



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

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Abstract:	

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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-Faouri *et al.*, 2014). Organizational memory is considered a key factor to create and sustain a firm’s competitive advantage (Anderson, 1983; Ebberts 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 (Ebberts 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.

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4 On the basis of the results of the existing studies, we define organizational agility as the
5 capability of firms to adjust/adapt their strategic direction or redeploy/redirect their
6 resources to create value, both reacting rapidly to changes and anticipating and seizing
7 opportunities (Charbonnier-Voirin, 2011; Teece *et al.*, 2016). Hence, the agility to react
8 quickly and innovate is key **to compete effectively in markets** in which demand and
9 innovations advance more quickly (Alegre *et al.*, 2013; Gassmann, 2006). As Shahrabi
10 (2012) notes, in order to **compete effectively** and better utilize the available opportunities,
11 companies must be able to seamlessly integrate knowledge processes in a manner that
12 facilitates organizational agility. In addition, the effective use of knowledge resources in
13 firms promotes their innovation and their response to fast-changing customer
14 expectations (Jiménez-Jiménez *et al.*, 2014; Peeters and Martin, 2017; Sandhawalia and
15 Dalcher, 2011).

16 17 18 19 2.2. Knowledge management processes

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21 **Braunscheidel and Suresh (2009) suggest that the accomplishment of organizational**
22 **agility is related to a set of drivers. Among the top facilitating enablers, they highlight**
23 **cross-functional and external integration. In this vein, Eshlaghy *et al.* (2010) identified**
24 **factors such as leadership, engagement or satisfaction. Based on this research,** it can be
25 asserted that organizational agility requires the integration of knowledge processes in an
26 appropriate way (Allameh, 2018; Cegarra-Navarro *et al.*, 2015b; Chakravarty *et al.*,
27 2013). **Although different supporting processes of knowledge management exist** (Gold *et*
28 *al.*, 2001; Martelo-Landroguez *et al.*, 2011; Ranjbarfard *et al.*, 2014), the
29 acquisition/creation, transfer, retention, and application of knowledge are considered to
30 be the key knowledge management processes (Martelo-Landroguez and Cegarra-
31 Navarro, 2014).

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35 Knowledge acquisition involves the generation and accumulation of know-how in
36 organizations (Gold *et al.*, 2011; Jantunen, 2005; Lin and Lee, 2005). Knowledge transfer
37 involves the distribution of understandings and know-how within firms (Baskerville and
38 Dulipovici, 2006; Manfredi Latilla *et al.*, 2018). Knowledge retention, also known as
39 organizational memory, aims to collect knowledge and make it accessible to anyone in
40 the firm in order to benefit decision-making (Davenport and Prusak, 1998). And
41 knowledge application refers to the utilization of knowledge on a daily basis (Jantunen,
42 2005). Of these four processes, our study focuses on two of them: **knowledge retention**
43 **and knowledge application.**

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47 According to Walsh and Ungson (1991, p. 61), organizational memory refers to the
48 “stored information from an organization’s history that can be brought to bear on present
49 decisions”. **Organizational memory is particularly important as a store of either the**
50 **objectified knowledge (e.g., procedures and protocols) or the collective knowledge in the**
51 **form of culture or shared values** (Ebbers and Wijnberg 2009; Tippins and Sohi, 2003).
52 These terms have also been defined as **hard and soft memories** (Córdoba-Pachón and
53 Cegarra-Navarro, 2010; Hardy-Vallee, 2012; Kellerman, 2004). **The presence of both**
54 **types of knowledge (i.e., objectified and collective) not only guides the actions of**
55 **individuals but also their thoughts** (Cegarra-Navarro, 2007; Moorman and Miner, 1998).
56 **For example, while rules and procedures provide the framework of reference for applying**
57 **knowledge, the common philosophy and culture provide the basic understandings for**
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3 interpreting the perceptions and affections behind what is being said (García-Pérez *et al.*,
4 2019).
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6 Applying available knowledge in the form of procedures and protocols will save time and
7 facilitate extrapolation of decisions from one context to another (Chang Lee *et al.*, 2005).
8 In addition, applying objectified knowledge in different contexts will give the company
9 the necessary experience to avoid making previous mistakes (Senge, 1990). Hence,
10 knowledge application allows firms to take advantage of what they have learned in the
11 past (e.g., Cui *et al.*, 2005; Gold *et al.*, 2001; Lin, 2007), and it also avoids repetition of
12 past mistakes (Dunham and Burt, 2011; Villar *et al.*, 2014).
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15 The interpretation of knowledge is not only based on complete or accurate information,
16 but it can also be based on narrative descriptions or interpretations of history (Chapman
17 and Ferfolja, 2001), what this may mean is that collective knowledge can help people to
18 cope with malicious fake elements or gossips (e.g., Baumeister *et al.*, 2004; Yerkovich,
19 1977). For example, one way to avoid the presence of unverified information is by
20 increasing process efficiency and ways of finding common positions within the firm
21 (Inkinen, 2016). Organizations can find common positions by fostering interaction across
22 different departments and levels of responsibility through informal exchanges, dialogue
23 or joint projects (Cepeda-Carrion *et al.*, 2012).
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27 The above ideas could mean that companies, in order to adapt to new challenges, have
28 either to avoid the misuse of bad knowledge or to promote the application of good
29 knowledge. Otherwise, inappropriate or false beliefs generated via malicious fake
30 elements or gossips can not only create misunderstandings (Thompson, 2008), but also
31 may hinder the achievement of agility (Cepeda-Carrion *et al.*, 2012). The following
32 section provides more details in this regard.
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34

35 2.3. Counter-knowledge 36

37 Counter-knowledge refers to “misinformation packaged to look like fact” (Thompson,
38 2008, p. 1). Many people are prone to accept as facts information derived from unverified
39 sources, false, misleading, exaggerated, or slanderous rumours that are being printed in
40 much of the mass media throughout the world (Baumeister *et al.*, 2004; Kurland and
41 Pelled, 2000; Szvetelszky, 2003). It should be noted that the misuse of counter-knowledge
42 in a learning process may hinder the creation of new knowledge (Macinnes, 2005).
43 Drawing upon a reading of Yerkovich (1977) and Baumeister *et al.* (2004), Cegarra-
44 Navarro *et al.* (2014) propose that much counter-knowledge may promote social
45 integration and entertainment. Although counter-knowledge is not necessarily a bad
46 thing, this study refers to ‘bad counter-knowledge’ as the content of manipulated
47 messages that lead to a vicious circle of mutual distrust and potential problems for
48 organizations in their effort to achieve agility and regain objectivity for public interest
49 (Sánchez-Casado *et al.*, 2015).
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53 Counter-knowledge is not only the result of unproven theories or spurious claims
54 (Thompson, 2008), but it may also be the result of wrong thinking, bad experiences and
55 abnormal sensations. If we extrapolate the concept that Bratianu and Orzea (2013) applied
56 to ‘emotional knowledge’ and its effects, we could assert that uncontrolled emotions such
57 as sadness or pain based on groundless fear of negative evaluation could cause people to
58 break off relationships with their companies and supervisors (Bratianu, 2015; Paradiso,
59
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1998). 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:

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3 *Hypothesis 1: Knowledge application mediates positively the relationship between*
4 *organizational memory and organizational agility.*
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7 Thoughts and memories that do not come from an individual's lived experience are called
8 'prosthetic memories' (Landsberg, 1995). Our brains tend to pick up on the gist of smells,
9 colours, tastes (a survival instinct), which in turn means that human sense-making is not
10 only a gradual process where lived experiences allow people to create more effective
11 learning processes but rather a discrete process where the addition of a small piece of
12 information can suddenly alter the notion of individual of what the right thing to do is and
13 counts as experience (Wilson, 1995). These considerations lead us to argue that the ability
14 to extract meaning from counter-knowledge is a semantic construct dependent on
15 prosthetic memory aids such as films, photos, appointment books or checklists
16 (Landsberg, 1995; Tulving, 2002).
17

18
19 In the same way that cartoon videos can assist children in retraining individual memories
20 through drawings, acting, storytelling or making models (Landsberg, 1995),
21 organizational memory is able to assist cognitive processes (Baskerville and Dulipovici,
22 2006), and how external information is processed (Schwenk, 1984). For example, when
23 Evelyn Harrison, an expert on sculpture, was shown a statue that the J. Paul Getty
24 Museum had purchased for \$10 million, she blurted out that it was fake. How did she tell
25 difference between the fake and the real article so quickly? A possible explanation would
26 be the fact that her subconscious mind sorted through knowledge that she had gained in
27 the past when was reviewing books, art magazines and catalogues.
28

29
30 What the knowledge gained means for decision-making is that right memories triggers
31 the identification of unjustified statements or authors' opinions on the presented facts,
32 which in turn facilitates the speedy rectification of problems through the reduction of
33 misunderstandings and the cost of poor communication or miscommunication (Jacobs,
34 2010). Thanks to these structures, a correct interpretation of the reality exists and it allows
35 us to change bad things to good (Haldin-Herrgard, 2000). Therefore, by using fine-tuned
36 routines and right memories, both individuals and organizations may be empowered in
37 their efforts to counteract gossip, lies, exaggeration or partial truths that would lead to a
38 lower level of organizational agility (Chapman and Ferfolja, 2001; Markoczy, 1994).
39 Organizational memory may facilitate the reorientation of unverified information
40 (Moorman and Miner, 1997, 1998), and the recognition of fake news (Cegarra-Navarro
41 *et al.*, 2012).
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46 The above considerations also lead us to frame the following hypothesis:
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48 *Hypothesis 2: Counter-knowledge mediates positively the relationship between*
49 *organizational memory and organizational agility.*
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52 The Figure 1 represents the proposed relationships. While the upper path represents the
53 positive influence of organizational memory on organizational agility through the
54 application of knowledge, the lower path assumes that the negative influence of counter-
55 knowledge on organizational agility is counteracted by the existence of organizational
56 memory.
57

58 Insert Figure 1 about here
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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

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3 measured organizational agility using items adapted from Lu and Ramamurthy's (2011)
4 work. Our scale consists of six items. Recent papers have successfully used this measure
5 (e.g., Cegarra-Navarro *et al.*, 2015b).
6

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8 Our latent variables are going to be measured as composites (Cepeda-Carrion *et al.*, 2019;
9 Henseler, 2017). These variables can be described as design constructs or artifacts
10 compromising more elementary components (i.e., dimensions or facts). Organizational
11 memory (OM), knowledge application (KA), counter-knowledge (CK), and
12 organizational agility (OA) are modelled as Mode A composites, expecting a high level
13 of correlation between indicators (Henseler *et al.*, 2016; Rigdon, 2016). This study used
14 a survey to collect data on a 7-point Likert scale (see Appendix for a list of items).
15

16 17 4.3. Data analysis 18

19 The proposed hypotheses were tested simultaneously using PLS-SEM (Richter *et al.*,
20 2016) due to all the constructs have been considered as composites. Therefore, the total
21 variance of all constructs is used to estimate model parameters (Hair *et al.*, 2017). PLS-
22 SEM requires specific attention concerning model identification (Henseler *et al.*, 2016),
23 such that each construct needs a nomological net in order to be assessed. We run PLS-
24 SEM analysis using the SmartPLS v. 3.2.8. (Ringle *et al.*, 2015).
25

26
27 According to the recent advances of PLS-SEM reporting, we have followed different
28 steps (Hair *et al.*, 2017; Henseler *et al.*, 2016). First, we analyse the model fit. We report
29 the standardized root mean square residual (SRMR) to quantify the degree of (mis-)fit
30 (Henseler *et al.*, 2014).
31

32
33 Next, the assessment of the measurement model was performed. This allows the
34 specification of the relationships between the observable or manifest variables and the
35 theoretical concepts or latent variables. First, we have examined the fit of the saturated
36 model (Henseler, 2017; Henseler *et al.*, 2016). In order to demonstrate the reliability of
37 the model composites, and their validity, we have used ρ_A as an appropriate measure of
38 internal consistency reliability (Henseler *et al.*, 2016). The average variance extracted
39 (AVE) has been used to measure unidimensionality (Fornell and Larcker, 1981). Finally,
40 a heterotrait-monotrait ratio of correlations (HTMT) has been used to test discriminant
41 validity (Henseler *et al.*, 2015).
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44
45 The assessment of the structural model was also carried out by testing the hypothesized
46 relationships between composites (constructs). The path coefficients are the most
47 important result of the structural model. The consideration of bootstrap percentile
48 confidence intervals gives greater assurance than simply relying on testing the
49 significance of null hypothesis (Cohen, 1994).
50

51 52 5. Results 53

54 The SRMR value for the estimated model is 0.064. This indicator is used to assess the
55 global model fit (Henseler *et al.*, 2016). Consequently, the proposed model has a good fit
56 (Hair *et al.*, 2017; Henseler *et al.*, 2016; Hu and Bentler, 1999). As we have said before,
57 the analysis and interpretation of the PLS-SEM estimations consist of: a) the assessment
58 of the reliability and validity of the outer model (i.e., measurement model), and b) the
59 assessment of the inner model (i.e., structural model).
60

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).

Insert Table 1 about here

5.2. Inner model

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

Insert Figure 2 about here

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).

Insert Table 2 about here

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 ($a_1*b_1+a_2*b_2$).

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

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3 indirect effect through knowledge application (a_1*b_1) has a point estimate of 0.48 while
4 its confidence interval does not present any sign change. The same result was obtained
5 for hypothesis 2, which is also supported. The indirect effect through counter-knowledge
6 (a_2*b_2) has a point estimate of 0.06, without having changed the sign of its confidence
7 interval.
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10 As Table 3 shows, a significant total effect exists between organizational memory and
11 organizational agility ($c= 0.70$, $t= 12.89$). However, when knowledge application and
12 counter-knowledge are included in the model as mediators, organizational memory has
13 no longer a significant direct effect on organizational agility ($c'= 0.16$, $t= 1.29$). Hence, a
14 full mediation can be assumed of knowledge application and counter-knowledge on the
15 relationship between organizational memory and organizational agility. Nevertheless, this
16 is not supported due to the low value of the variance accounted for (VAF) index (Hair *et*
17 *al.*, 2017). VAF indicates the size of the indirect effect in relation to the total effect. Our
18 model achieves a VAF of 77.2%. Consequently, a partial mediation exists. The non-
19 significance of the direct effect (c') could be caused by a moderated statistical power (i.e.,
20 112 valid questionnaires).
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24 Insert Table 3 about here
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26 Due to the existence of a multiple mediation, the authors also test if mediator M_1 (i.e.,
27 knowledge application) has a stronger mediator effect than mediator M_2 (i.e., counter-
28 knowledge). Hence, we evaluate the statistical difference between a_1*b_1 and a_2*b_2
29 (Cepeda-Carrion *et al.*, 2018). As a significant difference exists between both indirect
30 effects (see Table 4), we state that knowledge application (M_1) is a stronger mediator than
31 counter-knowledge (M_2).
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34 Insert Table 4 about here
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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 (Bueno *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 (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). 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

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3 to organizational memory, but not all, is channelled through the process of knowledge
4 application (i.e., hypothesis 1). The process of knowledge application allows
5 organizational members to gain much deeper insight into the company's memory, as well
6 as support and make more informed decisions (Lin and Lee, 2005). It also allows
7 organizational members to deal with customers systematically (Moorman and Miner,
8 1998; Tippins and Sohi, 2003), which in turn leads to improved customer service levels,
9 service quality, and a higher level of organizational agility (Boden, 2004; Power *et al.*,
10 2001; van Oosterhout *et al.*, 2006).

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

30 31 7. Implications for managers and organizations

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

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

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

12 8. Conclusions

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

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

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

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

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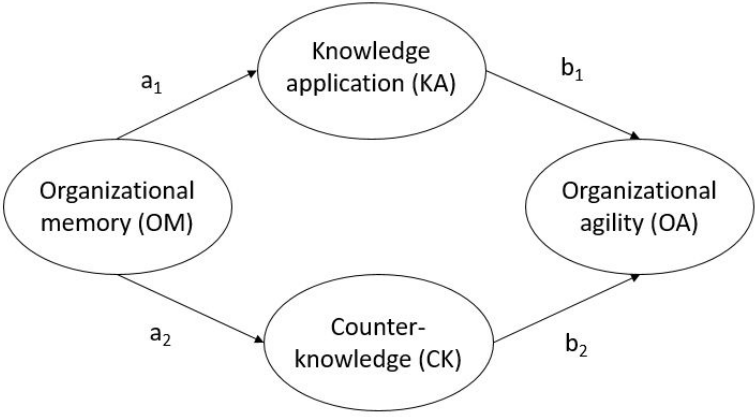
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Appendix: Questionnaire items

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 Ferfolja (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 for resolving problems
Source: Adapted from Gold <i>et al.</i> (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 <i>et al.</i> (2007)

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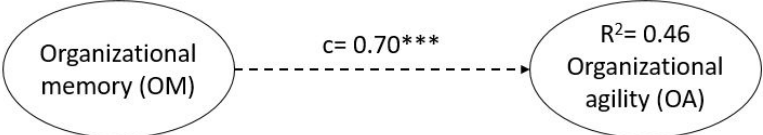
Figure 1. Proposed theoretical model



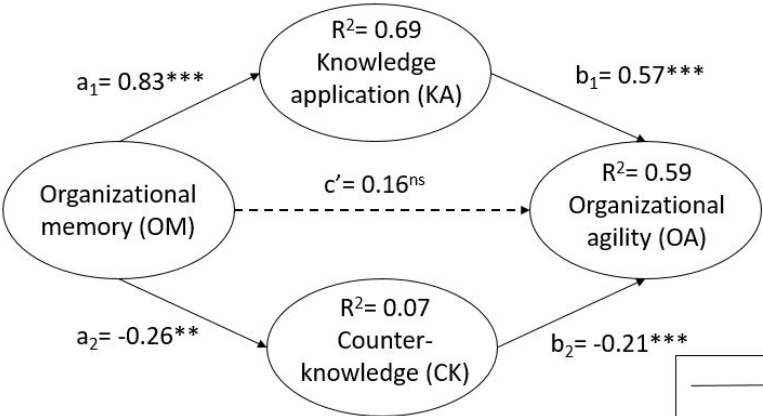
$H_1 = OM \rightarrow KA \rightarrow OA = a_1 * b_1$
 $H_2 = OM \rightarrow CK \rightarrow OA = a_2 * b_2$

Figure 2. Research model

A) Model with total effect



B) Model with mediated effects



***p<0.001, **p<0.01, ns: not significant (based on t(4999), one-tailed test)

	Hypothesized relationship
	Non-hypothesized relationship

Table 1. Reliability, convergent validity, and discriminant validity values of the outer (measurement) model

Construct	Mean	S.D.	Rho_A (ρ)	CR	AVE	HTMT			
						1	2	3	4
1. Counter-knowledge	3.07	1.48	0.95	0.93	0.79				
2. Knowledge application	5.05	1.07	0.97	0.97	0.77	0.22			
3. Organizational agility	5.14	1.00	0.91	0.92	0.66	0.38	0.77		
4. Organizational memory	4.83	1.14	0.91	0.93	0.79	0.28	0.88	0.74	

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

Effects on endogenous variables	Direct effect	t value (bootstrap)	Percentile 90% confidence intervals	Explained variance: R ²	Effect size: f ²
Knowledge application (R ² = 0.69) Organizational memory (a ₁)	0.83***	29.57	[0.78; 0.88] Sig.	68.80%	2.19
Counter-knowledge (R ² = 0.07) Organizational memory (a ₂)	-0.26**	2.70	[-0.42; -0.10] Sig.	6.81%	0.07
Organizational agility (R ² = 0.59) Organizational memory (c')	0.16 ^{ns}	1.29	[-0.07; 0.42] N. Sig.	10.85%	0.01
Knowledge application (b ₁)	0.57***	4.81	[0.37; 0.75] Sig.	42.01%	0.24
Counter-knowledge (b ₂)	-0.20***	3.23	[-0.30; -0.10] Sig.	7.10%	0.09

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

Total effect of OM on OA (c)		Direct effect of OM on OA		Indirect effects of OM on OA					
Coefficient	t value	Coefficient	t value	Point estimate	Percentile bootstrap 90% confidence interval		VAF		
					Lower	Upper			
0.70***	12.89	c'	0.16 ^{ns}	1.29	Total= a ₁ *b ₁ +a ₂ *b ₂	0.54	0.32	0.70	77.2%
					H ₁ = a ₁ *b ₁ (via KA)	0.48	0.27	0.65	68.5%
					H ₂ = a ₂ *b ₂ (via CK)	0.06	0.01	0.11	8.5%

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

Differential effect	Value	Bootstrap 90% confidence interval	
		Lower	Upper
M1 – M2= (a1*b1) – (a2*b2)	0.42	0.24	0.58

Response letter Journal of Intellectual Capital**Manuscript ID JIC-03-2019-0048.R1**

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

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3 **Response to REVIEWERS**
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7 **Reviewer: 1**
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9 **Recommendation: Accept**
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12 **Comments:**

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14 **I am satisfied by the changes introduced in the new version of the paper.**
15 **Congratulations! I think it is a great paper.**
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19 Thank you very much, we really appreciate your comments.
20
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23 **Additional Questions:**
24

25 **1. Originality: Does the paper contain new and significant information**
26 **adequate to justify publication?: Yes.**
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30 Thank you.
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34 **2. Relationship to Literature: Does the paper demonstrate an adequate**
35 **understanding of the relevant literature in the field and cite an appropriate**
36 **range of literature sources? Is any significant work ignored?: Yes, the**
37 **paper is adequately grounded on previous literature.**
38
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41 Thanks.
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45 **3. Methodology: Is the paper's argument built on an appropriate base of**
46 **theory, concepts, or other ideas? Has the research or equivalent**
47 **intellectual work on which the paper is based been well designed? Are**
48 **the methods employed appropriate?: Yes, theoretical framework is solid.**
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52 Thank you.
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56 **4. Results: Are results presented clearly and analysed appropriately? Do**
57 **the conclusions adequately tie together the other elements of the paper?:**
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3 **Yes, results are clear. Conclusions are well connected with other**
4 **sections of the paper.**
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8 Thank you very much.
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12 **5. Implications for research, practice and/or society: Does the paper**
13 **identify clearly any implications for research, practice and/or society?**
14 **Does the paper bridge the gap between theory and practice? How can the**
15 **research be used in practice (economic and commercial impact), in**
16 **teaching, to influence public policy, in research (contributing to the body**
17 **of knowledge)? What is the impact upon society (influencing public**
18 **attitudes, affecting quality of life)? Are these implications consistent with**
19 **the findings and conclusions of the paper?: Implications are interesting**
20 **for theory and practice.**
21
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26 Thank you for your comment.
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30 **6. Quality of Communication: Does the paper clearly express its case,**
31 **measured against the technical language of the field and the expected**
32 **knowledge of the journal's readership? Has attention been paid to the**
33 **clarity of expression and readability, such as sentence structure, jargon**
34 **use, acronyms, etc.: The paper is well-written and structured.**
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38 Thank you again.
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44 **Reviewer: 2**

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46 **Recommendation: Major Revision**
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49 **Comments:**

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51 **Dear Author/s,**

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53 **thanks for letting me review your manuscript. I really appreciated the**
54 **reading. The paper has some potential, but I think some revisions are**
55 **due to improve its quality and fitting.**
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58 **Please, find my suggestions below.**
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3 Thank you for your comments. We have tried to address your concerns in our
4 best way.
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8 **First and foremost, a general rule is that the research must be fitting with**
9 **the aim and scope of the Journal. Your manuscript could be submitted to**
10 **any management journals, and, probably, in its current version it fits best**
11 **JKM. Thereby, my first advice is to generally refocus the manuscript**
12 **considering why and how the topics under investigation are relevant for**
13 **intellectual capital This major revision should be made throughout the**
14 **manuscript.**
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19 Thank you for your appreciation. You are right, this point was not very clear in
20 the previous version of the paper. Now, we have made more explicit the
21 relevance of our study for the research on intellectual capital. To do so, in the
22 new version of the paper, we have added some paragraphs throughout the
23 manuscript (i.e., introduction, literature review, hypotheses section, discussion,
24 implications and conclusion).
25
26

27 In order to reinforce the fitting of the paper with the scope of JIC, we have also
28 included several references of papers published in the journal to support our
29 arguments:
30
31

32 Bontis, N., Keow, W. C. C. and Richardson, S. (2000), "Intellectual capital and
33 business performance in Malaysian industries", Journal of Intellectual Capital,
34 Vol. 1 No. 1, pp. 85-100.
35

36 Bueno, E., Salmador, M. P., Rodríguez, Ó. and Martín De Castro, G. (2006),
37 "Internal logic of intellectual capital: a biological approach", Journal of
38 Intellectual Capital, Vol. 7 No. 3, pp. 394-405.
39

40 Haldin-Herrgard, T. (2000), "Difficulties in diffusion of tacit knowledge in
41 organizations", Journal of Intellectual Capital, Vol. 1 No. 4, pp. 357-365.
42
43

44 Lentjušenkova, O. and Lapina, I. (2016), "The transformation of the
45 organization's intellectual capital: from resource to capital", Journal of
46 Intellectual Capital, Vol. 17 No. 4, pp. 610-631.
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50 **Title: the title clears the objective and the domain of the work.**
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54 Thank you for your comment.
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58 **Abstract and keywords: the abstract is well-written and it effectively**
59 **synthesizes the paper. However, I see no implications for IC discussed.**
60 **Similarly, IC is not mentioned among keywords.**

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5 We agree with your point. Now, the abstract has been reinforced in the new
6 version of the paper, especially those aspects related to intellectual capital. We
7 have added the following paragraph:
8

9 *“Intellectual capital includes what employees know, and the agility to search and*
10 *retrieve knowledge (organizational agility). Organizational agility could be seen*
11 *as the result of using validated routines and protocols (knowledge application),*
12 *but also as the result of using unproven theories, rumours, colloquial*
13 *expressions or sayings (counter-knowledge), which means that organizational*
14 *memory may enable both the application of good knowledge and the mitigation*
15 *of counter-knowledge.”*
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20
21 **Introduction: Generally, the introduction has to engage the reader by**
22 **explaining how concepts are tied together. Unfortunately, it seems to me**
23 **that you rather jump from a concept to the other, without actually linking**
24 **them together. Also, at a certain point, you skip from counter-knowledge**
25 **back to organizational memory. As the result, the power of the narrative is**
26 **extremely diminished. Please, try to nuance and explain the passage from**
27 **a concept to another. Also, synthesize the introduction by shifting some**
28 **descriptions to the dedicated literature section.**
29
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32
33 After considering your suggestions, we have included several paragraphs both
34 in the introduction and in the literature review to include these ideas, and we
35 have rewritten some paragraphs of the previous version. We hope to have
36 clarified the theoretical background of the paper and the contribution to the field.
37 Much more references have been added also to support our arguments.
38
39

40 The paragraphs included in the introduction are the following:
41

42 *“Intellectual capital is the sum of the intangible assets a company has at its*
43 *disposal that can be used to create competitive advantages (Bueno et al., 2006;*
44 *Lentjušenkova and Lapina, 2016). An important component of intellectual*
45 *capital is ‘intellectual agility’, which is defined as the environments in which the*
46 *staff are willing to modify structures and to think of innovative strategies to face*
47 *challenges (Bontis et al., 2000, 2002; Ditillo, 1998). This concept is closely*
48 *connected to that of “organizational agility”, which means the capability of firms*
49 *to adjust/adapt their strategic direction or redeploy/redirect their resources to*
50 *create value (Charbonnier-Voirin, 2011; Doz and Kosonen, 2008; Teece et al.,*
51 *2016). This study reports that organizational agility may be considered as an*
52 *extension of intellectual agility and defines it as the result of transferring and*
53 *retrieving knowledge from one context to another (Weber and Tarba, 2014;*
54 *Pereira et al., 2018).”*
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59 *“In order to grow and prosper in the current context of crisis and uncertainty, it is*
60 *necessary for companies to respond rapidly to the rapid high-tech and*

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3 *environmental challenges (Cai et al., 2019; Lu and Ramamurthy, 2011; Pereira*
4 *et al., 2018). For these reasons, the literature has attempted to present*
5 *structures for achieving agility (Chakravarty et al., 2013; Wahyono, 2018). In*
6 *such contributions, it is observed that the ability to examine the market in*
7 *search of opportunities or threats and to harmonize them within the company*
8 *depends on the knowledge available both inside and outside the organization.*
9 *This means that organizational agility is not only the result of using validated*
10 *routines and protocols (i.e., knowledge application), but it may also be the result*
11 *of using unproven theories, rumours, colloquial expressions or sayings (i.e.,*
12 *counter-knowledge).”*
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16 *“Although knowledge application and counter-knowledge may signify the*
17 *exchange of information, the utilization of verified and unverified information*
18 *involves the use and development of different knowledge structures with*
19 *different characteristics.”*
20
21

22 *“As the simultaneous pursuit of verified and unverified information may hamper*
23 *the development of intellectual capital and organizational agility (Cegarra-*
24 *Navarro et al., 2015b), it is important to make use of ‘organizational memory’ to*
25 *better support the networking of employees, managers, and companies (Al-*
26 *Faouri et al., 2014).”*
27
28

29 The new references included are:

30 Al-Faouri, A. H., Al-Nsour, M. M. and Al-Kasasbeh, M. M. (2014), “The impact of
31 workforce agility on organizational memory”, Knowledge Management
32 Research & Practice, Vol. 12 No. 4, pp. 432-442.
33
34

35 Bontis, N., Crossan, M. M. and Hulland, J. (2002), “Managing an organizational
36 learning system by aligning stocks and flows”, Journal of Management Studies,
37 Vol. 39 No. 4, pp. 437-469.
38
39

40 Bontis, N., Keow, W. C. C. and Richardson, S. (2000), “Intellectual capital and
41 business performance in Malaysian industries”, Journal of Intellectual Capital,
42 Vol. 1 No. 1, pp. 85-100.
43
44

45 Bueno, E., Salmador, M. P., Rodríguez, Ó. and Martín De Castro, G. (2006),
46 “Internal logic of intellectual capital: a biological approach”, Journal of
47 Intellectual Capital, Vol. 7 No. 3, pp. 394-405.
48
49

50 Ditillo, A. (1998), “Intellectual capital - navigating in the new business
51 landscape”, Business Process Management Journal, Vol. 4 No. 1, pp. 85-88.
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54 Lentjušenkova, O. and Lapina, I. (2016), “The transformation of the
55 organization’s intellectual capital: from resource to capital”, Journal of
56 Intellectual Capital, Vol. 17 No. 4, pp. 610-631.
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59 Wahyono. (2018), “A conceptual framework of strategy, action and performance
60 dimensions of organizational agility development”, Industrial and Commercial
Training, Vol. 50 No. 6, pp. 326-341.

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

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3 considered to be the key knowledge management processes (Martelo-
4 Landroquez and Cegarra-Navarro, 2014).”

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

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

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

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

57 “Drawing upon a reading of Yerkovich (1977) and Baumeister et al. (2004),
58 Cegarra-Navarro et al. (2014) propose that much counter-knowledge may
59 promote social integration and entertainment. Although counter-knowledge is
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3 *not necessarily a bad thing, this study refers to 'bad counter-knowledge' as the*
4 *content of manipulated messages that lead to a vicious circle of mutual distrust*
5 *and potential problems for organizations in their effort to achieve agility and*
6 *regain objectivity for public interest (Sánchez-Casado et al., 2015)."*
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9 The new references included are:

10 Al-Faouri, A. H., Al-Nsour, M. M. and Al-Kasasbeh, M. M. (2014), "The impact of
11 workforce agility on organizational memory", Knowledge Management
12 Research & Practice, Vol. 12 No. 4, pp. 432-442.

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14 Appelbaum, S. H., Calla, R., Desautels, D. and Hasan, L. (2017), "The
15 challenges of organizational agility (part 1)", Industrial and Commercial Training,
16 Vol. 49 No. 1, pp. 6-14.

17
18 Braunscheidel, M. J. and Suresh, N. C. (2009), "The organizational antecedents
19 of a firm's supply chain agility for risk mitigation and response", Journal of
20 Operations Management, Vol. 27 No. 2, pp. 119-140.

21
22 Cegarra-Navarro, J. G. (2007), "Relationship memory", Journal of Small
23 Business Management, Vol. 45 No. 3, pp. 333-353.

24
25 Cepeda-Carrion, G., Cegarra-Navarro, J. G. and Jimenez-Jimenez, D. (2012),
26 "The effect of absorptive capacity on innovativeness: context and information
27 systems capability as catalysts", British Journal of Management, Vol. 23 No. 1,
28 pp. 110-129.

29
30 Córdoba-Pachón, J. R. and Cegarra-Navarro, J. G. (2010), "Beyond e-
31 procurement: a framework to develop e-government services for small and
32 medium enterprises (SMES)", in Systems Thinking and E-Participation: ICT in
33 the Governance of Society, IGI Global. pp. 154-173.

34
35 Dyer, L. and Ericksen, J. (2010), "Complexity-based agile enterprises: putting
36 self-organizing emergence to work", in The SAGE Handbook of Human
37 Resource Management, pp. 436-457.

38
39 Eshlaghy, A. T., Mashayekhi, A. N., Rajabzadeh, A. and Razavian, M. M.
40 (2010), "Applying path analysis method in defining effective factors in
41 organisation agility", International Journal of Production Research, Vol. 48 No.
42 6, pp. 1765-1786.

43
44 García-Pérez, A., Cegarra-Navarro, J. G., Bedford, D. A. D., Thomas, M. and
45 Wakabayashi, S. (2019), Critical Capabilities and Competencies for Knowledge
46 Organizations, Emerald Group Publishing.

47
48 Leybourn, E. (2013). Directing The Agile Organisation: A Lean Approach to
49 Business Management, IT Governance Ltd.

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51 Roos, J., Roos, G., Dragonetti, N.C. and Edvinsson, L. (1997), Intellectual
52 Capital: Navigating in the New Business Landscape, Basingtoke, Macmillan.
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3 Sánchez-Casado, N., Cegarra-Navarro, J. G. and Tomaseti-Solano, E. (2015),
4 “Linking social networks to utilitarian benefits through counter-knowledge”,
5 Online Information Review, Vol. 39 No. 2, pp. 179-196.
6

7 Sull, D. (2010), “Competing through organizational agility”, McKinsey Quarterly,
8 Vol. 1, pp. 48-56.
9

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11
12 **Hypotheses: this section suffer from some major issues. First, why this**
13 **paper is relevant for this Journal? I see no mention of IC, so, unless you**
14 **provide a clear explanation on its relevance for IC, I suggest you to**
15 **change the outlet. Second, the way you present you hypotheses make**
16 **them seem poorly original. How your hypotheses are distanced from**
17 **those of the antecedent authors you mention? Third, again, the**
18 **hypotheses seem untied between each other.**
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24 As we have commented above, we have added some paragraphs throughout
25 the manuscript to highlight the relevance of our study for intellectual capital’s
26 literature in general and, in particular, for JIC.
27

28 Hypotheses section has been changed almost completely in order to include
29 your suggestions. Therefore, we hope now the argumentation follow an
30 understandable line of thinking.
31

32 New references are also included:
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34 Jacobs, G. (2010), “Conflicting demands and the power of defensive routines in
35 participatory action research”, Action Research, Vol. 8 No. 4, pp. 367-386.
36

37 Overby, E., Bharadwaj, A. and Sambamurthy, V. (2006), “Enterprise agility and
38 the enabling role of information technology”, European Journal of Information
39 Systems, Vol. 15 No. 2, pp. 120-131.
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41 Schwenk, C. R. (1984), “Cognitive simplification processes in strategic
42 decision-making”, Strategic Management Journal, Vol. 5 No. 2, pp. 111-128.
43

44 Weill, P., Subramani, M. and Broadbent, M. (2002), “Building IT infrastructure
45 for strategic agility”, MIT Sloan Management Review, Vol. 44 No. 1, pp. 57-65.
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50 **Empirical section: this section seems well-written. Method an variables**
51 **sound consistent, results are almost clear.**
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55 Thank you very much for this comment.
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3 **Discussion: I suggest the author to better explain the originality of the**
4 **work. I do not see how it contributes to the field of study.**
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8 Thank you again. We have tried to show the originality of the study by justifying
9 and explaining its contribution to the state-of-the-field more strongly and in
10 greater detail. In this line, we highlight the inclusion of the following ideas:
11

12 *“This study also investigates how organizational memory can mitigate the*
13 *presence of counter-knowledge, along with exploring how these activities can,*
14 *in turn, result in the achievement of organizational agility.”*
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17 *“In order to mitigate the misuse of counter-knowledge, this study provides*
18 *evidence that organizational memory can play a part in overcoming the cost of*
19 *poor communication or miscommunication.”*
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21 *“The importance of transferring and retrieving knowledge to stimulate the*
22 *creation of intellectual capital is well-known. In this vein, and considering that*
23 *organizational agility is the result of adapting knowledge from one context to*
24 *another (Pereira et al., 2018; Weber and Tarba, 2014), it can be considered as*
25 *one of the most visible components of the intellectual capital of any organization*
26 *(Bueno et al., 2006; Lentjušenkova and Lapina, 2016).”*
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29 *“Intellectual capital is not just what people know, it is also the glue that holds*
30 *organizational members together (Bueno et al., 2006; Edvinsson and Malone,*
31 *1997; Lentjušenkova and Lapina, 2016). Counter-knowledge, whether we like it*
32 *or not, is one of the most important components (glues) of the informal system*
33 *of any organization and a means of entertainment and social integration*
34 *(Cegarra-Navarro et al., 2014). Despite counter-knowledge is not necessarily a*
35 *bad thing, when employees use unverified information to manipulate people’s*
36 *expectations in their own interest, it is likely that inaccurate things will be*
37 *accepted as authentic (Thompson, 2008).”*
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43 We have also made more explicit the contribution of the paper to the field of
44 study in the conclusion section by including the following paragraph:
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46 *“The ability of an organization to make agile some tasks maintaining a balance*
47 *between the application of learned knowledge and the dissemination of*
48 *unsubstantiated information (i.e., counter-knowledge) is a subject which has*
49 *generally been overlooked in the extant literature. Therefore, this research has*
50 *addressed an issue of significant importance for business and raised*
51 *awareness of the importance to carry out further research to avoid exposure of*
52 *workers to counter-knowledge. As we have stated before, results show that*
53 *organizational agility relies on both knowledge application and overcoming*
54 *counter-knowledge.”*
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3 **Implications and conclusions: please, explain clearly what are the**
4 **limitation of the study and what are the future research roads that are**
5 **opened by your analysis.**
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9 In the conclusion section, we have highlighted the main limitation of the study
10 and it also appears how to address it in future research:
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12 *“One of the main limitations of this study is the fact that the sample used was*
13 *from Spain. Future research could offer a more international perspective by*
14 *combining firms from different countries. In addition, data collection used the*
15 *key informant method, which means that the study reflects the opinion of one*
16 *person. Future studies should consider collecting data from multiple*
17 *respondents within each organization.”*
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22 **Additional Questions:**

23
24 **1. Originality: Does the paper contain new and significant information**
25 **adequate to justify publication?: The paper's originality is not clear**
26 **enough.**
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31 As we have commented above, we have tried to show the originality of the
32 study by justifying and explaining its contribution to the state-of-the-field more
33 strongly and in greater detail.
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37 **2. Relationship to Literature: Does the paper demonstrate an adequate**
38 **understanding of the relevant literature in the field and cite an appropriate**
39 **range of literature sources? Is any significant work ignored?: The**
40 **literature analysis is poor and it requires a major effort. Concepts are**
41 **untied and, most of all, the paper does not mention at all IC.**
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46 The new version of the paper includes several paragraphs throughout the
47 manuscript to highlight the relevance of our study for intellectual capital's
48 literature in general and, in particular, for JIC. We have also included new
49 references to justify our arguments and to reinforce the literature review. We
50 hope now the paper follows an understandable line of thinking and the different
51 concepts appears tied together.
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56 **3. Methodology: Is the paper's argument built on an appropriate base of**
57 **theory, concepts, or other ideas? Has the research or equivalent**
58 **intellectual work on which the paper is based been well designed? Are**
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3 **the methods employed appropriate?: The methodology is sounding and**
4 **grounded adequately.**
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8 Thanks for this point.
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12 **4. Results: Are results presented clearly and analysed appropriately? Do**
13 **the conclusions adequately tie together the other elements of the paper?:**
14 **Results are clear and well presented**
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18 Thank you again.
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22 **5. Implications for research, practice and/or society: Does the paper**
23 **identify clearly any implications for research, practice and/or society?**
24 **Does the paper bridge the gap between theory and practice? How can the**
25 **research be used in practice (economic and commercial impact), in**
26 **teaching, to influence public policy, in research (contributing to the body**
27 **of knowledge)? What is the impact upon society (influencing public**
28 **attitudes, affecting quality of life)? Are these implications consistent with**
29 **the findings and conclusions of the paper?: Implications are explained,**
30 **but, perhaps, this section needs further refinements.**
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36 According to your suggestions, we have also reinforced implications. In
37 particular, we have identify clearly how the findings of our research could be
38 used in practice:
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40 *“The implications for practice of the above-mentioned findings is that managers*
41 *may need to be aware of the possibility that “the knowledge” that employees*
42 *and themselves need to carry out their jobs may vary from one context to*
43 *another. In our study, we further suggest that the presence of right memories*
44 *allows organizations to respond appropriately to environmental threats and to*
45 *adjust to the changes in a business environment.”*
46
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48 *“The provision of a practical guide to shape agile organizations is another*
49 *contribution of this study. Regarding this, the results support that organizational*
50 *agility is not only the result of using validated routines and protocols (i.e.,*
51 *knowledge application), but it may also be the result of using unproven theories,*
52 *rumours, colloquial expressions or sayings (i.e., counter-knowledge), which*
53 *means that organizational memory may enable both the application of good*
54 *knowledge and the mitigation of counter-knowledge. These findings may be*
55 *helpful in order to find useful combinations and to develop low-risk counter-*
56 *knowledge and high-quality process of knowledge application.”*
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3 **6. Quality of Communication: Does the paper clearly express its case,**
4 **measured against the technical language of the field and the expected**
5 **knowledge of the journal's readership? Has attention been paid to the**
6 **clarity of expression and readability, such as sentence structure, jargon**
7 **use, acronyms, etc.: The communication is good.**
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12 Thank you very much.
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