The effect of organizational memory on organizational agility: Testing the role of counter-knowledge and knowledge application

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capital includes what employees know, and the agility to search and retrieve knowledge (organizational agility). Organizational agility could be seen as the result of using validated routines and protocols (knowledge application), but also as the result of using unproven theories, rumours, colloquial expressions or sayings (counter-knowledge), which means that organizational memory may enable both the application of good knowledge and the mitigation of counter-knowledge. This study examines the links between a firm’s organizational memory, counter-knowledge, knowledge application, and organizational agility. SmartPLS 3.2.8 in a sample of 112 companies the following questions were addressed: Does the improvement of organizational memory result in the growth of organizational agility? Does the growth of counter-knowledge and knowledge application at the same time hinder the enhancement of organizational agility? Results support that organizational memory not only enhances the application of gained knowledge, but also allows the spreading of rumours, gossip, and inappropriate or false beliefs (counter-knowledge). Furthermore, results support that the knowledge that emerges from the development in parallel or simultaneous of counter-knowledge and knowledge application provides bad references, which will lead to a degradation of organizational agility.

RESEARCH LIMITATIONS/IMPLICATIONS (LIMIT 100 WORDS): No data available supporting organizational agility, managers should be conscious of the urgency of counteracting the misuse of counter-knowledge. Findings make an important contribution to what is potentially a barrier to innovation and creativity, helping managers overcome the problems associated with misunderstandings or wrong assumptions derived from counter-knowledge.
The effect of organizational memory on organizational agility: Testing the role of counter-knowledge and knowledge application

Abstract

**Purpose:** Intellectual capital includes what employees know, and the agility to search and retrieve knowledge (organizational agility). Organizational agility could be seen as the result of using validated routines and protocols (knowledge application), but also as the result of using unproven theories, rumours, colloquial expressions or sayings (counter-knowledge), which means that organizational memory may enable both the application of good knowledge and the mitigation of counter-knowledge. This study examines the links between a firm’s organizational memory, counter-knowledge, knowledge application, and organizational agility.

**Design/ Methodology/ Approach:** Using SmartPLS 3.2.8 in a sample of 112 companies the following questions were addressed: Does the improvement of organizational memory result in the growth of organizational agility? Does the growth of counter-knowledge and knowledge application at the same time hinder the enhancement of organizational agility?

**Findings:** The results support that organizational memory not only enhances the application of gained knowledge, but also allows the spreading of rumours, gossip, and inappropriate or false beliefs (counter-knowledge). Furthermore, results support that the knowledge that emerges from the development in parallel or simultaneous of counter-knowledge and knowledge application provides bad references, which will lead to a degradation of organizational agility.

**Practical implications:** When supporting organizational agility, managers should be conscious of the urgency of counteracting the misuse of counter-knowledge.

**Originality/ Value:** These findings make an important contribution to what is potentially a barrier to innovation and creativity, helping managers overcome the problems associated with misunderstandings or wrong assumptions derived from counter-knowledge.

**Keywords:** Organizational memory; knowledge application; counter-knowledge; organizational agility; intellectual capital; PLS-SEM

**Paper type:** Research paper
1. Introduction

Intellectual capital is the sum of the intangible assets a company has at its disposal that can be used to create competitive advantages (Bueno et al., 2006; Lentjušenkova and Lapina, 2016). An important component of intellectual capital is ‘intellectual agility’, which is defined as the environments in which the staff are willing to modify structures and to think of innovative strategies to face challenges (Bontis et al., 2000, 2002; Ditillo, 1998). This concept is closely connected to that of ‘organizational agility’, which means the capability of firms to adjust/adapt their strategic direction or redeploy/redirect their resources to create value (Charbonnier-Voirin, 2011; Doz and Kosonen, 2008; Teece et al., 2016). This study reports that organizational agility may be considered as an extension of intellectual agility and defines it as the result of transferring and retrieving knowledge from one context to another (Pereira et al., 2018; Weber and Tarba, 2014).

In order to grow and prosper in the current context of crisis and uncertainty, it is necessary for companies to respond rapidly to the rapid high-tech and environmental challenges (Cai et al., 2019; Lu and Ramamurthy, 2011; Pereira et al., 2018). For these reasons, the literature has attempted to present structures for achieving agility (Chakravarty et al., 2013; Wahyono, 2018). In such contributions, it is observed that the ability to examine the market in search of opportunities or threats and to harmonize them within the company depends on the knowledge available both inside and outside the organization. This means that organizational agility is not only the result of using validated routines and protocols (i.e., knowledge application), but it may also be the result of using unproven theories, rumours, colloquial expressions or sayings (i.e., counter-knowledge).

Although knowledge application and counter-knowledge may signify the exchange of knowledge, the utilization of verified and unverified information involves the use and development of different knowledge structures with different characteristics. Whereas knowledge application involves using knowledge learned to a new context and is usually a formal process (Martelo-Landroguez and Cegarra-Navarro, 2014), counter-knowledge involves the dissemination of unsubstantiated information and is an informal and flexible process, which is in the hands of the parties (Cegarra-Navarro et al., 2015a). Since there are authors who suggest that counter-knowledge can lead to a degradation of knowledge (Chapman and Ferfolja, 2001; Darr et al., 1995; Fernandez and Sune, 2009; Markoczy, 1994), it is important to base the decision-making process on knowledge and not on the influence of counter-knowledge (Allameh, 2018; Cegarra-Navarro et al., 2015a).

As the simultaneous pursuit of verified and unverified information may hamper the development of intellectual capital and organizational agility (Cegarra-Navarro et al., 2015b), it is important to make use of ‘organizational memory’ to better support the networking of employees, managers, and companies (Al-Faoury et al., 2014). Organizational memory is considered a key factor to create and sustain a firm’s competitive advantage (Anderson, 1983; Ebbers and Wijnberg, 2009; Moorman and Miner, 1998), and implies more than just good experiences and habits. It is the total integration of structures and processes within a business that allow it to apply knowledge with the purpose of better achieving objectives (Ebbers and Wijnberg, 2009). Organizational memory involves retaining information in companies in forms of standard operating procedures, structural artefacts and mental models (Walsh and Ungson, 1991).
Bearing the above ideas in mind, we suggest that organizational memory may facilitate both the application of good knowledge and the mitigation of counter-knowledge (Harvey, 2012; Lee et al., 2011; Wexler, 2002). Our understanding of organizational agility, as a result of applying both verified knowledge and counter-knowledge is limited, if not non-existent. In addition, studies focused on counter-knowledge and intellectual capital are scarce, with only a few exceptions (Cegarra-Navarro et al., 2015a; Echajari and Thomas, 2015). This research aims to examine the links between a firm’s organizational memory, counter-knowledge, the process of knowledge application, and organizational agility.

This study explores those links by addressing the following two questions: Does the improvement of organizational memory result in the growth of organizational agility? Does the growth of counter-knowledge and knowledge application at the same time hinder the enhancement of organizational agility? The answer to these questions lies in the effort needed to maintain a balance between applying the right knowledge and counteracting the harmful effects of bad counter-knowledge. This study uses SmartPLS 3.2.8 in a sample of 112 companies listed on the Spanish Stock Exchange. In the following section, an examination of the concepts discussed above is presented. The third section explores the potential relationships between these constructs. The fourth section describes the methodology used in the study. Then, we present the findings. Finally, we state the discussion and conclusions.

2. Conceptual framework

2.1. Organizational agility

Organizational agility has been defined in various ways, including an intellectual viewpoint. Roos et al. (1997) revive the concept of ‘intellectual agility’, which describes how individuals can integrate knowledge and skills into a practical context through learning. When intellectual agility owned by employees is captured and coordinated by the organization then it is transformed into organizational agility, which Sull (2010) defines as the capacity to recognise and grab opportunities more hastily than competitors. There are other definitions, such as that of Dyer and Ericksen (2010), who bring to light the fact that organizational agility is the result of using the conceptual lenses provided by the organizational context such as interactions and self-organizing.

From a management viewpoint, the achievement of organizational agility is related to two interdependent approaches: a) to find out why one company should respond hastily to external challenges (Appelbaum et al., 2017), and b) which parts of the operational system need to incorporate changes to operate in a more efficient way (Leybourn, 2013). Concerning the second issue, Leybourn (2013) suggests that fundamental changes usually take place along with communication and lean management structures.

If we draw on papers that refer to organizational agility as the continuous adaptation between communication and lean management structures (Al-Faouri et al., 2014; Boden, 2004; Cai et al., 2019; Power et al., 2001; van Oosterhout et al., 2006), the conclusions could be that ‘organizational agility’ allows an effective response of organizations to the changing situations. According to Teece et al. (2016), the term organizational agility is almost a synonym of flexibility. In fact, Weber and Tarba (2014) define it as the organizational capability to remain flexible in the face of new developments.
On the basis of the results of the existing studies, we define organizational agility as the capability of firms to adjust/adapt their strategic direction or redeploy/redirect their resources to create value, both reacting rapidly to changes and anticipating and seizing opportunities (Charbonnier-Voirin, 2011; Teece et al., 2016). Hence, the agility to react quickly and innovate is key to compete effectively in markets in which demand and innovations advance more quickly (Alegre et al., 2013; Gassmann, 2006). As Shahrami (2012) notes, in order to compete effectively and better utilize the available opportunities, companies must be able to seamlessly integrate knowledge processes in a manner that facilitates organizational agility. In addition, the effective use of knowledge resources in firms promotes their innovation and their response to fast-changing customer expectations (Jiménez-Jiménez et al., 2014; Peeters and Martin, 2017; Sandhawalia and Dalcher, 2011).

2.2. Knowledge management processes

Braunscheidel and Suresh (2009) suggest that the accomplishment of organizational agility is related to a set of drivers. Among the top facilitating enablers, they highlight cross-functional and external integration. In this vein, Eshlaghy et al. (2010) identified factors such as leadership, engagement or satisfaction. Based on this research, it can be asserted that organizational agility requires the integration of knowledge processes in an appropriate way (Allameh, 2018; Cegarra-Navarro et al., 2015b; Chakravarty et al., 2013). Although different supporting processes of knowledge management exist (Gold et al., 2001; Martelo-Landroguez et al., 2011; Ranjbarfard et al., 2014), the acquisition/creation, transfer, retention, and application of knowledge are considered to be the key knowledge management processes (Martelo-Landroguez and Cegarra-Navarro, 2014).

Knowledge acquisition involves the generation and accumulation of know-how in organizations (Gold et al., 2011; Jantunen, 2005; Lin and Lee, 2005). Knowledge transfer involves the distribution of understandings and know-how within firms (Baskerville and Dulipovici, 2006; Manfredi Latilla et al., 2018). Knowledge retention, also known as organizational memory, aims to collect knowledge and make it accessible to anyone in the firm in order to benefit decision-making (Davenport and Prusak, 1998). And knowledge application refers to the utilization of knowledge on a daily basis (Jantunen, 2005). Of these four processes, our study focuses on two of them: knowledge retention and knowledge application.

According to Walsh and Ungson (1991, p. 61), organizational memory refers to the “stored information from an organization’s history that can be brought to bear on present decisions”. Organizational memory is particularly important as a store of either the objectified knowledge (e.g., procedures and protocols) or the collective knowledge in the form of culture or shared values (Ebbers and Wijnberg 2009; Tippins and Sohi, 2003). These terms have also been defined as hard and soft memories (Córdoa-Pachón and Cegarra-Navarro, 2010; Hardy-Vallee, 2012; Kellerman, 2004). The presence of both types of knowledge (i.e., objectified and collective) not only guides the actions of individuals but also their thoughts (Cegarra-Navarro, 2007; Moorman and Miner, 1998). For example, while rules and procedures provide the framework of reference for applying knowledge, the common philosophy and culture provide the basic understandings for
interpreting the perceptions and affections behind what is being said (García-Pérez et al., 2019).

Applying available knowledge in the form of procedures and protocols will save time and facilitate extrapolation of decisions from one context to another (Chang Lee et al., 2005). In addition, applying objectified knowledge in different contexts will give the company the necessary experience to avoid making previous mistakes (Senge, 1990). Hence, knowledge application allows firms to take advantage of what they have learned in the past (e.g., Cui et al., 2005; Gold et al., 2001; Lin, 2007), and it also avoids repetition of past mistakes (Dunham and Burt, 2011; Villar et al., 2014).

The interpretation of knowledge is not only based on complete or accurate information, but it can also be based on narrative descriptions or interpretations of history (Chapman and Ferfolja, 2001), what this may mean is that collective knowledge can help people to cope with malicious fake elements or gossips (e.g., Baumeister et al., 2004; Yerkovich, 1977). For example, one way to avoid the presence of unverified information is by increasing process efficiency and ways of finding common positions within the firm (Inkinen, 2016). Organizations can find common positions by fostering interaction across different departments and levels of responsibility through informal exchanges, dialogue or joint projects (Cepeda-Carrion et al., 2012).

The above ideas could mean that companies, in order to adapt to new challenges, have either to avoid the misuse of bad knowledge or to promote the application of good knowledge. Otherwise, inappropriate or false beliefs generated via malicious fake elements or gossips can not only create misunderstandings (Thompson, 2008), but also may hinder the achievement of agility (Cepeda-Carrion et al., 2012). The following section provides more details in this regard.

2.3. Counter-knowledge

Counter-knowledge refers to “misinformation packaged to look like fact” (Thompson, 2008, p. 1). Many people are prone to accept as facts information derived from unverified sources, false, misleading, exaggerated, or slanderous rumours that are being printed in much of the mass media throughout the world (Baumeister et al., 2004; Kurland and Pelled, 2000; Szvetelszky, 2003). It should be noted that the misuse of counter-knowledge in a learning process may hinder the creation of new knowledge (Macinnes, 2005). Drawing upon a reading of Yerkovich (1977) and Baumeister et al. (2004), Cegarra-Navarro et al. (2014) propose that much counter-knowledge may promote social integration and entertainment. Although counter-knowledge is not necessarily a bad thing, this study refers to ‘bad counter-knowledge’ as the content of manipulated messages that lead to a vicious circle of mutual distrust and potential problems for organizations in their effort to achieve agility and regain objectivity for public interest (Sánchez-Casado et al., 2015).

Counter-knowledge is not only the result of unproven theories or spurious claims (Thompson, 2008), but it may also be the result of wrong thinking, bad experiences and abnormal sensations. If we extrapolate the concept that Bratianu and Orzea (2013) applied to ‘emotional knowledge’ and its effects, we could assert that uncontrolled emotions such as sadness or pain based on groundless fear of negative evaluation could cause people to break off relationships with their companies and supervisors (Bratianu, 2015; Paradiso,
In addition, this groundless fear can be easily adapted by others who wish to protect themselves from receiving contradictory advice or negative evaluation (Taylor and Bright, 2011). This implies that counter-knowledge is part of a complex system and cannot only consist of a simple list of inappropriate behaviours (e.g., sharing unproven theories or spurious claims), but in terms of the cognitive sciences it also involves responding inappropriately to other people's emotions (i.e., emotional counter-knowledge) or sharing wrong ideas about ourselves and the others (i.e., spiritual counter-knowledge).

3. Hypotheses

Organizational memory provides support both for the achievement of organizational agility and the development of individuals (Al-Faouri et al., 2014). As regards the achievement of agility, the literature recognizes that organizational memory constitutes a key issue for the accomplishment of performance, and to react to the changes and challenges in the environment (i.e., organizational agility) (Martelo-Landroguez and Cegarra-Navarro, 2014; Nilakanta et al., 2006). In the same vein, the establishment of hard memories such as information structures or computers for achieving agility have been largely supported (Overby et al., 2006; Wahyono, 2018; Weill et al., 2002).

Regarding the development of individuals, not only does organizational memory foster and encourage collaboration and the sharing of ideas, experiences and relevant information among its users (Ebbers and Wijnberg, 2009; Wexler, 2002), but it also is an essential framework of reference to avoid mistakes being repeated (Khedhaouria and Jamal, 2015). Moorman and Miner (1998) suggest that procedural memory is a part of the long-term organizational memory that is responsible for knowing how to do things. This idea can be used to justify the use of organizational memory as a way to increase individuals’ ability to adapt to new realities through synergy and greater knowledge of the scheme. In this direction, previous studies have shown that organizational memory channelled through knowledge structures may have a positive effect on organizational agility as a result of a better interpretation of incoming information and the performance of new routines (Moorman and Miner, 1997, 1998).

The above considerations imply that it is not enough to guide actions of individuals for achieving agility (Overby et al., 2006; Wahyono, 2018; Weill et al., 2002), the role of the guiding thoughts is also of paramount importance (Ipe, 2003). In order to apply the information stored in the memory for unforeseen changes, employees must have the attitude and behaviour to identify the right knowledge in the appropriate way in order to make right decisions (Gold et al., 2001; Valentim et al., 2016). The fact that a firm updates its organizational characteristics over time suggests that it has ways to detect, correct errors and apply solutions (Stein, 1995). Under this framework, the knowledge application process represents not only the vehicle through which embedded information collected through the organizational memory can itself be used (Ahmed Dine Rabeh et al., 2013; Bhatt, 2001), but it represents also the result of filtering and updating this information (Ebbers and Wijnberg, 2009; Martelo-Landroguez and Cegarra-Navarro, 2014).

The authors therefore propose the following hypothesis:
Hypothesis 1: Knowledge application mediates positively the relationship between organizational memory and organizational agility.

Thoughts and memories that do not come from an individual’s lived experience are called ‘prosthetic memories’ (Landsberg, 1995). Our brains tend to pick up on the gist of smells, colours, tastes (a survival instinct), which in turn means that human sense-making is not only a gradual process where lived experiences allow people to create more effective learning processes but rather a discrete process where the addition of a small piece of information can suddenly alter the notion of individual of what the right thing to do is and counts as experience (Wilson, 1995). These considerations lead us to argue that the ability to extract meaning from counter-knowledge is a semantic construct dependent on prosthetic memory aids such as films, photos, appointment books or checklists (Landsberg, 1995; Tulving, 2002).

In the same way that cartoon videos can assist children in retraining individual memories through drawings, acting, storytelling or making models (Landsberg, 1995), organizational memory is able to assist cognitive processes (Baskerville and Dulipovici, 2006), and how external information is processed (Schwenk, 1984). For example, when Evelyn Harrison, an expert on sculpture, was shown a statue that the J. Paul Getty Museum had purchased for $10 million, she blurted out that it was fake. How did she tell difference between the fake and the real article so quickly? A possible explanation would be the fact that her subconscious mind sorted through knowledge that she had gained in the past when was reviewing books, art magazines and catalogues.

What the knowledge gained means for decision-making is that right memories triggers the identification of unjustified statements or authors’ opinions on the presented facts, which in turn facilitates the speedy rectification of problems through the reduction of misunderstandings and the cost of poor communication or miscommunication (Jacobs, 2010). Thanks to these structures, a correct interpretation of the reality exists and it allows us to change bad things to good (Haldin-Herrgard, 2000). Therefore, by using fine-tuned routines and right memories, both individuals and organizations may be empowered in their efforts to counteract gossip, lies, exaggeration or partial truths that would lead to a lower level of organizational agility (Chapman and Ferfolja, 2001; Markoczy, 1994). Organizational memory may facilitate the reorientation of unverified information (Moorman and Miner, 1997, 1998), and the recognition of fake news (Cegarra-Navarro et al., 2012).

The above considerations also lead us to frame the following hypothesis:

Hypothesis 2: Counter-knowledge mediates positively the relationship between organizational memory and organizational agility.

The Figure 1 represents the proposed relationships. While the upper path represents the positive influence of organizational memory on organizational agility through the application of knowledge, the lower path assumes that the negative influence of counter-knowledge on organizational agility is counteracted by the existence of organizational memory.
4. Methods

4.1. Data collection

This research contributes to better understand how organizational agility can be supported by strengthening knowledge application and avoiding counter-knowledge. To achieve this, it was seen necessary to collect data from the largest companies operating with the Editran tool in Spain. As previously stated by authors such as Cegarra-Navarro et al. (2015) and Cepeda-Carrion et al. (2016), Editran enables connectivity among different actors and knowledge systems, which in turn not only supports application of knowledge, but also shares unverified information (i.e., counter-knowledge).

Companies’ CEOs from the most important companies of Spain were contacted by telephone in October and November 2012. 360 companies from the SABI (Sistema de Análisis de Balances Ibéricos) database with more than 100 employees were included in the data pool, on the assumption that they were using Editran. The survey covered a wide range of industries (e.g., food manufacturing, merchant wholesalers, consulting services, vehicle parts manufacturing, and food service), excluding the agricultural and construction sectors. From a sample of 360 organizations, 121 companies agreed to participate. A total of 112 valid questionnaires were obtained, resulting in a response rate of 31.11%.

4.2. Measures

The data collected were self-reported from a single questionnaire. In order to prevent common method bias (Podsakoff et al., 2003), also known as common method variance, during the research design phase we have applied the procedural remedies proposed by Podsakoff et al. (2012). Furthermore, the full collinearity test was used to detect a potential common method bias situation (Kock, 2015; Kock and Lynn, 2012).

Organizational memory has been measured with Chou et al.’s (2007) scale. This scale is composed of four items. It includes knowledge about routines, processes, and procedures. For instance, the availability of formal processes and mechanisms to share what is learned. This scale has recently been used in other studies (e.g., Martelo-Landroguez and Cepeda-Carrion, 2016).

Counter-knowledge has been measured using four items. This scale was constructed through a literature review. An expert panel was also used to identify the correct items for this construct. Factors relating to the lack of congruity between the intended communication and its recipient (e.g., misunderstandings), exaggerations, and partial truths are included in the scale (Chapman and Ferfolja, 2001; Thompson, 2008). This scale was used previously in Cegarra-Navarro et al., 2012, 2014 and 2015a. The model uses Gold et al.’s (2001) scale to measure knowledge application. This scale consisted of 12 items. After cleaning the data, knowledge application scale includes nine items. It includes questions about the existence of processes to effectively use knowledge in the firm. This scale has recently been used by other researches (e.g., Martelo-Landroguez et al., 2019).

As noted above, organizational agility refers to the organizational capability to deal with changes that come from the business environment in a rapid and innovative way. We have
measured organizational agility using items adapted from Lu and Ramamurthy’s (2011) work. Our scale consists of six items. Recent papers have successfully used this measure (e.g., Cegarra-Navarro et al., 2015b).

Our latent variables are going to be measured as composites (Cepeda-Carrion et al., 2019; Henseler, 2017). These variables can be described as design constructs or artifacts compromising more elementary components (i.e., dimensions or facts). Organizational memory (OM), knowledge application (KA), counter-knowledge (CK), and organizational agility (OA) are modelled as Mode A composites, expecting a high level of correlation between indicators (Henseler et al., 2016; Rigdon, 2016). This study used a survey to collect data on a 7-point Likert scale (see Appendix for a list of items).

4.3. Data analysis

The proposed hypotheses were tested simultaneously using PLS-SEM (Richter et al., 2016) due to all the constructs have been considered as composites. Therefore, the total variance of all constructs is used to estimate model parameters (Hair et al., 2017). PLS-SEM requires specific attention concerning model identification (Henseler et al., 2016), such that each construct needs a nomological net in order to be assessed. We run PLS-SEM analysis using the SmartPLS v. 3.2.8. (Ringle et al., 2015).

According to the recent advances of PLS-SEM reporting, we have followed different steps (Hair et al., 2017; Henseler et al., 2016). First, we analyse the model fit. We report the standardized root mean square residual (SRMR) to quantify the degree of (mis-)fit (Henseler et al., 2014).

Next, the assessment of the measurement model was performed. This allows the specification of the relationships between the observable or manifest variables and the theoretical concepts or latent variables. First, we have examined the fit of the saturated model (Henseler, 2017; Henseler et al., 2016). In order to demonstrate the reliability of the model composites, and their validity, we have used $p_A$ as an appropriate measure of internal consistency reliability (Henseler et al., 2016). The average variance extracted (AVE) has been used to measure unidimensionality (Fornell and Larcker, 1981). Finally, a heterotrait-monotrait ratio of correlations (HTMT) has been used to test discriminant validity (Henseler et al., 2015).

The assessment of the structural model was also carried out by testing the hypothesized relationships between composites (constructs). The path coefficients are the most important result of the structural model. The consideration of bootstrap percentile confidence intervals gives greater assurance than simply relying on testing the significance of null hypothesis (Cohen, 1994).

5. Results

The SRMR value for the estimated model is 0.064. This indicator is used to assess the global model fit (Henseler et al., 2016). Consequently, the proposed model has a good fit (Hair et al., 2017; Henseler et al., 2016; Hu and Bentler, 1999). As we have said before, the analysis and interpretation of the PLS-SEM estimations consist of: a) the assessment of the reliability and validity of the outer model (i.e., measurement model), and b) the assessment of the inner model (i.e., structural model).
5.1. Outer model

First, the SRMR of the saturated model (SRMR= 0.063) is reported as an indicator of the quality of the measurement model as it does not exceed the value of 0.08 (Henseler et al., 2016). The saturated model represents a model where all latent variables are connected among them. Second, all indicators satisfy the requirement of individual item reliability. Almost all the outer loadings are greater than 0.7. A few items with too low outer loadings have been removed. Hence, individual items are reliable. Third, all Dijkstra and Henseler’s ρ are greater than 0.8 (Table 1). Therefore, the model satisfies the prerequisite of composite reliability (Nunnally, 1978). Furthermore, the scores for the average variance extracted (AVE) surpass the threshold of 0.5 for composites’ unidimensionality (Table 1), meaning that at least 50% variance of the indicators should be accounted for (Fornell and Larcker, 1981). Therefore, these latent variables achieve convergent validity. Finally, all the variables attain discriminant validity (Table 1), since all HTMT are below the value of 0.90 (Henseler et al., 2015).

5.2. Inner model

The results of the structural model after the PLS analysis are summarised in Figure 2 and Table 2.

Following Hair et al. (2011), a bootstrapping technique (5000 resamples) is employed to generate bootstrap confidence intervals of standardized regression coefficients. Bootstrap confidence intervals constitute a good approach to assess the statistical significance of the path coefficients (Hayes and Scharkow, 2013).

The proposed model explains the 59 percent of the variance in organizational agility (R^2).

In order to test our hypotheses, we have applied the analytical approach described by Nitzl et al. (2016). We test the indirect effects on the dependent variable through the mediators (i.e., knowledge application and counter-knowledge). Furthermore, we examine the total effect (c) and the direct effect (c’) of the independent variable on the dependent variable. Those effects c and c’ are non-hypothesized relationships. However, we have included them in our analysis to test the presence of either full or partial mediation.

Figure 2A represents the total effect of organizational memory on organizational agility (c). Figure 2B shows the total effect of OM on OA as the sum of the direct (c’) and indirect effects (a1*b1+a2*b2).

As the proposed hypotheses have been formulated with direction, a one-tailed test has been used. A 5000 resamples bootstrapping was used to generate 90% confidence intervals for the mediators. According to the results, hypothesis 1 is supported. The
indirect effect through knowledge application \((a_1*b_1)\) has a point estimate of 0.48 while its confidence interval does not present any sign change. The same result was obtained for hypothesis 2, which is also supported. The indirect effect through counter-knowledge \((a_2*b_2)\) has a point estimate of 0.06, without having changed the sign of its confidence interval.

As Table 3 shows, a significant total effect exists between organizational memory and organizational agility \(c = 0.70, t = 12.89\). However, when knowledge application and counter-knowledge are included in the model as mediators, organizational memory has no longer a significant direct effect on organizational agility \(c' = 0.16, t = 1.29\). Hence, a full mediation can be assumed of knowledge application and counter-knowledge on the relationship between organizational memory and organizational agility. Nevertheless, this is not supported due to the low value of the variance accounted for \(\text{VAF}\) index \(\text{Hair et al., 2017}\). \text{VAF}\) indicates the size of the indirect effect in relation to the total effect. Our model achieves a \text{VAF}\ of 77.2%. Consequently, a partial mediation exists. The non-significance of the direct effect \(c'\) could be caused by a moderated statistical power \(\text{i.e., 112 valid questionnaires}\).

Due to the existence of a multiple mediation, the authors also test if mediator \(M_1\) \(\text{i.e., knowledge application}\) has a stronger mediator effect than mediator \(M_2\) \(\text{i.e., counter-knowledge}\). Hence, we evaluate the statistical difference between \(a_1*b_1\) and \(a_2*b_2\) \(\text{Cepeda-Carrion et al., 2018}\). As a significant difference exists between both indirect effects \(\text{see Table 4}\), we state that knowledge application \(M_1\) is a stronger mediator than counter-knowledge \(M_2\).
6. Discussion

The importance of transferring and retrieving knowledge to stimulate the creation of intellectual capital is well-known. In this vein, and considering that organizational agility is the result of adapting knowledge from one context to another (Pereira et al., 2018; Weber and Tarba, 2014), it can be considered as one of the most visible components of the intellectual capital of any organization (Buono et al., 2006; Lentjušenkova and Lapina, 2016). Firms must evaluate and analyse the constantly changing environments to adapt and change if necessary (Teece et al., 2016). Under this framework, organizational agility appears as an important issue on the topic of organizational survival and success (Felipe et al., 2016).

Intellectual capital is not just what people know, it is also the glue that holds organizational members together (Buono et al., 2006; Edvinsson and Malone, 1997; Lentjušenkova and Lapina, 2016). Counter-knowledge, whether we like it or not, is one of the most important components (glues) of the informal system of any organization and a means of entertainment and social integration (Cegarra-Navarro et al., 2014). Despite counter-knowledge is not necessarily a bad thing, when employees use unverified information to manipulate people’s expectations in their own interest, it is likely that inaccurate things will be accepted as authentic (Thompson, 2008). In other words, managers should also be aware that unsupported rumours and gossip could provoke the creation of bad knowledge in firms, such as inappropriate or false beliefs.

This study also investigates how organizational memory can mitigate the presence of counter-knowledge, along with exploring how these activities can, in turn, result in the achievement of organizational agility.

In order to mitigate the misuse of counter-knowledge, this study provides evidence that organizational memory can play a part in overcoming the cost of poor communication or miscommunication. The results of this study fully support the proposed hypotheses, indicating that not only the reactivation of prior knowledge (i.e., organizational memory) potentially facilitates knowledge application, but it also counteracts the presence of counter-knowledge. In other words, the more organizational memory takes place, the fewest rumours or gossip in the use of knowledge structures would be found. Under this framework, organizational members may use organizational memory (e.g., routines or processes) to pursue different goals.

Under the above scenario, companies should do what is necessary to avoid inequality between knowledge application and counter-knowledge. In doing so, it may be desirable to adjust the prior knowledge, in order to make it as relevant and useful for both processes knowledge application and counter-knowledge. This way, prior verified knowledge is used by employees not only to improve the effectiveness of existing processes, but also to mitigate the misuse of counter-knowledge (Moorman and Miner, 1997, 1998). In the same way that the same tool can be used to different purposes, organizational memory can be used both for the process through which some individuals apply knowledge possessed by the organization, and for counteracting unverified information shared by other individuals.

Bearing in mind the above, this study has found strong support for the upper path of the model represented in Figure 2. This path represents that most of the knowledge associated
to organizational memory, but not all, is channelled through the process of knowledge application (i.e., hypothesis 1). The process of knowledge application allows organizational members to gain much deeper insight into the company’s memory, as well as support and make more informed decisions (Lin and Lee, 2005). It also allows organizational members to deal with customers systematically (Moorman and Miner, 1998; Tippins and Sohi, 2003), which in turn leads to improved customer service levels, service quality, and a higher level of organizational agility (Boden, 2004; Power et al., 2001; van Oosterhout et al., 2006).

The lower path assumes that the negative influence of counter-knowledge on organizational agility is counteracted by the existence of organizational memory (i.e., hypothesis 2). Figure 2 also illustrates that the indirect effect of organizational memory on organizational agility via counter-knowledge is positive and statistically significant (i.e., minus multiplied by minus is equal to plus). This may be due to the role that organizational memory plays in identifying misunderstandings and the precautions that need to be taken (Landsberg, 1995; Tulving, 2002). The presence of collective knowledge may prevent individuals of taking for granted rumours or gossip. For instance, high trust that guides people thought, may lead to new understandings and agreements (Cegarra-Navarro et al., 2014, 2015a). When it happens, collective knowledge can deliberately upgrade people’s knowledge by avoiding lies or exaggeration, which in turn may lead to a higher level of organizational agility (Chapman and Ferfolja, 2001; Darr et al., 1995; Fernandez and Sune, 2009; Markoczy, 1994).

7. Implications for managers and organizations

The implications for practice of the above-mentioned findings is that managers may need to be aware of the possibility that “the knowledge” that employees and themselves need to carry out their jobs may vary from one context to another. In our study, we further suggest that the presence of right memories allows organizations to respond appropriately to environmental threats and to adjust to the changes in a business environment. The identification of organizational memory as a source of both the process of knowledge application and the mitigation of faulty counter-knowledge is an important contribution to highlight at a time when research is trying to uncover new roles for knowledge management processes.

The provision of a practical guide to shape agile organizations is another contribution of this study. Regarding this, the results support that organizational agility is not only the result of using validated routines and protocols (i.e., knowledge application), but it may also be the result of using unproven theories, rumours, colloquial expressions or sayings (i.e., counter-knowledge), which means that organizational memory may enable both the application of good knowledge and the mitigation of counter-knowledge. These findings may be helpful in order to find useful combinations and to develop low-risk counter-knowledge and high-quality process of knowledge application. In addition, the findings of our work could improve current company’s management by providing them with mechanisms to cope with the current turbulent environments.

In terms of managerial implications, this work also points to organizational memory as a mechanism for achieving a balance by setting standard operating procedures, structural artefacts and mental models that can lead both mitigation of counter-knowledge and
application of knowledge. In doing so, this research highlights the importance to encourage managers to follow established procedures for obtaining, contrasting, filtering and delivering information in time. This, of course, needs to be done in an environment that foster competition and speed up effective restructuring. For example, speeding up and resolving complaints from customers via established procedures provided by the company, may avoid the possibility of employees gaining access to unsubstantiated information given by different providers and through informal channels.

8. Conclusions

The ability of an organization to make agile some tasks maintaining a balance between the application of learned knowledge and the dissemination of unsubstantiated information (i.e., counter-knowledge) is a subject which has generally been overlooked in the extant literature. Therefore, this research has addressed an issue of significant importance for business and raised awareness of the importance to carry out further research to avoid exposure of workers to counter-knowledge. As we have stated before, results show that organizational agility relies on both knowledge application and overcoming counter-knowledge.

Nowadays, fundamental processes in organizations are those based on knowledge. In fact, value for organizations and customers is created through those knowledge processes (Dawson, 2000). Therefore, firms succeed depending on how effectively and efficiently they can perform those processes. As we have stated before, the identification of organizational memory as a source of both the process of knowledge application and counter-knowledge is an important theoretical implication at a time when research is trying to uncover new roles for knowledge management processes.

Overall, results show that the effect of organizational memory on organizational agility is enhanced in the presence of the knowledge application process. Nevertheless, our data also revealed that the effect of counter-knowledge on organizational agility is mitigated by the presence of organizational memory. As noted above, the indirect effect of organizational memory on organizational agility via counter-knowledge is statistically significant. It means that organizational memory helps to mitigate bad counter-knowledge as it contributes to dispel misunderstandings and wrong assumptions created as a result of unverified information.

Our paper also answers the call for more practical studies in the knowledge management field in order to avoid the development of theoretical models that complicate their applicability in firms (Ragab and Arisha, 2013). One of the main limitations of this study is the fact that the sample used was from Spain. Future research could offer a more international perspective by combining firms from different countries. In addition, data collection used the key informant method, which means that the study reflects the opinion of one person. Future studies should consider collecting data from multiple respondents within each organization.
References


## Appendix: Questionnaire items

### Counter-knowledge

| CK1 | In my organization, there is gossip that thrives on lies, exaggerations and partial truths |
| CK2 | In my organization, there are malicious rumours which support mistrust |
| CK3 | In my organization, there are malicious stories about staff that often lead to misunderstandings |
| CK4 | In my organization, unverified information is shared by technological means |

Source: Adapted from Chapman and Fertolfa (2001)

### Knowledge application

| KA1 | My organization has processes for applying knowledge learned from mistakes |
| KA2 | My organization has processes for applying knowledge learned from experiences |
| KA3 | My organization has processes for using knowledge in the development of new services |
| KA4 | My organization has processes for using knowledge to solve problems |
| KA5 | My organization matches sources of knowledge to problems and challenges |
| KA6 | My organization uses knowledge to improve efficiency |
| KA7 | My organization uses knowledge to adjust its strategic direction |
| KA8 | My organization is able to locate and apply knowledge to changing competitive conditions |
| KA9 | My organization makes knowledge accessible to those who need it |
| KA10 | My organization takes advantage of new knowledge |
| KA11 | My organization quickly applies knowledge to critical competitive needs |
| KA12 | My organization quickly links sources of knowledge to resolving problems |

Source: Adapted from Gold et al. (2001)

### Organizational Agility

| OA1 | We have the ability to rapidly respond to customers’ needs |
| OA2 | We have the ability to rapidly adapt production to demand fluctuations |
| OA3 | We have the ability to rapidly cope with problems from suppliers |
| OA4 | We rapidly implement decisions to face market changes |
| OA5 | We continuously search for forms to reinvent or redesign our organization |
| OA6 | We see market changes as opportunities for rapid capitalization. |

Source: Adapted from Lu and Ramamurthy (2011)

### Organizational Memory

| OM1 | We are committed to keep “fresh” everything that has been learned in the development of services |
| OM2 | The causes of failure in service development processes are always analysed and everything learned in them is shared |
| OM3 | We have specific mechanisms to share what is learned in the service development process |
| OM4 | We have formal processes to identify misconceptions in the service development process |

Source: Adapted from Chou et al. (2007)
Figure 1. Proposed theoretical model

![Diagram of the proposed theoretical model]

\[ H_1 = OM \rightarrow KA \rightarrow OA = a_1 * b_1 \]
\[ H_2 = OM \rightarrow CK \rightarrow OA = a_2 * b_2 \]

Figure 2. Research model

A) Model with total effect

![Diagram of the research model with total effect]

B) Model with mediated effects

![Diagram of the research model with mediated effects]

***p<0.001, **p<0.01, ns: not significant (based on t(4999), one-tailed test)
Table 1. Reliability, convergent validity, and discriminant validity values of the outer (measurement) model

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>S.D.</th>
<th>Rho_A (ρ)</th>
<th>CR</th>
<th>AVE</th>
<th>HTMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Counter-knowledge</td>
<td>3.07</td>
<td>1.48</td>
<td>0.95</td>
<td>0.93</td>
<td>0.79</td>
<td>0.22</td>
</tr>
<tr>
<td>2. Knowledge application</td>
<td>5.05</td>
<td>1.07</td>
<td>0.97</td>
<td>0.97</td>
<td>0.77</td>
<td>0.22</td>
</tr>
<tr>
<td>3. Organizational agility</td>
<td>5.14</td>
<td>1.00</td>
<td>0.91</td>
<td>0.92</td>
<td>0.66</td>
<td>0.38</td>
</tr>
<tr>
<td>4. Organizational memory</td>
<td>4.83</td>
<td>1.14</td>
<td>0.91</td>
<td>0.93</td>
<td>0.79</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Notes:
Mean = the average score for all the items included in each measure; S.D. = Standard Deviation; CR = Composite Reliability; AVE = Average Variance Extracted.

Table 2. Effects on endogenous variables

<table>
<thead>
<tr>
<th>Effects on endogenous variables</th>
<th>Direct effect</th>
<th>t value (bootstrap)</th>
<th>Percentile 90% confidence intervals</th>
<th>Explained variance: $R^2$</th>
<th>Effect size: $f^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge application (R²=0.69)</td>
<td>0.83***</td>
<td>29.57</td>
<td>[0.78; 0.88] Sig.</td>
<td>68.80%</td>
<td>2.19</td>
</tr>
<tr>
<td>Organizational memory (a₁)</td>
<td>-0.26**</td>
<td>2.70</td>
<td>[-0.42; -0.10] Sig.</td>
<td>6.81%</td>
<td>0.07</td>
</tr>
<tr>
<td>Counter-knowledge (R²=0.07)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational memory (a₂)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational agility (R²=0.59)</td>
<td>0.16***</td>
<td>1.29</td>
<td>[-0.07; 0.42] N. Sig.</td>
<td>10.85%</td>
<td>0.01</td>
</tr>
<tr>
<td>Knowledge application (b₁)</td>
<td>0.57***</td>
<td>4.81</td>
<td>[0.37; 0.75] Sig.</td>
<td>42.01%</td>
<td>0.24</td>
</tr>
<tr>
<td>Counter-knowledge (b₂)</td>
<td>-0.20***</td>
<td>3.23</td>
<td>[-0.30; -0.10] Sig.</td>
<td>7.10%</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Notes:
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, ns: not significant (based on Student t (4999), one-tailed test).
$t(0.05, 4999) = 1.645158499$, $t(0.01, 4999) = 2.327094067$, $t(0.001, 4999) = 3.091863446$
Sig.= significant, N. Sig.= not significant

Table 3. Mediating effect tests

<table>
<thead>
<tr>
<th>Total effect of OM on OA (c)</th>
<th>Direct effect of OM on OA</th>
<th>Indirect effects of OM on OA</th>
<th>Coefficient</th>
<th>t value</th>
<th>Coefficient</th>
<th>t value</th>
<th>Point estimate</th>
<th>Percentile bootstrap 90% confidence interval</th>
<th>VAF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.70***</td>
<td>12.89</td>
<td>0.16**</td>
<td>1.29</td>
<td>0.54</td>
<td>[0.32; 0.70]</td>
<td>77.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>H₁= $a_1*b_1$ (via KA)</td>
<td>0.48</td>
<td>0.27</td>
<td>0.65</td>
<td>68.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>H₂= $a_2*b_2$ (via CK)</td>
<td>0.06</td>
<td>0.01</td>
<td>0.11</td>
<td>8.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, ns: not significant (based on Student t (4999), one-tailed test).
$t(0.05, 4999) = 1.645158499$, $t(0.01, 4999) = 2.327094067$, $t(0.001, 4999) = 3.091863446$
Organizational memory → OM, Knowledge application → KA, Counter-knowledge → CK, Organizational agility → OA

Table 4. Comparison of mediating effects

<table>
<thead>
<tr>
<th>Differential effect</th>
<th>Value</th>
<th>Bootstrap 90% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>M₁ – M₂= (a₁<em>b₁)−(a₂</em>b₂)</td>
<td>0.42</td>
<td>0.24</td>
</tr>
</tbody>
</table>
Dear Dr. Merrill Warkentin,

Please find enclosed the new version of the paper developed in response to the reviewer comments. After reviewing the paper for third time (as it seems reviewers have been different), we have done our best again to address all the comments and suggestions made.

Thank you for the thoughtful reviews on our manuscript, entitled “The effect of organizational memory on organizational agility: Testing the role of counter-knowledge and knowledge application”. We would also like to thank the reviewers for their insightful comments. You have greatly helped reshape this into a much better paper.

We have completed a thorough revision of the manuscript and considered the feedback received. Changes made are summarised below and have also been highlighted within the document by using a different font colour (red).

Thank you for considering the revised version of our manuscript. We look forward to hearing from you in due course.

Sincerely,

The authors
Response to REVIEWERS

Reviewer: 1

Recommendation: Accept

Comments:
I am satisfied by the changes introduced in the new version of the paper. Congratulations! I think it is a great paper.

Thank you very much, we really appreciate your comments.

Additional Questions:
1. Originality: Does the paper contain new and significant information adequate to justify publication?: Yes.

Thank you.

2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources? Is any significant work ignored?: Yes, the paper is adequately grounded on previous literature.

Thanks.

3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or other ideas? Has the research or equivalent intellectual work on which the paper is based been well designed? Are the methods employed appropriate?: Yes, theoretical framework is solid.

Thank you.

4. Results: Are results presented clearly and analysed appropriately? Do the conclusions adequately tie together the other elements of the paper?:

...
Yes, results are clear. Conclusiones are well connected with other sections of the paper.

Thank you very much.

5. Implications for research, practice and/or society: Does the paper identify clearly any implications for research, practice and/or society? Does the paper bridge the gap between theory and practice? How can the research be used in practice (economic and commercial impact), in teaching, to influence public policy, in research (contributing to the body of knowledge)? What is the impact upon society (influencing public attitudes, affecting quality of life)? Are these implications consistent with the findings and conclusions of the paper?: Implications are interesting for theory and practice.

Thank you for your comment.

6. Quality of Communication: Does the paper clearly express its case, measured against the technical language of the field and the expected knowledge of the journal's readership? Has attention been paid to the clarity of expression and readability, such as sentence structure, jargon use, acronyms, etc.: The paper is well-written and structured.

Thank you again.

Reviewer: 2
Recommendation: Major Revision

Comments:
Dear Author/s,

thanks for letting me review your manuscript. I really appreciated the reading. The paper has some potential, but I thinks some revisions are due to improve its quality and fitting.

Please, find my suggestions below.
Thank you for your comments. We have tried to address your concerns in our best way.

First and foremost, a general rule is that the research must be fitting with the aim and scope of the Journal. Your manuscript could be submitted to any management journals, and, probably, in its current version it fits best JKM. Thereby, my first advice is to generally refocus the manuscript considering why and how the topics under investigation are relevant for intellectual capital. This major revision should be made throughout the manuscript.

Thank you for your appreciation. You are right, this point was not very clear in the previous version of the paper. Now, we have made more explicit the relevance of our study for the research on intellectual capital. To do so, in the new version of the paper, we have added some paragraphs throughout the manuscript (i.e., introduction, literature review, hypotheses section, discussion, implications and conclusion).

In order to reinforce the fitting of the paper with the scope of JIC, we have also included several references of papers published in the journal to support our arguments:


Title: the title clears the objective and the domain of the work.

Thank you for your comment.

Abstract and keywords: the abstract is well-written and it effectively synthesizes the paper. However, I see no implications for IC discussed. Similarly, IC is not mentioned among keywords.
We agree with your point. Now, the abstract has been reinforced in the new version of the paper, especially those aspects related to intellectual capital. We have added the following paragraph:

“Intellectual capital includes what employees know, and the agility to search and retrieve knowledge (organizational agility). Organizational agility could be seen as the result of using validated routines and protocols (knowledge application), but also as the result of using unproven theories, rumours, colloquial expressions or sayings (counter-knowledge), which means that organizational memory may enable both the application of good knowledge and the mitigation of counter-knowledge.”

Introduction: Generally, the introduction has to engage the reader by explaining how concepts are tied together. Unfortunately, it seems to me that you rather jump from a concept to the other, without actually linking them together. Also, at a certain point, you skip from counter-knowledge back to organizational memory. As the result, the power of the narrative is extremely diminished. Please, try to nuance and explain the passage from a concept to another. Also, synthesize the introduction by shifting some descriptions to the dedicated literature section.

After considering your suggestions, we have included several paragraphs both in the introduction and in the literature review to include these ideas, and we have rewritten some paragraphs of the previous version. We hope to have clarified the theoretical background of the paper and the contribution to the field. Much more references have been added also to support our arguments.

The paragraphs included in the introduction are the following:

“Intellectual capital is the sum of the intangible assets a company has at its disposal that can be used to create competitive advantages (Bueno et al., 2006; Lentjušenkova and Lapina, 2016). An important component of intellectual capital is ‘intellectual agility’, which is defined as the environments in which the staff are willing to modify structures and to think of innovative strategies to face challenges (Bontis et al., 2000, 2002; Ditillo, 1998). This concept is closely connected to that of “organizational agility”, which means the capability of firms to adjust/adapt their strategic direction or redeploy/redirect their resources to create value (Charbonnier-Voirin, 2011; Doz and Kosonen, 2008; Teece et al., 2016). This study reports that organizational agility may be considered as an extension of intellectual agility and defines it as the result of transferring and retrieving knowledge from one context to another (Weber and Tarba, 2014; Pereira et al., 2018).”

“In order to grow and prosper in the current context of crisis and uncertainty, it is necessary for companies to respond rapidly to the rapid high-tech and
environmental challenges (Cai et al., 2019; Lu and Ramamurthy, 2011; Pereira et al., 2018). For these reasons, the literature has attempted to present structures for achieving agility (Chakravarty et al., 2013; Wahyono, 2018). In such contributions, it is observed that the ability to examine the market in search of opportunities or threats and to harmonize them within the company depends on the knowledge available both inside and outside the organization. This means that organizational agility is not only the result of using validated routines and protocols (i.e., knowledge application), but it may also be the result of using unproven theories, rumours, colloquial expressions or sayings (i.e., counter-knowledge).

“Although knowledge application and counter-knowledge may signify the exchange of information, the utilization of verified and unverified information involves the use and development of different knowledge structures with different characteristics.”

“As the simultaneous pursuit of verified and unverified information may hamper the development of intellectual capital and organizational agility (Cegarra-Navarro et al., 2015b), it is important to make use of ‘organizational memory’ to better support the networking of employees, managers, and companies (Al-Faouri et al., 2014).”

The new references included are:


Literature review:

The section on organizational agility appears pretty underdeveloped, especially when compared to the introduction. Please, extend this section consistently. Both updated references and seminal articles are missing. In addition, I do not see any mention to study on organizational agility, IC and organizational memory. Please, provide information on existing gaps, motivation of their relevance and other similarly important issues. Similarly, for the other two subsections, I recommend you to update and extend your analysis. Mostly, concepts seems poorly tied together. You should work on this aspect, otherwise the message you want to convey can be negatively affected.

Thank you for your suggestions as to how we might improve the paper. In the new version of the paper, we have added several paragraphs to include your comments. Now, the literature review has been reinforced.

The paragraphs included in the literature review are the following:

“Organizational agility has been defined in various ways, including an intellectual viewpoint. Roos et al. (1997) revive the concept of ‘intellectual agility’, which describes how individuals can integrate knowledge and skills into a practical context through learning. When intellectual agility owned by employees is captured and coordinated by the organization then it is transformed into organizational agility, which Sull (2010) defines as the capacity to recognise and grab opportunities more hastily than competitors. There are other definitions, such as that of Dyer and Ericksen (2010), who bring to light the fact that organizational agility is the result of using the conceptual lenses provided by the organizational context such as interactions and self-organizing.”

“From a management viewpoint, the achievement of organizational agility is related to two interdependent approaches: a) to find out why one company should respond hastily to external challenges (Appelbaum et al., 2017), and b) which parts of the operational system need to incorporate changes to operate in a more efficient way (Leybourn, 2013). Concerning the second issue, Leybourn (2013) suggests that fundamental changes usually take place along with communication and lean management structures.”

“Braunscheidel and Suresh (2009) suggest that the accomplishment of organizational agility is related to a set of drivers. Among the top facilitating enablers, they highlight cross-functional and external integration. In this vein, Eshlaghy et al. (2010) identified factors such as leadership, engagement or satisfaction. Based on this research, it can be asserted that organizational agility requires the integration of knowledge processes in an appropriate way (Allameh, 2018; Cegarra-Navarro et al., 2015b; Chakravarty et al., 2013). Although different supporting processes of knowledge management exist (Gold et al., 2001; Martelo-Landroguez et al., 2011; Ranjbarfard et al., 2014), the acquisition/creation, transfer, retention, and application of knowledge are
considered to be the key knowledge management processes (Martelo-Landroguez and Cegarra-Navarro, 2014).”

“According to Walsh and Ungson (1991, p. 61), organizational memory refers to the “stored information from an organization’s history that can be brought to bear on present decisions”. Organizational memory is particularly important as a store of either the objectified knowledge (e.g., procedures and protocols) or the collective knowledge in the form of culture or shared values (Ebbers and Wijnberg 2009; Tippins and Sohi, 2003). These terms have also been defined as hard and soft memories (Córdoba-Pachón and Cegarra-Navarro, 2010; Hardy-Vallee, 2012; Kellerman, 2004). The presence of both types of knowledge (i.e., objectified and collective) not only guides the actions of individuals but also their thoughts (Cegarra-Navarro, 2007; Moorman and Miner, 1998). For example, while rules and procedures provide the framework of reference for applying knowledge, the common philosophy and culture provide the basic understandings for interpreting the perceptions and affections behind what is being said (García-Pérez et al., 2019).”

“Applying available knowledge in the form of procedures and protocols will save time and facilitate extrapolation of decisions from one context to another (Chang Lee et al., 2005). In addition, applying objectified knowledge in different contexts will give the company the necessary experience to avoid making previous mistakes (Senge, 1990). Hence, knowledge application allows firms to take advantage of what they have learned in the past (e.g., Cui et al., 2005; Gold et al., 2001; Lin, 2007), and it also avoids repetition of past mistakes (Dunham and Burt, 2011; Villar et al., 2014).”

“The interpretation of knowledge is not only based on complete or accurate information, but it can also be based on narrative descriptions or interpretations of history (Chapman and Ferfolja, 2001), what this may mean is that collective knowledge can help people to cope with malicious fake elements or gossips (e.g., Baumeister et al., 2004; Yerkovich, 1977). For example, one way to avoid the presence of unverified information is by increasing process efficiency and ways of finding common positions within the firm (Inkinen, 2016). Organizations can find common positions by fostering interaction across different departments and levels of responsibility through informal exchanges, dialogue or joint projects (Cepeda-Carrion et al., 2012).”

“The above ideas could mean that companies, in order to adapt to new challenges, have either to avoid the misuse of bad knowledge or to promote the application of good knowledge. Otherwise, inappropriate or false beliefs generated via malicious fake elements or gossips can not only create misunderstandings (Thompson, 2008), but also may hinder the achievement of agility (Cepeda-Carrion et al., 2012). The following section provides more details in this regard.”

“Drawing upon a reading of Yerkovich (1977) and Baumeister et al. (2004), Cegarra-Navarro et al. (2014) propose that much counter-knowledge may promote social integration and entertainment. Although counter-knowledge is
not necessarily a bad thing, this study refers to ‘bad counter-knowledge’ as the content of manipulated messages that lead to a vicious circle of mutual distrust and potential problems for organizations in their effort to achieve agility and regain objectivity for public interest (Sánchez-Casado et al., 2015).”

The new references included are:


Hypotheses: this section suffer from some major issues. First, why this paper is relevant for this Journal? I see no mention of IC, so, unless you provide a clear explanation on its relevance for IC, I suggest you to change the outlet. Second, the way you present you hypotheses make them seem poorly original. How your hypotheses are distanced from those of the antecedent authors you mention? Third, again, the hypotheses seem untied between each other.

As we have commented above, we have added some paragraphs throughout the manuscript to highlight the relevance of our study for intellectual capital’s literature in general and, in particular, for JIC.

Hypotheses section has been changed almost completely in order to include your suggestions. Therefore, we hope now the argumentation follow an understandable line of thinking.

New references are also included:


Empirical section: this section seems well-written. Method an variables sound consistent, results are almost clear.

Thank you very much for this comment.
Discussion: I suggest the author to better explain the originality of the work. I do not see how it contributes to the field of study.

Thank you again. We have tried to show the originality of the study by justifying and explaining its contribution to the state-of-the-field more strongly and in greater detail. In this line, we highlight the inclusion of the following ideas:

“This study also investigates how organizational memory can mitigate the presence of counter-knowledge, along with exploring how these activities can, in turn, result in the achievement of organizational agility.”

“In order to mitigate the misuse of counter-knowledge, this study provides evidence that organizational memory can play a part in overcoming the cost of poor communication or miscommunication.”

“The importance of transferring and retrieving knowledge to stimulate the creation of intellectual capital is well-known. In this vein, and considering that organizational agility is the result of adapting knowledge from one context to another (Pereira et al., 2018; Weber and Tarba, 2014), it can be considered as one of the most visible components of the intellectual capital of any organization (Bueno et al., 2006; Lentjušenkova and Lapina, 2016).”

“Intellectual capital is not just what people know, it is also the glue that holds organizational members together (Bueno et al., 2006; Edvinsson and Malone, 1997; Lentjušenkova and Lapina, 2016). Counter-knowledge, whether we like it or not, is one of the most important components (glues) of the informal system of any organization and a means of entertainment and social integration (Cegarra-Navarro et al., 2014). Despite counter-knowledge is not necessarily a bad thing, when employees use unverified information to manipulate people’s expectations in their own interest, it is likely that inaccurate things will be accepted as authentic (Thompson, 2008).”

We have also made more explicit the contribution of the paper to the field of study in the conclusion section by including the following paragraph:

“The ability of an organization to make agile some tasks maintaining a balance between the application of learned knowledge and the dissemination of unsubstantiated information (i.e., counter-knowledge) is a subject which has generally been overlooked in the extant literature. Therefore, this research has addressed an issue of significant importance for business and raised awareness of the importance to carry out further research to avoid exposure of workers to counter-knowledge. As we have stated before, results show that organizational agility relies on both knowledge application and overcoming counter-knowledge.”
Implications and conclusions: please, explain clearly what are the limitation of the study and what are the future research roads that are opened by your analysis.

In the conclusion section, we have highlighted the main limitation of the study and it also appears how to address it in future research:

“One of the main limitations of this study is the fact that the sample used was from Spain. Future research could offer a more international perspective by combining firms from different countries. In addition, data collection used the key informant method, which means that the study reflects the opinion of one person. Future studies should consider collecting data from multiple respondents within each organization.”

Additional Questions:

1. Originality: Does the paper contain new and significant information adequate to justify publication?: The paper’s originality is not clear enough.

As we have commented above, we have tried to show the originality of the study by justifying and explaining its contribution to the state-of-the-field more strongly and in greater detail.

2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources? Is any significant work ignored?: The literature analysis is poor and it requires a major effort. Concepts are untied and, most of all, the paper does not mention at all IC.

The new version of the paper includes several paragraphs throughout the manuscript to highlight the relevance of our study for intellectual capital’s literature in general and, in particular, for JIC. We have also included new references to justify our arguments and to reinforce the literature review. We hope now the paper follows an understandable line of thinking and the different concepts appears tied together.

3. Methodology: Is the paper’s argument built on an appropriate base of theory, concepts, or other ideas? Has the research or equivalent intellectual work on which the paper is based been well designed? Are
the methods employed appropriate?: The methodology is sounding and grounded adequately.

Thanks for this point.

4. Results: Are results presented clearly and analysed appropriately? Do the conclusions adequately tie together the other elements of the paper?: Results are clear and well presented

Thank you again.

5. Implications for research, practice and/or society: Does the paper identify clearly any implications for research, practice and/or society? Does the paper bridge the gap between theory and practice? How can the research be used in practice (economic and commercial impact), in teaching, to influence public policy, in research (contributing to the body of knowledge)? What is the impact upon society (influencing public attitudes, affecting quality of life)? Are these implications consistent with the findings and conclusions of the paper?: Implications are explained, but, perhaps, this section needs further refinements.

According to your suggestions, we have also reinforced implications. In particular, we have identify clearly how the findings of our research could be used in practice:

“The implications for practice of the above-mentioned findings is that managers may need to be aware of the possibility that “the knowledge” that employees and themselves need to carry out their jobs may vary from one context to another. In our study, we further suggest that the presence of right memories allows organizations to respond appropriately to environmental threats and to adjust to the changes in a business environment.”

“The provision of a practical guide to shape agile organizations is another contribution of this study. Regarding this, the results support that organizational agility is not only the result of using validated routines and protocols (i.e., knowledge application), but it may also be the result of using unproven theories, rumours, colloquial expressions or sayings (i.e., counter-knowledge), which means that organizational memory may enable both the application of good knowledge and the mitigation of counter-knowledge. These findings may be helpful in order to find useful combinations and to develop low-risk counter-knowledge and high-quality process of knowledge application.”
6. Quality of Communication: Does the paper clearly express its case, measured against the technical language of the field and the expected knowledge of the journal's readership? Has attention been paid to the clarity of expression and readability, such as sentence structure, jargon use, acronyms, etc.: The communication is good.

Thank you very much.