast organization can *sense* the market changes and adapt to them (Singh & Sharma, 2013).

*Sensing dimension* in sense-response network focuses on the abilities to see the external changes. It is directed outwards of the organization. This dimension is highly dependant on experience and abilities of decision-makers in the organization and their personal abilities. Lu & Ramamurthy (2011a) refer to this dimension of organizational agility as market capitalizing agility, as it focuses not only on collecting and processing external and internal information but also on the internal abilities. The organization reaches agility when it can effectively match external changes in the market and customer needs with internal abilities to meet those changes and needs.

To achieve high organizational agility level just sensing abilities are not enough. Once organization realizes that it has to change and adapt to the new environment using sensing abilities, it has to have abilities that empower the internal change. These abilities can vary from one organization to another, however, some commonalities exist. *Response dimension* in a sense-response framework focuses on the internal abilities of the organization to respond to the environmental changes. Lu & Ramamurthy (2011b) call it operational adjustment agility as it focuses on an internal maneuvering to provide fast response to changes and is reactive in nature.



One of the purposes of this article is to identify the common response abilities that successful organizations share and enable them to reach agility. Response-ability involves various dimensions within the organization and with its partners and is complex in nature, as it involves various levels and dimensions of the organization. Organizations should have a flexible structure, which allows shifting resources easily. Organizational culture should encourage change and empower employees to adapt to the new strategy. The external network should also support organizational agility. Suppliers, outsourced services, partners and other members of the external organizational network should be able to adapt to the changing demands and promote agility. Responsive capabilities refer to the ability to select available actions and enable those actions. When the change occurs in the environment or organization pro-actively identifies opportunities it has to select the appropriate action to take from the alternative ones. Decision makers have to evaluate available opportunities, coordinate and integrate with the rest of the functional areas and outside partners, learn from the experience and reconfigure available resources if necessary (Holsapple & Li, 2008).

Although this dimension is not singled out in organizational agility research, many of the agility definitions have one or few elements that emphasize the importance of qualitative elements of organizational agility. Organizational agility on its own will not be of value to the company if it is too expensive and costs exceed the benefits of being agile. *Effectiveness dimension* gives a framework to achieve a high level of organizational agility practicality. Organizational agility will not be effective and practical if processes take too long to implement compared to market conditions, which change faster than organization is able to adapt. Therefore, such organizational agility effectiveness measures as cost, speed, quality, and scope, must be considered when establishing organizational agility framework (Dove, 2006).

Organizational agility can be identified as an encompassing perspective for both sense and response dimensions. Without the qualitative dimension, sense and response abilities lose its usefulness and applicability in business situations. An organization with a high level of agility, that fail at this dimension eventually may fail competitive race in a fast-changing environment. On the other hand, organizational agility based on only one qualitative dimension can act as a competitive strategy. For example, agility to adapt to the fast-changing market environment based on only cost criteria can be effective even when other elements such as speed, quality are not reached to their potential. Authors of this article believe that all three organizational agility frameworks (enabler-capabilities, practices, and sense-response) are not separate from each other. Each of them depends on the core abilities and enablers organization has. For example, organizational agility practices cannot be performed without proper infrastructures (enablers) and know-how (capabilities). In the same way, sense-response framework is in essence shifting focus towards organizational capabilities. Capability to identify shifts and changes in the environment, and capability to respond to these changes by utilizing applicable enablers which organization has. The three organizational agility frameworks are interdependent. Therefore, instead of selecting the preferred framework to approach organizational agility, authors of this article propose to combine them and offers a unified conceptual model.

### **3. ORGANIZATIONAL AGILITY CONCEPTUAL MODEL**

The development of a unified and holistic organizational agility framework is a challenging task. There are several issues with current organizational agility frameworks. As discussed in preceding sections, the first problem arises from definition and conceptualization of the agility itself. Then issues with different domains, approaches, and frameworks complicate this task even further. Each different domain identifies agility concept differently, use enablers, characteristics, capabilities, practices, that are important for that particular industry or domain. Although preceding discussion of different organizational agility frameworks reveals some similarities. One of the goals of this article is to build upon those similarities between domains, frameworks and their parts and

attempt to construct a more unified and universal framework that can be applied to different types of organizations, regardless of their industry or business model.

As a first step of the conceptual model - causes and reasons for organizational agility should be established. For the purposes of simplifying and making model applicable for a wider range of organizations, agility drivers can be narrowed down to five main categories: changes in the market, competition, customers, technologies and social factors (Eshlaghy et al., 2010; Sharifi & Zhang, 2001). These agility drivers pressure organizations to adapt to the changing environment thus maintaining or gaining competitive advantage.

There is no single set of organizational agility enablers that will fit every organization. However, based on the literature review we can identify common organizational enablers that can be applied universally. Enablers play important role in development of organizational agility (Charbonnier-Voirin, 2011). Enterprise infrastructure consists of adjustable levers used in implementing successful agile practices and can be deployed when the environment changes: structure and organization; processes; technology, human resources and network (Charbonnier-Voirin, 2011; Dyer & Shafer, 2003; Sharifi & Zhang, 2001; Yusuf et al., 1999). These enablers work together with organizational agility capabilities, by enhancing each other and compensating the weaker or less agile components of the organization.

All five enablers of the enterprise should have certain characteristics that make those enablers agile. Foremost, structure and organization should be flexible and open to change. Components of the organizational structure should be easily adaptable to the external and internal agility drivers. Agile structure and organization should have informal, flat, horizontal; with goal-oriented leadership, decentralized knowledge and control, which allows to accept risks and concentrate on teamwork (Eshlaghy et al., 2010; Sherehiy et al., 2007). Processes in the agile organization should be flexible, consist of few rules, procedures and have adaptable role definitions (Sherehiy et al., 2007).

Processes should concentrate and sense external environmental developments and promote adaptation to these changes. According to Sherehiy et al. (2007), human resource agile enabler of the organization should be proactive, adaptable, resilient, be able to collaborate, take personal initiative and responsibility, cope well with stress and unexpected changes. To develop these skills, organizations should promote employee empowerment and involvement, job rotation and enrichment (Sherehiy et al., 2007). Agile organizations should maintain flexible and adaptable networks, both internal and external. Internal networks should rely on teamwork, information and knowledge sharing. External partners, such as suppliers, contractors, distributors, etc., should be able to adapt to the changes in the business environment together with the agile organization. The fifth enabler of agile organizations – technology, should have similar flexibility characteristics as the rest of enablers. In addition, in order to adapt to the fast-changing environment, technologies should be modular, easily scalable and downgradable and have efficient cost structure.

The third component of the conceptual organization agility model consists of organizational capabilities that are interdependent with organizational enablers. Interdependency of organization agility enablers and capabilities are represented in the form of enhancing or compensating each other. For example, organization lacking some equipment or technology (enabler) to adapt to changing business environment, can compensate for the abilities of its employees (capabilities). In the same way, organizational agility enablers can be enhanced by organizational capabilities – e.g. technology combined with capable workforce can provide a very strong competitive advantage for the organization and ability to adapt to changing the environment.

Agile organization capabilities can be summarised into two main groups, based on the sense-response framework: sensing capabilities and response capabilities. Sensing capabilities refer to organizational abilities to sense external environment for threats and opportunities. One of sensing capability is awareness, which allows the organization to notice and anticipate changes in the environment. Awareness capability should also concentrate on the internal organizational ability to

address the external changes. This second sensing capability – competence, relies on organizational experience and knowledge. It allows the organization to evaluate internal abilities to cope or take advantage of external changes. For example, the organization sees the change in consumer tastes (awareness) and needs to adjust its product line (response), however, its current equipment and experience make it impossible to act on these changes (competence).

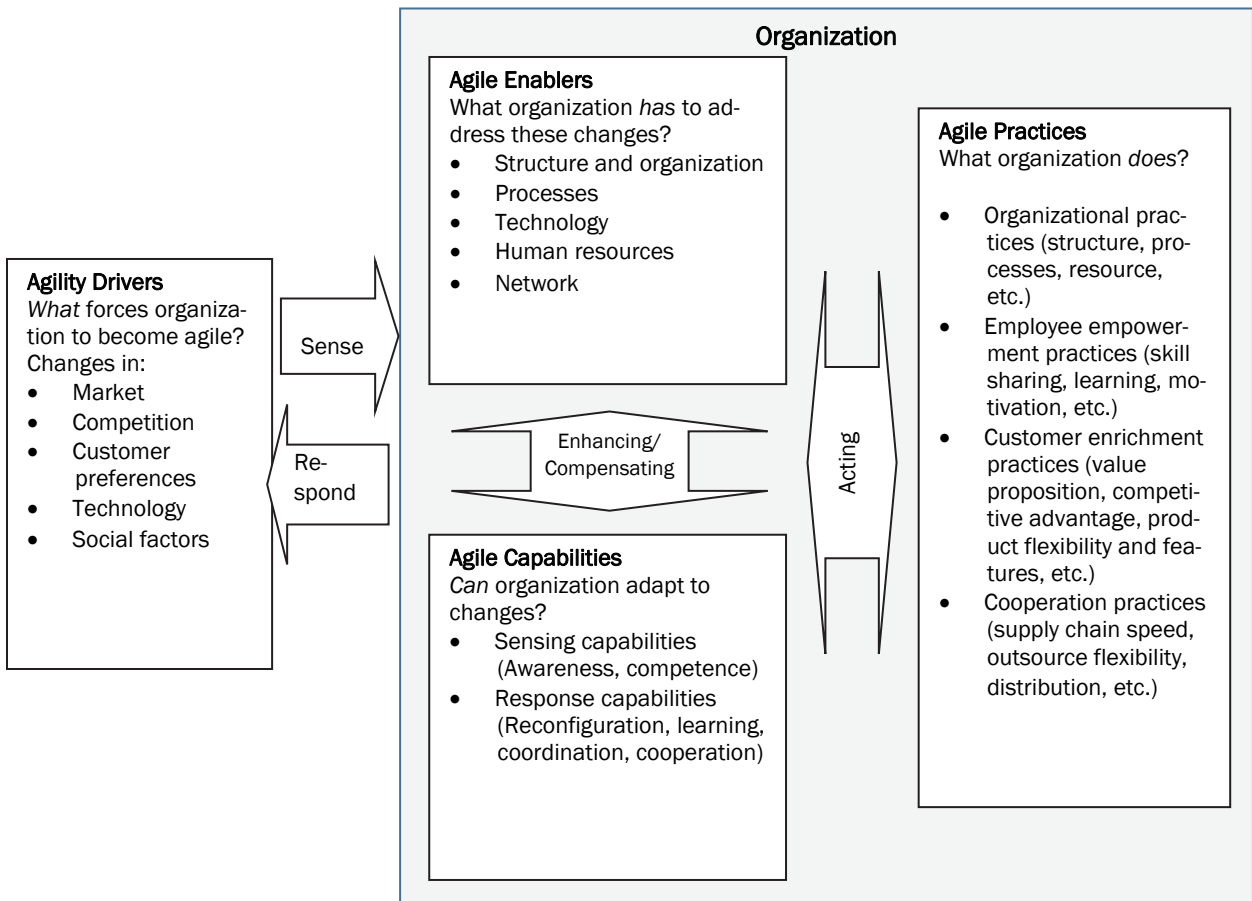
The second group of organizational agility abilities is response capabilities. Response capabilities refer to the organizational ability to act (respond) to the changes in the environment. Authors of this article use three capabilities based on dynamic capabilities theory (Sambamurthy et al., 2003; Teece, 2010): reconfiguration, learning, coordination and cooperation capabilities. According to Sambamurthy et al. (2003), response capabilities to opportunities and threats arising from changes in environment depend on the organizational ability to select appropriate actions and ability to enable those actions. Reconfiguration capability refers to organizational ability to adjust workforce, recourses and assets, partners, and processes in order to change and adapt to changing the environment, both internally and externally.

Learning capability refers to organizational ability to learn from its experience, accumulate and share know-how and develop employee skills in order to face the changes in the market. Learning capability also covers internal know-how and ability to utilize external knowledge, which is an important factor in the innovation process. Last two capabilities – coordination and cooperation are similar in scope. Former one applies to coordination of internal resources – ability to motivate employees, mobilize for change, develop and foster change culture. Cooperation capability searcher for the support from the external organizational network during the change process. It involves coordinating partners, suppliers, distributors, etc. for the objective to improve organizational agility and its ability to adapt to changing the environment.

Agile organization enablers and capabilities work together via compensation and enhancement to move the organization forward. This process leads to actions that agile organization takes in order to efficiently change and adapt to the environment. These individual actions grow into agile practices. Agile organizations take the organizational assets (enablers and capabilities) and combine them into effective and meaningful activities and practices, that increase organizational agility level. Based on literature analysis (Charbonnier-Voirin, 2011; Gehani, 2010; Goldman et al., 1995; Sherehiy et al., 2007; Vázquez-Bustelo et al., 2007), main organizational practices focus on four dimensions: organization itself, employees, customers, and partners. Organizational practices aim at the development and increasing flexibility and adaptability of organizational structure, processes, and technology. If certain organizational enablers lack agility, organizational practices should be focused on improving the characteristics of those enablers or developing capabilities required for organizational agility.

In Figure 2 presented conceptual model can be applied as a process roadmap or a flow for decision making. Organizational adaptation starts as with the change in the environment through agility drivers. Once the change is sensed and recognized, decision-makers should take inventory of current situation in the organization by answering the questions ‘what resources we have to address the changes in the environment and do we have necessary abilities to utilize those resources and adapt to the changes’. Once the inventory is established, organization decision makers should respond to the environment drivers by utilizing these of enablers and capabilities. The response is represented by action or practice, which leads to an outcome, such as the development of new product, or change in procedures. This process of adaptation to the environmental changes increases organizational agility level further through experience sharing. As business environment is constantly changing, the agile organization is also constantly applying its enablers, capabilities, and practices to adapt to these changes.

Figure 2. Organizational agility conceptual model



Source: Authors' estimation.

## CONCLUSIONS

The analysis of the literature on the organizational agility made in this article has revealed the need for unified conceptual model of organizational agility. Definitions of organizational agility in the scientific literature vary. Many researchers, however, agree that the organizational agility is a multidimensional factor the definition of which requires focusing on the country, market, and industry in which the company operates. The notion of organizational agility has been developed on completion of a comparative analysis of the literature. In this article, organizational agility is defined as organizational ability to recognize unexpected changes in the environment and appropriately respond in a swift and efficient manner, by utilizing and reconfiguring internal resources, thus gaining competitive advantage in the process.

The following organizational agility drivers, enablers, capabilities and practices have been identified on completion of the analysis and systematization of the organizational agility literature.

Agility drivers which force organizations to stay or become agile: changes in market; changes in competition; changes in customer preferences; changes in technology; changes in social and economic factors. Agility enablers refer to what resources organizations have that help them to adapt and be agile. After literature research and systematization, authors of this article identified the following agility enablers: structure and organization; processes; technology; human resources, network. Agile capabilities refer to organizations' ability to identify the external changes and act on them. They can be divided into two groups: sensing capabilities and response capabilities. Authors

of the article identified the following organizational agility practices that refer to the actions and activities agile organizations perform before or during change periods: organizational practices, employee empowerment practices and customer enrichment practices.

A theoretical model for evaluation of organizational agility level has been developed. Organizational adaptation starts as with the change in the environment through agility drivers. Once the change is sensed and recognized, decision-makers should take inventory of current situation. Once the inventory is established, organization decision makers should respond to the environment drivers by utilizing these of enablers and capabilities. The response is represented by action or practice, which leads to an outcome, such as the development of new product, or change in procedures. This process of adaptation to the environmental changes increases organizational agility level further through experience sharing. As business environment is constantly changing, the agile organization is also constantly applying its enablers, capabilities, and practices to adapt to these changes.

## REFERENCES

- Alberts, D. S., Hayes, R. E. (2003), *Power to the edge: Command and Control in the Information Age, Command & Control Research Program*, Washington.
- Arteta, B. M., Giachetti, R. E. (2004), "A measure of agility as the complexity of the enterprise system", *Robotics and Computer-Integrated Manufacturing*, Vol. 20, No. 6, pp. 495–503.
- Attafar, A., Ghandehari, M., Momeni, G. (2012), "Study of Required Organizational Base for Implementation of Agility Strategy in Organizations", *Journal of Contemporary Research in Business*, Vol. 3, No. 11, pp. 141–150.
- Bottani, E. (2010), "Profile and enablers of agile companies: An empirical investigation", *International Journal of Production Economics*, Vol. 125 No. 2, pp. 251–261.
- Breu, K., Hemingway, C. J., Strathern, M., Bridger, D. (2002), "Workforce agility: The new employee strategy for the knowledge economy", *Journal of Information Technology*, Vol. 17, No. 1, pp. 21-31.
- Cai, Z. (2013), "Developing organizational agility through IT capability and KM capability: the moderating effects of organizational climate", *Proceedings of the 17th Pacific Asia Conference on Information Systems (PACIS)*, Jeju Island, Korea, 18–22, June, pp. 1–19.
- Cambridge Dictionary, C. (2016), *Cambridge Dictionary, Meaning* (entry 124), pp. 138–138.
- Cegarra-Navarro, J.-G., Soto-Acosta, P., Wensley, A. K. P. (2016), "Structured knowledge processes and firm performance: The role of organizational agility", *Journal of Business Research*, Vol. 69, No. 5, pp. 1544–1549.
- Charbonnier-Voirin, A. (2011), "The development and partial testing of the psychometric properties of a measurement scale of organizational agility", *Management*, Vol. 14, No. 2, pp. 119–156.
- Côrte-Real, N., Oliveira, T., Ruivo, P. (2017), "Assessing business value of Big Data Analytics in European firms", *Journal of Business Research*, No.70, pp. 379–390.
- Dove, R. (1996), "Tools for Analyzing and Constructing Agility", *Agility Forum*, Vol. 70, Issue 5649, pp. 1–13.
- Dove, R. (1999), "Knowledge management, response ability, and the agile enterprise", *Journal of Knowledge Management*, Vol. 3, No. 1, pp. 18–35.
- Dove, R. (2005), "Agile Enterprise Cornerstones: Knowledge, Values & Response Ability", *Business Agility and Information Technology Diffusion*, No. 180, pp. 313–330.
- Dove, R. (2006), "Engineering Agile Systems: Creative-Guidance Frameworks for Requirements and Design", *Systems Engineering*, *Proceedings of 4th annual conference on systems engineering research (CSER)*. Los Angeles, CA, pp. 1–10.
- Dyer, L., Shafer, R. a. (2003), "Dynamic organizations: Achieving marketplace and organizational agility with people", *CAHRS Working Paper (03-04)*, pp. 1–39.
- Eshlaghy, A. T., Mashayekhi, A. N., Rajabzadeh, A., Razavian, M. M. (2010), "Applying path analysis

- method in defining effective factors in organisation agility", *International Journal of Production Research*, Vol. 48, No. 6, pp. 1765–1786.
- Felipe, C. M., Roldán, J. L., Leal-Rodríguez, A. L. (2016), "An explanatory and predictive model for organizational agility", *Journal of Business Research*, Vol. 69, No. 10, pp. 4624–4631.
- Ganguly, A., Nilchiani, R., Farr, J. V. (2009), "Evaluating agility in corporate enterprises", *International Journal of Production Economics*, Vol. 118, No. 2, pp. 410–423.
- Gehani, R. R. (2010), "Time-based management strategic roles", *International Journal of Operational and Production Management*, Vol 15, pp. 19-35
- Giachetti, R. E., Martinez, L. D., Sáenz, O. a., Chen, C.-S. (2003), Analysis of the structural measures of flexibility and agility using a measurement theoretical framework, *International Journal of Production Economics*, Vol. 86, No. 1, pp. 47–62.
- Goldman, S. L., Nagel, R. N., Preiss, K. (1995), "Agile Competitors and Virtual Organizations: Strategies for Enriching the Customer", *Long Range Planning*, Vol. 29, pp. 131-135.
- Grewal, R., Tansuhaj, P. (2001). Building Organizational Capabilities for Managing Economic Crisis: The Role of Market Orientation and Strategic Flexibility, *Journal of Marketing*, Vol. 65, No.2, pp. 67 -80.
- Gunasekaran, A. (1999), "Agile manufacturing: a framework for research and development", *International Journal of Production Economics*, Vol. 62, No. 1, pp. 87–105.
- Holsapple, C. W., Li, X. (2008), "Understanding Organizational Agility: A Work-Design Perspective Understanding" In *Proceedings of the 13th ICCRTS*, pp. 1–25.
- Jackson, M., Johansson, C. (2003), "An agility analysis from a production system perspective", *Integrated Manufacturing Systems*, Vol. 14, No. 6, pp. 482–488.
- Kassim, N. M., Zain, M. (2004), "Assessing the Measurement of Organizational Agility", *Journal of American Academy of Business, Cambridge*, Vol. 4, No. 1-2, pp. 174–177.
- Kazlauskienė E., Bartusevicienė I., Tamulienė V. (2017), "The potential/opportunities for leveraging competences: the intangible assets dimension", *Montenegrin Journal of Economics*, Vol. 13, No. 1, pp. 51-62
- Khoshlahn, M., Ardabili, F. S. (2016), "The Role of Organizational Agility and Transformational Leadership in Service Recovery Prediction", *Procedia - Social and Behavioral Sciences*, No. 230, pp.142–149.
- Lin, C. T., Chiu, H., Chu, P. Y. (2006), "Agility index in the supply chain", *International Journal of Production Economics*, Vol. 100, No. 2, pp. 285–299.
- Lin, Y., Desouza, K. C., Roy, S. (2010), "Measuring agility of networked organizational structures via network entropy and mutual information", *Applied Mathematics and Computation*, Vol. 216, No. 10, pp. 2824–2836.
- Lu, Y., Ramamurthy, K. R. (2011a), "The Link Between IT Capability & Organizational Agility Introduction", *MIS Quarterly*, Vol. 35, No. 4, pp.931–954.
- Lu, Y., Ramamurthy, K. R. (2011b), "Understanding the Link Between Information Technology Capability and Organizational Agility: an Empirical Examination", *MIS Quarterly*, Vol. 35, No. 4, pp. 931–954.
- Mikalef, P., Pateli, A. (2017), "Information technology-enabled dynamic capabilities and their indirect effect on competitive performance: Findings from PLS-SEM and fsQCA", *Journal of Business Research*, No. 70, pp. 1–16.
- Narasimhan, R., Swink, M., Kim, S. W. (2006)", "Disentangling leanness and agility: An empirical investigation", *Journal of Operations Management*, Vol. 24, No. 5, pp. 440–457.
- Nijssen, M., Paauwe, J. (2012), "HRM in turbulent times: how to achieve organizational agility?", *The International Journal of Human Resource Management*, Vol. 23, No. 16, pp. 3315–3335.
- Overby, E., Bharadwaj, A., Sambamurthy, V. (2005), "Business Agility and Information Technology Diffusion", international conference proceedings: *A Framework for Enterprise Agility and the Enabling Role of Digital Options*, Atlanta: Georgia pp. 295–312.
- Panda, S., Rath, S. K. (2017), "The effect of human IT capability on organizational agility: an empirical analysis", *Management Research Review*, 40, No. 7, pp. 800–820.
- Ravichandran, T. (2017), "Exploring the relationships between IT competence, innovation capacity

- and organizational agility", *The Journal of Strategic Information Systems*, Vol. 27, No. 1, pp. 22-42.
- Ren, J., Yusuf, Y. Y., Burns, N. D. (2009), "A decision-support framework for agile enterprise partnering", *International Journal of Advanced Manufacturing Technology*, Vol. 41(1-2), pp. 180-192.
- Sambamurthy, V., Bharadwaj, A., Grover, V. (2003), "Shaping Agility through Digital Options: Reconceptualizing the Role of Information Technology in Contemporary Firms", *MIS Quarterly*, Vol. 27, No. 2, pp. 237-263.
- Sarker, S., Sarker, S. (2009), "Exploring agility in distributed information systems development teams: An interpretive study in an offshoring context", *Information Systems Research*, Vol. 20, No. 3, pp. 440-461.
- Sarkis, J. (2001), "Benchmarking for agility", *Benchmarking: An International Journal*, Vol. 8, No. 2, pp. 88-107.
- Shafer, R. A. (1997), "Creating organizational agility: The human resource dimension", *Dissertation Abstracts International Section A: Humanities and Social Sciences*, Gornell University
- Sharifi, H., Zhang, Z. (2001), "Agile manufacturing in practice - Application of a methodology", *International Journal of Operations & Production Management*, Vol. 21, No. 5-6, pp.772-794.
- Sherehiy, B., Karwowski, W., Layer, J. K. (2007), "A review of enterprise agility: Concepts, frameworks, and attributes", *International Journal of Industrial Ergonomics*, Vol. 37, No. 5, pp. 445-460.
- Singh, D., Oberoi, J. S., Ahuja, I. S. (2013), "An empirical investigation of dynamic capabilities in managing strategic flexibility in manufacturing organizations", *Management Decision*, Vol. 51, No. 7, pp. 1442-1461.
- Singh, J., Sharma, G. (2013), "Organizational agility: What it is, what it is not, and why it matters", *Academy of Management Proceedings*, Vol. 2013, No. 1, pp. 1-40.
- Švagždienė B., Jasinskas E., Simanavičius A. The success of learning organisation: values contextualization dimension. *Montenegrin Journal of Economics*, Vol. 13, No. 4, pp. 101-108.
- Tallon, P. P., Pinsonneault, A. (2011), "Competing Perspectives on the Link Between Strategic Information Technology Alignment and Organizational Agility: Insights from a Mediation Model.", *MIS Quarterly*, Vol. 35, No. 2, pp.463-486.
- Teece, D. J. (2010), "Business Models, Business Strategy and Innovation", *Long Range Planning*, Vol. 43, No. 2-3, pp. 172-194.
- Van Hoek, R. I. (2001), "Rediscovery of postponement a literature review and directions for research", *Journal of Operations Management*, Vol. 19, No. 2, pp. 161-184.
- Vázquez-Bustelo, D., Avella, L., Fernández, E. (2007), "Agility drivers, enablers and outcomes: Empirical test of an integrated agile manufacturing model", *International Journal of Operations & Production Management*, Vol. 27, pp. 1303 - 1332.
- Wendler, R. (2013), "The Structure of Agility from Different Perspectives", *Computer Science and Information Systems (FedCSIS)*, pp. 1165-1172.
- Wright, P. M., Snell, S. A. (1998), "Toward a unifying framework for exploring fit and flexibility in strategic human resource management", *Academy of Management Review*, Vol. 23, No. 4, pp.756-772.
- Yang, S. L., Li, T. F. (2002), "Agility evaluation of mass customization product manufacturing", *Journal of Materials Processing Technology*, Vol. 129, No. 1-3, pp. 640-644.
- Yauch, C. a. (2011), "Measuring agility as a performance outcome", *Journal of Manufacturing Technology Management*, Vol. 22, No. 3, pp. 384-404.
- Yeganegi, K., Azar, M. S. Z. A. (2012), "The Effect of IT on Organizational Agility", *Proceedings of the 2012 International Conference on Industrial Engineering and Operations Management Istanbul, Turkey, July 3 - 6*, pp. 2537-2544.
- Yusuf, Y. Y., Sarhadi, M., Gunasekaran, A. (1999), "Agile manufacturing: the drivers, concepts and attributes", *International Journal of Production Economics*, Vol. 62, No. 1, pp. 33-43.