Critical Processes of Knowledge Management and Value for the internal and external Customers.

Completed Research Paper

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Abstract

Firms are continually looking for new ways to get the best results. In this study, the focus is on the relationship between absorptive capacity (ACAP) and customer value (CV), proposing a multiple mediation model to analyze this relationship. The study’s contribution to the literature is to examine, empirically, the antecedents and determinants of this variable in greater depth. Thus, the research fills a gap in the literature through its analysis of the mediating role of knowledge stock (KS) and the knowledge application (KA). This study applies variance-based structural equation modeling via partial least squares to a sample of 151 branch office managers from the Spanish banking industry. The results show that both the direct effect and indirect effect, through the mediation of KS and KA, are significant in the relationship between ACAP and CV.

Keywords: absorptive capacity, customer value, banking industry, knowledge management

1. Introduction.
   The Spanish banking industry (SBI) is a highly knowledge-intensive sector and is therefore appropriate for identifying, analyzing and evaluating different learning processes. The increasingly intense competition within this industry is forcing banks to recognize the need to seek new ways of leveraging their organizational knowledge. In addition to the competition within the industry, the relative intangibility of their products and services prompts the need to capture and retain customers by offering them something extra and building a strong relationship.

   The current crisis in the financial services industry is very significant. Numerous banking takeovers and capitalizations are taking place, with the number of company mergers as a rescue measure multiplying and the volume of crashes increasing. Knowledge of the full extent of this crisis still does not exist, due to the unusually high
speed at which key events develop and enormous changes occur within a short time span, predominantly following the crash of Lehman Brothers in September 2008.

Furthermore, the complex competitive environment in which banking firms operate leads to an increase in customer demand for superior value (Sanchez, Iniesta & Holbrook, 2009). Therefore, more and more firms see customer value (CV) as a key factor when looking for new ways to achieve and maintain a competitive advantage (Woodruff, 1997). A firm’s external and internal organizational capabilities are vital for increasing CV. Thus, a firm should focus on improving those capabilities which view the customer as a key component, in order to maximize and absorb the value created (Martelo-Landroguez, Barroso, & Cepeda, 2011).

In the SBI, new products and processes demand new competencies or at least new combinations of competencies. These new skills and capabilities are requirements for creating new products or launching new services and are the likely results of the acquisition, assimilation, and exploitation of new knowledge. This idea is what Cohen and Levinthal (1990) refer to as absorptive capacity (ACAP). These authors state that ACAP is the result of individual skills, prior knowledge, firm-specific competencies (internal capabilities), and access to knowledge sources outside the firm—external linkages (Leal-Rodríguez, Roldán, Leal, & Ortega-Gutierrez, 2013). Thus, managers need a framework to facilitate the influence of several knowledge management (KM) aspects (e.g., ACAP, knowledge stock-KS and knowledge application-KA) on the firm’s CV. Nevertheless, a gap exists in the literature concerning this issue. No study reports an empirical test of the links between ACAP, KM processes, and their consequence on CV.

This paper focuses on the link between a firm’s ACAP and its value operating two ways: researching on the one hand, the direct effect between ACAP and CV; and on the other hand, the indirect effect considering the multiple mediating role of another two processes of KM: the KS and the KA.

2. Theoretical background and research hypotheses

2.1. The relationship between absorptive capacity and value

In this paper, a reference to value means the firm’s outcomes in relation to their stakeholders (in this case, their internal customers or employees and their external customers).

Although most of the literature refers to value creation, understanding value from the perspective of ‘the value of the stakeholders for the firm’ also receives attention from researchers (Payne, & Holt, 2001). This stream of research focuses on the value of the stakeholders for the firm. As such, the focus is not on the creation of value for the stakeholders but on the value outcome that can derive from delivering superior CV by managing knowledge.

From an analysis of Payne and Holt’s (2001) description of this value perspective, the likelihood exists that this description refers to firm value appropriation or capture. Appropriating value in the marketplace is a fundamental process to achieve firm outcomes. Value creation alone is insufficient to achieve success in the marketplace. A firm’s ability to restrict competitive forces to enable the appropriating of
some of that value that the firm creates in the form of profit is also necessary (Mizik, & Jacobson, 2003). Thus, value appropriation involves the development of a set of capabilities oriented toward the extraction of benefits which stem from value creation. In other words, this element focuses on the appropriation of market rents generated from the possession of specific differential resources or capabilities (Mocciaro, & Battista, 2005).

Although most authors focus their attention on the barriers to imitation at the level of competitors, firms must focus on the retention of value in the organization (Bowman, & Ambrosini, 2000).

In our opinion, firms that want to stay in the marketplace, in some way or another have to consider both internal and external customers. To do so, firms try to provide the marketplace with a range of products or services that give value to these stakeholders. Therefore, superior performance results from providing superior value to stakeholders and is not an end in itself (Slater, 1997). Analyzing their customers (both internal and external), firms should be able to improve their outcomes.

The key idea is to know if firms are able to capture the value which they create for their internal and external customers. Firms that fail to pay enough attention to value appropriation are unlikely to achieve competitive advantages and capture the benefits of their innovations (Mizik, & Jacobson, 2003). Mocciaro and Battista (2005) posit that a period must exist in which the firm may pursue value appropriation in order to seize the fruits of its innovations through an increase in the efficiency of its resource allocation.

As mentioned, value appropriation focuses on restricting competitive forces and extracting benefits from the marketplace (Han, Kim, & Srivastava, 1998). According to Bowman and Ambrosini (2000), idiosyncratic ways of doing things allow firms to offer more value to their stakeholders, compared to their competitors, and could help them to achieve superior benefits.

Cohen and Levinthal (1990, p. 128) initially define ACAP as “the ability of recognizing new external knowledge, assimilating and applying it to commercial ends”. Therefore, this concept refers to a key element within the organizational learning process. These authors suggest furthermore that this capability is critical for a firm which seeks the attainment of sustainable competitive advantage, business performance or innovative results, and that ACAP depends to a great extent on the level of prior related knowledge which the firm already possesses.

Although extensive literature concerning ACAP exists, this topic only arouses significant interest in the academic community in light of Zahra and George’s (2002) reconceptualization. The roots of this reconceptualization lie in the distinction between potential absorptive capacity (PACAP) and realized absorptive capacity (RACAP).

The present work focuses on Zahra and George's (2002) view, which suggests that ACAP encompasses four distinct but complementary capabilities: acquisition, assimilation, transformation, and exploitation. According to Barney (1991), the conjunction of different capabilities leads organizations to achieve superior performance, which frequently results in competitive advantage.

In accordance with this theory, PACAP and RACAP encompass different capabilities. PACAP involves the acquisition and assimilation capabilities. This
capacity makes the firm open to the acquisition and assimilation of externally generated knowledge (Lane, & Lubatkin, 1998). PACAP captures a firm’s capacity to evaluate and acquire external knowledge (mainly from market, competitors and external customers). Nevertheless, this capacity does not always lead to knowledge exploitation (an internal customer issue or view). Conversely, RACAP deals with the capabilities of transforming and exploiting. PACAP and RACAP are essentially distinct concepts, and consequently may draw on different structures, objectives, and strategies (Cepeda-Carrión, Cegarra-Navarro, & Jimenez-Jimenez, 2012).

Jansen, Van den Bosch, and Volberda (2003) develop a new model on the basis of a model Van den Bosch, Volberda, and de Boer (1999) propose and the inclusion of some of the improvements Zahra and George (2002) provide. Three different capabilities—coordinating, system and socialization capabilities—are the antecedents of ACAP in this model. On the other hand, the model of ACAP is as an antecedent of the firm’s adaptation and performance.

Similarly, several studies posit a relationship between the firm’s ACAP and performance. Fiol (1996) argues that the potential of organizations to generate and capture the benefits of their innovation outcomes depends on the previous accumulation of knowledge that they have absorbed. The emergence of KM therefore enhances the reciprocity between innovation and knowledge in the sense that innovative efforts are a result of the firm’s endeavor and investment in knowledge and knowledge workers. Similarly, outcomes from innovation processes in terms of new products and processes contribute to creating new knowledge, developing a set of capabilities oriented toward the extraction of benefits derived from value creation (Prajogo, & Ahmed, 2006). Ensuring the sharing of relevant knowledge among organizational members is crucial in order to effectively absorb and exploit knowledge (Spender, 1996). This result provides a better comprehension and mutual understanding (Garvin, 1993).

Several studies propose that the ability to effectively exploit external knowledge is a critical factor for the companies which have an interest in achieving innovation outcomes and superior benefits (Cohen, & Levinthal, 1990). A company’s ACAP performs as the enabler that permits turning knowledge into new products, services or processes to support innovation and, therefore, the firm’s ability to restrict competitive forces (Newey, & Zahra, 2009; Cepeda-Carrión et al., 2012).

According to Damanpour and Gopalakrishnan (2001), innovation is nowadays a crucial element when attempting to obtain and sustain competitive advantages. They argue that innovative firms tend to be more adaptable to changes, more flexible and are more able to exploit opportunities than their competitors. Firms that foster an innovative approach are enabled to better deal with the volatility and high dynamism which characterize their environment and are thus able to achieve and sustain long-term competitive advantages. In this vein, following the strategy of proactively embracing innovation contributes to differentiating the firm from its competitors, hence improving its business performance (Jensen, Van den Bosch, & Volberda, 2006; García-Zamora, González-Benito, & Muñoz-Gallego, 2013).

H1. Absorptive capacity has a positive relation with value.

2.2. KM and value: the multiple mediating roles of the knowledge stock, and knowledge application
A broad discussion about the relationship between KM and the value for the internal and external customer exists in the literature (Despres, & Chauvel, 1999; Gebert, Geib, Kolbe, & Brenner, 2003; Kaplan, & Norton, 2004; Rezgui, 2007). In addition, Vorakulpipat and Rezgui (2008) suggest that a description of knowledge as a source of value creation is possible.

In terms of organizational processes, Gebert et al. (2003) suggest that KM processes have inherent value-creation capabilities. In this context, the perception of KM is as a set of processes which are necessary for the company to have the possibility to use what they know to create value for its customers (Vorakulpipat, & Rezgui, 2008), and then create new knowledge from extracting benefits derived from value creation. In the case of KM, the reference is to the internal aspect of the creation of value. Companies carry out a number of internal processes with the aim of creating and capturing value from the market. Therefore, these processes are critical to organizational success (Chou, 2005; Van den Hoof, & Huysman, 2009). Without them, companies may not take advantage of the knowledge which they possess (Ipe, 2003).

Based on Cohen and Levinthal (1990), organization ACAP is not only the acquisition of information and knowledge by the organization but also the organization’s ability to exploit this acquisition. Acquisition capacities and exploitation capacities are therefore path dependent. An organization can thus exploit new knowledge only if this organization can acquire and stock this knowledge. These capacities become stronger through two complementary KM processes, namely KS and KA.

The KS or knowledge bases terms from the concept of organizational learning, where the firm is a learning system resulting in the accumulation of knowledge. Organizational members possess, acquire and accumulate knowledge through experimentation, the observation of stimuli and the interpretation of the results. Ravasi and Verona (2001) point out that a knowledge base always exists in a firm, either as individual or collective knowledge, in firm routines, databases, knowledge bases, intranet, etc. In a sense, some authors assimilate KS to the organizational memory concept, whose definition can be the persistent representation of knowledge and information stored from the firm’s history (Chou, Chang, Cheng, & Tsai, 2007).

According to the knowledge-based view (KBV), a firm’s existing knowledge base sets up its scope and ability to understand and apply new knowledge to decision-making, problem-solving or innovations (Ahuja & Katila, 2001). Knowledge breadth and depth are two distinct dimensions of the KS that reveal both the structure and content of the knowledge a firm holds. Knowledge breadth refers to the extent to which the firm’s knowledge repository contains distinct and multiple domains. Knowledge depth concerns the level of sophistication and complexity of knowledge in key fields (Zhou, & Li, 2012).

To better performance, firms must fulfill two requirements: a broad and deep knowledge base (Leal-Rodriguez et al., 2013). A firm with broad knowledge has accumulated know-how across a variety of disciplines and heterogeneous market domains through its extensive knowledge exploration (Prabhu, Chandy, & Ellis, 2005). In addition to knowledge sharing, a broad KS provides the sharing process through which the firm can connect and integrate its broad knowledge. On the other hand, a firm with a knowledge depth is likely to benefit from market and customer knowledge acquisition. This firm with a deep knowledge base accumulated through experience and
know-how about existing technologies and markets can develop core competencies and firm absorbing value.

Prior research suggests that in the search process that underlies recombinant innovations, maintaining a balance between depth and breadth is critical to successful innovation (Prajogo, & Ahmed, 2006; Katila, & Ahuja, 2002). The size and structure of an organization’s KS can determine how well this organization manages knowledge resources and creates capacities (Yayavaram, & Ahuja, 2008).

On the other hand, without KA, other processes of knowledge management make little sense because that knowledge is generated or acquired, stored, and shared in order to apply it and make the company more competitive.

The literature has little about KA. According to Gold, Malhotra, and Segars (2001), authors assume KA, as they do not make KA explicit. For example, Nonaka and Takeuchi (1995) discuss the ability of a firm to create knowledge, and they seem to assume that, once created, the effective application of knowledge takes place.

The basis of the firm’s competitive advantage does not reside in knowledge itself but in its application (Alavi, & Leidner, 2001). Following Martelo-Landrogeuz et al. (2011), if an organization wants to capitalize on its knowledge, that organization must understand how the creating, sharing, and application of knowledge occurs.

According to Grant (1996), the critical source of competitive advantage is the integration of knowledge and not knowledge itself. The processes through which companies integrate specialized knowledge are fundamental to their ability to create and sustain competitive advantage. In general, a need exists to use organizational knowledge in a company’s processes, products, and services. If a company cannot easily find the adequate knowledge in the right way, this company struggles to maintain its competitive advantage (Bhatt, 2001).

One of the more common ways of KA is to adopt the best practices of a company leader, to find the relevant knowledge and apply this knowledge (O’Dell, & Grayson, 1998). KA implies the use of knowledge which the ACAP phase generates, and the stock and transfer phase preserves and shares. Therefore, KA involves the internalization of knowledge in the company.

From the KA process, the organization can receive feedback if that knowledge is indeed needed or if the circumstances of the environment change in such a way that the ACAP process has become obsolete and needs renovating.

Thus, we expect KS and KA processes to have positive mediation effects in the ACAP-Value relationship:

**H2.** Knowledge stock positively mediates the relation between absorptive capacity and value.

**H3.** Knowledge application positively mediates the relation between absorptive capacity and value.
**H4.** Knowledge stock and knowledge application sequentially mediate the relationship between absorptive capacity and value.

### 3. Method

#### 3.1. Data collection and sample

The Spanish banking industry provides an appropriate context to empirically test the above research hypotheses. This service sector is suitable because banking activities demonstrate learning capabilities.

Two main reasons prompt the choice of the Spanish banking domain as a target for study. First, the necessity for intimacy between service providers (managers in the branch office) and customers in their commercial relationships is a critical motive for the selection of the study sample. Banking is a trust-based service, and these relationships tend to endure for long periods. Second, the banking service is an ideal platform for learning because two or more individuals often work together with different resources and complementary capacities. These are learning facilitator factors (Fenwick, 2007).

Only 15 banks meet the study’s requirements (i.e., banks serving the general public). Data collection follows a snowball sampling method with key respondent methodology, in accordance with the suggestions of an expert panel consisting of 15 eminent academics and 10 general bank managers. The unit of analysis is branch office managers from the 15 banks operating in Spain in 2013. Surveying took place over a period of two months, from September 2013 to November 2013. In total, 307 branch office managers receive telephone and mailing invitations to participate in the study, a process that yields a total of 153 questionnaires. Two of these questionnaires are unsatisfactory and therefore do not appear in the final sample. Analysis therefore relies on the data from 151 valid questionnaires (49.18% response rate).

#### 3.2. Measures

The foundations of the survey design are in the theoretical review in Section 2. This work uses and adapts scales from previous studies in which the items and responses appear on a seven-point Likert scale ranging from 1: I completely disagree to 7: I completely agree. In order to assess ACAP, the current work adapts the scale (eight items to measure PACAP and seven items to measure RACAP) from the study of Jansen, Van Den Bosch, and Volberda (2005). Building on the previous works of Chou et al. (2007) four items to measure organizational memory make up the scale for KS. For the KA variable this work relies on the ten items scale of Gold et al. (2001). Finally, for the value variable, this work adapts a scale which measures effectiveness. The scale to measure value consists of twelve reflective items adapted from Quinn and Rohrbaugh (1983). Research shows that perceived measures of effectiveness can be a reasonable substitute for objective measures of performance and have a significant correlation with them (e.g., Geringer, & Hebert, 1989; Venkatraman, & Ramanujam, 1987).

#### 3.3. Data analysis
In order to test the research model and hypotheses, this work relies on the use of the partial least squares (PLS) technique, a variance-based structural equation modeling (SEM) method. PLS is an appropriate technique for use in this study due to the following reasons (Roldán, & Sánchez-Franco, 2012): (1) the sample (n = 151) is small; (2) the focus of the study is the prediction of the dependent variables; (3) the research model is considerably complex according to the type of relationships in the hypotheses; and (4) this study uses latent variables' scores in the following analysis of predictive relevance. This study uses SmartPLS 3.0 software (Ringle, Christian, Wende, Sven, & Becker, 2014) for the PLS analysis.

4. Results

Two phases comprise the analysis and interpretation in a PLS model: (1) the assessment of the reliability and validity of the measurement model, and (2) the evaluation of the structural model.

4.1. Measurement model

The results show that the measurement model meets all common requirements. First, individual items are reliable because all standardized loadings are greater than 0.7 (Table 1). Second, since all composite reliabilities and Cronbach’s alphas are greater than 0.7 (Table 2), the model satisfies the prerequisite of construct reliability. In addition, the scores for average variance extracted (AVE) surpass the threshold of 0.5 (Table 2). Consequently, these latent variables achieve convergent validity.

Finally, all variables attain discriminant validity. Confirmation of this validity comes from both the comparison of the square root of AVE versus correlations (Table 2), and the cross-loadings analysis (Table 1) (Roldán, & Sánchez-Franco, 2012).

Table 1: Loadings and cross-loadings for the measurement model

<table>
<thead>
<tr>
<th></th>
<th>ACAP</th>
<th>Value</th>
<th>KA</th>
<th>KS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACAP</td>
<td>0.956</td>
<td>0.676</td>
<td>0.759</td>
<td>0.589</td>
</tr>
<tr>
<td>RACAP</td>
<td>0.960</td>
<td>0.728</td>
<td>0.780</td>
<td>0.610</td>
</tr>
<tr>
<td>VAL1</td>
<td>0.621</td>
<td>0.817</td>
<td>0.598</td>
<td>0.425</td>
</tr>
<tr>
<td>VAL2</td>
<td>0.647</td>
<td>0.868</td>
<td>0.646</td>
<td>0.479</td>
</tr>
<tr>
<td>VAL3</td>
<td>0.628</td>
<td>0.835</td>
<td>0.576</td>
<td>0.403</td>
</tr>
<tr>
<td>VAL4</td>
<td>0.588</td>
<td>0.800</td>
<td>0.587</td>
<td>0.373</td>
</tr>
<tr>
<td>VAL5</td>
<td>0.646</td>
<td>0.874</td>
<td>0.666</td>
<td>0.502</td>
</tr>
<tr>
<td>VAL6</td>
<td>0.598</td>
<td>0.861</td>
<td>0.600</td>
<td>0.379</td>
</tr>
<tr>
<td>VAL7</td>
<td>0.579</td>
<td>0.835</td>
<td>0.612</td>
<td>0.419</td>
</tr>
<tr>
<td>VAL8</td>
<td>0.530</td>
<td>0.801</td>
<td>0.583</td>
<td>0.377</td>
</tr>
<tr>
<td>VAL9</td>
<td>0.556</td>
<td>0.809</td>
<td>0.613</td>
<td>0.468</td>
</tr>
<tr>
<td>VAL10</td>
<td>0.652</td>
<td>0.840</td>
<td>0.665</td>
<td>0.546</td>
</tr>
<tr>
<td>VAL11</td>
<td>0.541</td>
<td>0.710</td>
<td>0.576</td>
<td>0.461</td>
</tr>
<tr>
<td>VAL12</td>
<td>0.653</td>
<td>0.840</td>
<td>0.625</td>
<td>0.511</td>
</tr>
<tr>
<td>KA1</td>
<td>0.648</td>
<td>0.677</td>
<td>0.810</td>
<td>0.584</td>
</tr>
<tr>
<td>KA2</td>
<td>0.717</td>
<td>0.657</td>
<td>0.913</td>
<td>0.633</td>
</tr>
<tr>
<td>KA3</td>
<td>0.764</td>
<td>0.726</td>
<td>0.934</td>
<td>0.613</td>
</tr>
<tr>
<td>KA4</td>
<td>0.656</td>
<td>0.635</td>
<td>0.863</td>
<td>0.534</td>
</tr>
<tr>
<td>KA5</td>
<td>0.668</td>
<td>0.639</td>
<td>0.879</td>
<td>0.544</td>
</tr>
</tbody>
</table>
4.2. Structural model

As Henseler, Ringle, and Sinkovics (2009) comment, the use of bootstrapping (5000 resamples) produces standard errors and t-statistics to assess the statistical significance of the path coefficients. Concurrently, calculation of the bootstrapping confidence intervals of standardized regression coefficients forms part of the analysis. All the direct effects in Figure 1 were significant, with the exception of $b_1$ (KS on value). The percentile bootstraps at a 95% confidence interval and bias corrected confidence interval also have this outcome (Table 3). These results support H1. In addition, the results confirm that the structural model has satisfactory predictive relevance for the value variable ($Q^2 = 0.402$). Tests on the mediation hypotheses (H2, H3 and H4) use an application of the analytical approach that Hayes, Preacher, and Myers (2011) describe.

Table 3: Construct Effects on endogenous variables

<table>
<thead>
<tr>
<th>Effects on endogenous variables</th>
<th>Direct effect</th>
<th>t-value (bootstrap)</th>
<th>Confidence intervals (percentile 95%)</th>
<th>Confidence intervals (bias corrected)</th>
<th>Explained variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACAP -&gt; Value (c')</td>
<td>0.390***</td>
<td>3.955</td>
<td>(0.2186:0.5301) sig</td>
<td>(0.2188:0.5304) sig</td>
<td>30.55%</td>
</tr>
<tr>
<td>ACAP -&gt; KA (a2)</td>
<td>0.635***</td>
<td>10.725</td>
<td>(0.5336:0.7261) sig</td>
<td>(0.5324:0.7245) sig</td>
<td>51.00%</td>
</tr>
<tr>
<td>ACAP -&gt; KS (a1)</td>
<td>0.629***</td>
<td>12.308</td>
<td>(0.5454:0.7114) sig</td>
<td>(0.5396:0.7058) sig</td>
<td>39.20%</td>
</tr>
<tr>
<td>KA -&gt; Value (b2)</td>
<td>0.415***</td>
<td>3.925</td>
<td>(0.2445:0.6007) sig</td>
<td>(0.2371:0.5930) sig</td>
<td>28.85%</td>
</tr>
<tr>
<td>KS -&gt; Value (b1)</td>
<td>0.026ns</td>
<td>0.436</td>
<td>(-0.067:0.1175) nsig</td>
<td>(-0.0703:0.1153) nsig</td>
<td>1.52%</td>
</tr>
<tr>
<td>KS -&gt; KA (a3)</td>
<td>0.263***</td>
<td>3.983</td>
<td>(0.1581:0.3781) sig</td>
<td>(0.1529:0.3710) sig</td>
<td>17.70%</td>
</tr>
</tbody>
</table>

**p<0.001  *p<0.01  * p<0.05  nsig: not significant (based on t(4999), one-tailed test). sig: significant direct effect
Value: $Q^2$: 0.402

Figure 1a shows the total effect (c) of ACAP on value. Figure 1b indicates the total effect of ACAP on value as the sum of the direct (c') and indirect effects ($a_1b_1 + a_2b_2 + a_1a_3b_2$). The estimation of the latter uses the product of the path coefficients for each of the paths in the mediational chain.

**Figure 1:** Structural model

a. Model with total effect

![Diagram](image1)

b. Model with a three-path mediated effect

![Diagram](image2)

*H1= ACAP ------ Value (c')
H2= ACAP ------ KS------- Value {a,b1}
H3= ACAP ------ KA------ Value {a,b2}
H4= ACAP ------ KS------- KA------ Value {a, a3b2}*

***p<0.001  **p<0.01  *p<0.05  ns: not significant (based on t(4999), one-tailed test)

The use of bootstrapping allows for the testing of the mediation hypotheses (Preacher, & Hayes, 2008). This study's 5000 resamples generate 95% confidence intervals (percentile) and bias corrected confidence intervals for the mediators.
As Figure 1a and Table 4 show, ACAP has a significant total effect on value ($c = 0.739; t = 16.462$). When adding the mediators (Figure 1b), ACAP decreases its influence but maintains a significant direct effect on value ($H1: c' = 0.390; t = 3.955$). Therefore, this result supports $H1$. Our results also show a partial mediation between ACAP and value, as the indirect effects of $H3$ and $H4$ are significant. However, they fail to support $H2$ (Table 4).

<table>
<thead>
<tr>
<th>Table 4: Summary of mediating effect tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
</tr>
<tr>
<td>Total effect of ACAP on VAL ($c$)</td>
</tr>
<tr>
<td>Direct effect of ACAP on VAL $H1(c')$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indirect effects of ACAP on VAL</th>
<th>Point estimate</th>
<th>Percentile 95% confidence interval</th>
<th>Percentile 95% confidence interval bias corrected</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H2=a_1b_1$</td>
<td>0.014</td>
<td>(-0.0365:0.0835)ns</td>
<td>(-0.0379:0.0813)ns</td>
</tr>
<tr>
<td>$H3=a_2b_2$</td>
<td>0.265</td>
<td>(0.1040:0.4361)sig</td>
<td>(0.1262:0.4296)sig</td>
</tr>
<tr>
<td>$H4=a_3a_1b_2$</td>
<td>0.068</td>
<td>(0.0210:0.1615)sig</td>
<td>(0.0195:0.1552)sig</td>
</tr>
<tr>
<td>Total</td>
<td>0.347</td>
<td>(0.1150:0.6813)sig</td>
<td>(0.1078:0.6662)sig</td>
</tr>
</tbody>
</table>

***$p<0.001$ (based on $t(4999)$, one-tailed test).
sig: significant effect
ns: not significant

5. Discussion and conclusions

Through an empirical study of 151 branch offices in the Spanish banking industry, this study examines the relationship between ACAP and value for the internal and external customer. Specifically, the analysis is of the relationship between ACAP and value with the mediating effects of KS, KA and the sequential effect of the KS and KA.

The study’s first contribution is to go more deeply into the relationships between some KM processes and value for the internal and external customer, but from the perspective of the value outcome which can derive from delivering superior customer value by managing knowledge, i.e., considering the value as appropriation or value captured by companies. The approach herein is to place ACAP at the beginning of the process, as a main antecedent of CV, while KS and KA play mediating roles between ACAP and CV. The results show that KA – to a greater extent – and KS – to a lesser extent – partially mediate the effect of the knowledge absorption capacities on value.

Banks traditionally center their efforts on improvements to ACAP levels in order to achieve customer value. The results of the model with only the total effect (Figure 1a) indicate that the greater the ACAP level, the greater the CV generated to these firms ($R^2= 0.546$). The ACAP, by itself, gives rise to an increase of the CV, as the study shows in the value of $c'=0.390$, which is positive and significant. This result supports $H1$, and corroborates the idea that ACAP continues to be a fundamental target for financial firms.
As a second contribution, the work finds a way for managers to achieve better outcomes for banks through the capture and creation of CV from the joint development of the absorption systems, storage and application of knowledge. The structural model show that the positive impact that ACAP has in the generation of KS does not lead to a significant effect in the increase of CV (H2=ab1= 0.014 ns). However, to the extent that KS causes greater KA a multiple mediation effect takes place through these two variables -KS and KA (H4 = a1b2 = 0.068). Finally, the most important indirect effect detected is that which occurs via KA. Thus, when ACAP gives rise to KA, this KA generates a significant increase in CV (H3 = a2b2 = 0.265). In summary, the fact that a storing of the absorbed knowledge occurs and this knowledge increases the firm’s knowledge base is not, by itself, a value increase (Alavi,&Leidner, 2001; Cohen,&Levintal, 1990).

This study has some limitations. First, results offer only a snapshot of current processes insteadof measures of the same process over time. Second, although drawing on relevant, useable scales from the literature guarantees that the constructs’ definition is as precise as possible, the constructs can credibly act only as proxies for an underlying latent phenomenon which is itself only partially measurable. Third, the model in this study is general and fails to capture the possible moderating effects of environmental turbulence and uncertainty. Prior research shows that the effect of cognitive factors on individual, group, and organizational performance can vary substantially with environmental conditions. Fourth, the cross-sectional (rather than longitudinal) design of the study might misrepresent variables that refer to lengthy processes, the effects of which only become apparent over long periods. Finally, this study takes place in a specific geographical context (Spain) and economic sector (the banking industry). For this reason, researchers must be careful about generalizing these results and conclusions to other scenarios or different contexts.

References


