

Document downloaded from:

<http://hdl.handle.net/10251/188182>

This paper must be cited as:

Ponce-Espinosa, G.; Peiró Signes, A.; Segarra-Oña, M. (2022). Absorptive Capacity And In-company Routines: Modelling Knowledge Creation In The Tourism Industry. *Knowledge Management Research & Practice*. 20(5):732-742.  
<https://doi.org/10.1080/14778238.2020.1796544>



The final publication is available at

<https://doi.org/10.1080/14778238.2020.1796544>

Copyright Taylor & Francis

Additional Information

# **Absorptive Capacity And In-company Routines: Modelling Knowledge Creation In The Tourism Industry**

## **Absorptive Capacity And In-company Routines: Modelling Knowledge Creation In The Tourism Industry**

Ponce-Espinosa, Glenda<sup>a,b</sup>, Peiro-Signes<sup>a</sup>, Ángel, Segarra-Oña, Marival<sup>a\*</sup>

[geponce@utpl.edu.ec](mailto:geponce@utpl.edu.ec), [anpeisig@omp.upv.es](mailto:anpeisig@omp.upv.es), [maseo@omp.upv.es](mailto:maseo@omp.upv.es)

<sup>a</sup>Universitat Politècnica de Valencia, Management Department (7D), Camino de Vera, s/n, 46022, Valencia, Spain.

<sup>b</sup>Universidad Técnica Particular de Loja, Loja, Ecuador.

\*corresponding author

### **Abstract**

Absorptive capacity creates valuable competitive advantages. However, the tourism sector lacks an empirical analysis of how absorptive capacity is generated and how different organisational capabilities impact on its creation. The objective of this study is to identify which are the organisational capacities that generate absorptive capacity in this sector. To do so, we develop an empirical study using the partial least square (PLS) based on 86 Ecuadorian companies, which represents a new and potent tourism destination. Our results reveal that existing knowledge consolidation, the centralisation of decision-making, knowledge formalisation, connectedness, and knowledge-management infrastructures directly and positively influence the absorptive capacity. Direct managerial implications arise, which highlight what mechanisms help create and foster absorptive capacity within companies at the touristic industry.

**Keywords:** *absorptive capacity; innovation; tourism industry; knowledge creation; organisational capabilities; innovation capability*

### **1. Introduction**

A firm's ability to innovate resides in its knowledge (Teece, 2014). This knowledge can be found both inside and outside of firms (Bosch, Volberda, & Boer, 1999). Absorptive capacity, ACAP, is defined as the capacity of an organisation to recognise the information of the environment, assimilate it, and transform it (Cohen & Levinthal, 1990). Consequently, ACAP is growing in importance because of its role in assimilating knowledge.

Determining the elements that support ACAP has been of interest to researchers for a long time. In particular, ACAP is recognised as priority knowledge for an organisation (Cohen & Levinthal, 1990) and it is necessary to enhance not only the internal elements of the organisation (Bosch et al., 1999; Hart, Gilstrap, & Bolino, 2016; Jansen, Van Den Bosch, & Volberda, 2005), but also the interorganisational aspects (Lane & Lubatkin, 1998; Malhotra, Gosain, & Sawy, 2005).

ACAP has also been recognised as a dynamic capacity within organisations (Zahra & George, 2002). In a recent study, Pongsathornwiwat et al. (2019) empirically demonstrated how collaborative routines can enhance dynamic innovation capabilities and therefore, improve performance in tourism firms. In addition, Borodako et al. (2014) found that the competitiveness and innovation of tourism companies could be boosted by knowledge and expertise. Dynamic capacities imply the ability to integrate, build, and reconfigure internal and external competences in changing environments (Teece, Pisano, & Shuen, 1997). Our interest in studying dynamic capacities (in this particular case, the ACAP) resides in the superior performance that they provide to organisations.

Zollo and Winter (1999) propose the following three mechanisms to create and evolve dynamic capacities: the organisational routines, the articulation, and the codification of knowledge. Ponce-Espinosa et al. (2020) deeply reviewed the existing knowledge regarding ACAP to identify that the organisational capabilities (OCs) that directly impact on the generation of ACAP within the organisations are; 1) knowledge structure, 2) centralisation, 3) connectivity, 4) consolidation of knowledge and 5) formalisation.

The tourism sector develops unique, distinctive, and differentiated products. This implies the intensive use of knowledge (Knight & Cavusgil, 2004). We consider ACAP as an opportunity to achieve this aim and we test whether OCs impact on ACAP generation. We empirically test the

proposed statements in the tourism sector of Ecuador, which combines natural-cultural heritage with high-quality service (MinTur, 2018). Consequently, Ecuador has been described as a potent new destination.

In the following section, an extensive analysis of the existing literature regarding ACAP and OCs is carried out. We then used a questionnaire with a Likert scale and applied a PLS structural equation model on a sample of 86 companies belonging to the tourism industry. Finally, we modelled how dynamic capacities are generated, specifically ACAP, which we measured empirically. Our results are then explained and opportunities for future research are highlighted.

## **2. Conceptual framework**

### **2.1 Absorptive capacity**

The seminal definition proposed by Cohen and Levinthal (1990) identifies ACAP as the ability of an organisation to recognise the value of new and external information, assimilate it, and apply it for commercial purposes. There have since been several contributions that enrich the construct. For example, Lane and Lubatkin (1998) define ACAP as the capacity of one organisation to learn from another based on characteristics such as; the type of new knowledge, the similarity between the two organisations regarding the structure and practices of compensation, and the familiarity of the organisation that learns with the organisation that teaches. In every case, ACAP refers to the ability of the organisation. Recently, Aribi et al. (2016) found that, far behind from being a linear process, ACAP is a process that follows several feedback loops.

The ACAP construct has received important support from Zahra and George (2002), who reconceptualised it by introducing routines and organisational processes through which the organisations acquire, assimilate, transform, and exploit knowledge. They also state that ACAP is a dynamic capacity that is related to the creation and use of knowledge, which allows the organisation to obtain and maintain a competitive advantage. According to Zahra and George (2002), ACAP has two dimensions: first, the *potential absorptive capacity*, which is formed by

acquisition and assimilation; and second, the *realised absorptive capacity*, which implies the exploitation and transformation of knowledge.

The studies developed by Cohen and Levinthal (1990) and Zahra and George (2002) are considered seminal in the field of ACAP and have been the source of new research. For example, Todorova and Durisin (2007) combined the two contributions to propose a new definition of ACAP as the ability to recognise the value of new knowledge, acquire or transform it, and then apply it. For these authors, organisations transform their knowledge structures when this cannot be assimilated. Therefore, the transformation is an alternative to assimilation (Todorova & Durisin, 2007).

ACAP has also been studied from different approaches, such as the antecedents or determinants of ACAP (Bosch et al., 1999; Cohen & Levinthal, 1990; Jansen et al., 2005, 2006), its moderating role (Liu et al., 2013; Patel et al., 2012; Ritala & Hurmelinna-Laukkanen, 2013), or the effects that ACAP generates in the organisation (García-Morales et al., 2014; Gebauer et al., 2012). Meanwhile, other authors have studied its importance related to prior knowledge (Cohen & Levinthal, 1990), learning between organisations and the similarity between them (Lane & Lubatkin, 1998), the organisational structure and the combinative capacities (Bosch et al., 1999), organisational mechanisms associated with coordination capacities (Jansen et al., 2005), the source of knowledge and prior knowledge (Todorova & Durisin, 2007), alliances in research and development between organisations (Lin et al., 2012) and project management practices (González et al., 2015).

So far, no study has identified ACAP's background. However, Zahra and George (2002) suggest that ACAP is a dynamic capacity and they propose the following four determinants:

- 1) Acquisition: which refers to the capacity of the organisation to identify and acquire critical knowledge for its operations and which is generated externally.

- 2) Assimilation: which refers to the routines and processes that analyse, process, interpret, and understand the acquired information.
- 3) Transformation: which refers to the redefinition of routines that facilitate the combination of existing knowledge with that which has been acquired and assimilated.
- 4) Exploitation: which refers to the redefinition, expansion and use of existing competencies to create new ones, due to the incorporation of knowledge that has been transformed.

These capacities play a complementary role in the organisation; they have different approaches and they coincide in being formed by organisational routines (Hart et al., 2016) and innovations (Zou et al., 2018).

## **2.2 Organisational capabilities (OCs)**

OCs have been defined as the socially complex routines that determine the efficiency with which organisations transform inputs into products (Collis, 1994). Zander and Kogut (1995) define OCs by their organisational principles and it is these principles that determine what an organisation can do. In contrast, Grant (1996a) proposed that OCs are the result of the integration of knowledge. So, it is understood that the OCs cannot be acquired but must be built (Barreto & Patient, 2013). Organisational capacities have been studied from the resource-based vision, which refers to the capacity of an organisation to use resources to achieve a proposed purpose (Amit & Schoemaker, 1993), and the vision based on knowledge, which refers to the ability of the organisation to integrate specialised knowledge to perform a productive task (Grant, 1996b).

Considering the large number of definitions attributed to OCs, Collis (1994) classified them into three categories: (1) those that reflect the ability to develop the basic activities of an organisation; (2) those focused on the dynamic improvement of an organisation's activities; and (3) those of a strategic perspective, which allow organisations to recognise the intrinsic value of other resources or to develop novel strategies against competitors (Collis, 1994).

Regarding their typology, OCs are considered dynamic because of their ability to integrate, build, and reconfigure internal and external competences to address changing environments (Teece et al., 1997). These capacities are a learned and stable pattern of collective activity through which

the organisation systematically generates and modifies its operational routines in search of greater effectiveness (Zollo & Winter, 2002). These capabilities are related to the creation of value of the company through its impact on the company's resource base (Ambrosini & Bowman, 2009).

Operational capabilities are understood as the collection of high-level routines to perform significant tasks for the organisation (Winter, 2000). According to Helfat and Winter (2011), operational capabilities are considered ordinary because they maintain the status quo of the organisation, involve the performance of administrative, operational, and governance functions in the organisation and are composed of qualified personnel. In the same line and following Teece (2014), operational capabilities include facilities and equipment, processes and routines, and the administrative coordination necessary for the operation of the organisation.

For the purposes of this study, we propose as a first objective to identify the elements of the mechanisms that create a dynamic capacity, in this case the ACAP.

### **2.3 Organisational capabilities (OCs) that generate Absorptive capacity (ACAP)**

*Organisational routines:* According to Zollo and Winter (1999), dynamic capacities are created and evolve from mechanisms such as organisational routines, articulation, and codification of knowledge. They propose that these routines are stable behaviour patterns that characterise the reactions of the organisation to varied stimuli, internal or external.

Routines, from the point of view of Pentland and Feldman (2005) depend on the connections (the union of several participants and their actions), to form a pattern that people recognise as routine. In organisations, it is the structures that allow individual and collective action and establish the context for their interaction, allowing the processing of information, the development and exchange of knowledge, coordination, integration, and collective action (Felin et al., 2012).

Gold et al. (2001) point out that the structure related to knowledge must be flexible to stimulate vital interactions, and to promote sharing and collaboration across the boundaries of the organisation. Workers should be encouraged to generate new knowledge and to share it, even

outside their work unit. Its contribution is not focused on the type of organisational structure but on flexibility versus knowledge.

Workers should also feel encouraged to create and apply new knowledge when they experience freedom of action (i.e. autonomy), which increases the possibilities of finding valuable information and encourages the members of the organisation to create new knowledge (Noblet et al., 2011). In organisations, this level of autonomy is represented by the degree of centralisation under the authority (Pertusa-Ortega et al., 2010).

Centralisation, which is also called a hierarchy of authority, represents the degree to which decision making corresponds to authority, in addition to how power is distributed among different hierarchical positions and if people can make their own decisions regarding work (Hage & Aiken, 1967).

In this context, we split organisational routine mechanism in two OCs: a) *structure of knowledge* and b) *centralisation of decision making*.

***Knowledge articulation***: Implicit knowledge is articulated through collective discussions, sharing, and comparing experiences. This collective learning occurs when individuals express their opinions and positively confront the points of view of others (Zollo & Winter, 1999).

Knowledge and new information require communication, discussion, and exchange with partners (Liu & Gan, 2018). Interaction and exchange of information is facilitated by formal and informal direct contact between employees, as well as by the actual use of information. This capacity is called connectivity (Jaworski & Kohli, 1993).

Zollo and Winter (1999) point out that not all knowledge with articulation potential achieves this transformation. In the articulation efforts that are carried out, there is a better understanding of the new and changing action-performance links and this leads to adjustments to the existing routines/processes or the proposal of new ones. Changes in the structure or processes that the organisation carries out to generate new ideas or methods are called knowledge consolidation (Cepeda-Carrion et al., 2012).



Therefore, we consider connectivity and consolidation as the OCs that determine the mechanism of articulation of knowledge.

**Coding of knowledge:** This process involves a higher level of cognitive effort and occurs when individuals encode their understanding of the performance of routines in written tools. These tools involve an effort to understand the causal links between the decisions that must be made and the expected results (Zollo & Winter, 1999).

Coding is an important element in the development of capacities and it is proposed that formalisation is related to the codification of knowledge (Zollo & Winter, 1999). Consequently, this mechanism will be measured through formalisation because it represents the degree to which rules, procedures, instructions, and communications are formalised or written (Khandwalla, 1977). After identifying the OCs that generate a dynamic capacity, the following research question arises:

***RQ Which Organisational Capabilities (OCs) generate Absorptive Capacity (ACAP)?***

Figure 1: RQ representation. OCs that generate ACAP.

### **3. Hypothesis statement**

ACAP is a multidimensional construct (Cohen & Levinthal, 1990) that is defined as a dynamic capability related to the knowledge creation and utilisation that increases the ability to gain and sustain a competitive advantage (Zahra & George, 2002).

Potential ACAP refers to acquiring external knowledge (acquisition) or being able to analyse, process, interpret, and understand the information from external sources (assimilation). Realised ACAP refers to developing and refining routines with the existing and acquired knowledge (transformation), and to improve or develop competences incorporating acquired and transformed knowledge (exploitation).

Interactions between organisation members are vital to knowledge management (Grant, 1996a, Grant 1996b; O'Dell & Grayson, 1998). Organisational structure and its ability to adapt to the changing environment (March, 1991; Miles et al., 1997) provides a framework to facilitate or hamper these interactions.

Firms use formal and informal structures to link and integrate different parts of the organisation (Tushman & O'Reilly, 1996; Van de Ven, 1986). Formal and informal structures might affect the ACAP of the organisations because they affect the way in which resources and competences are related and work within an organisation and facilitate interactions for the creation and flow of knowledge and information.

A firm's hierarchical structure enables the coordination of organisations activities. The two main elements of this structure are centralisation and formalisation (e.g., Lin & Germain, 2003; Miller & Dröge, 1986; Zmud, 1982). Centralisation of decision making indicates where authority and decision making takes place (Damanpour, 1991). A high concentration diminishes the communication channels, and therefore diminishes the quality and quantity of ideas and knowledge flowing through the organisation (Nord & Tucker, 1987; Sheremata, 2000), as well as the likelihood of seeking innovative or new solutions (Damanpour, 1991). However, it increases information-processing efficiency and facilitates exploitative innovation.

Informal social relations are personal linkages between people in the organisation besides the formal structure (Tsai, 2002). Connectedness helps to combine and developing new knowledge (McFadyen & Cannella, 2004). Thus, it will help to understand, refine, and improve existing knowledge, and transform and exploit new knowledge, thereby increasing the ACAP of the company.

The consolidation of emergent understandings refers to changes in the organisation's structure or processes that must be made for members to consistently enact new ideas or methods (Cegarra-

Navarro & Sánchez-Polo, 2008). New knowledge may be incorporated and consolidated through the interaction of group members (Schein, 1993) and managers, who expand the bounds and acting as gatekeepers (Carlile, 2002).

Formalisation is the degree to which rules, procedures, instructions, and communications are formalised or written down (Khandwalla, 1977). Formalisation constrains exploration and focuses on responding to the external environment variance through routines. Through formalisation, the organisation codes improves practices to make them more efficient to exploit, easier to apply, and to accelerate their implementation (Zander & Kogut, 1995, Martinez-Costa et al., 2019). Then, formalisation should enhance ACAP exploitation through the improvement and incorporation of acquired knowledge. Consequently, we state our hypothesis, (H1), which says that:

***H1.- Organisational Capabilities (OCs) positively affect the generation of absorptive capacity (ACAP).***

#### **4.Method**

In this paper, we apply the theoretical framework to the tourism industry in Ecuador. We focus on tourism companies because of the potential impact to the country's economy and the close link between the customer, the environment, and the development of the local economy. An additional reason is due to the importance that innovation and knowledge creation and assimilation may have on its competitiveness.

The study includes companies NACE codes, Accommodation and food service activities and classified in "I" and "R" Arts, entertainment and recreation in the 6 more important provinces in Ecuador. This study was restricted to companies with more than 10 employees These provinces account for 90% of the entire population of companies. The total number of active companies with more than 10 employees in the aforementioned industries in Ecuador according to the *Superintendencia de compañías del Ecuador* was

597 companies (4,45% of the total number of companies). 532 of these companies were in the six provinces of the study (89,1%). The sample was selected during January 2017, and considers active companies by December 2016. The data was retrieved from March to September 2018. The resulting sample was comprised of 86 companies, which were distributed in the six selected provinces. The sample distribution among the 6 provinces, and the average number of employees are indicated in tables 1 and 2.

[Insert Table 1 here]

[Insert table 2 here]

The measurement scales used in this study were Likert 1–7, in which the range of responses was 1 = strongly disagree, to 7 = strongly agree. The questionnaire includes variables already validated in previous studies. The capacities of acquisition, assimilation, transformation, and exploitation were adapted from the contributions of Flatten et al. (2011) and Patel et al. (2015). The variables corresponding to the structure in relation to knowledge were adapted from different sources: *centralisation of decision making* was adapted from Hage and Aiken (1967), and *connectivity* was adapted from Jaworski and Kohli (1993). These variables have already been applied by (for example): Deshpande and Zaltman (1982), who considered *formalisation*; Jansen et al. (2006), who considered centralisation of decision making, connectivity and formalisation as variables; and also Cegarra-Navarro and Sánchez-Polo (2008), who studied *consolidation of knowledge* as a variable.

### **Statistical method**

We analysed the data using partial least squares-path modelling (PLS-PM). For this study, PLS methodology is recommended over covariance based structural equation modelling because it is effective with small samples (Chin, 1998; Chin & Newsted, 1999; Reinartz et al., 2009). We also used Smart-PLS software (Ringle et al., 2015).

Several approaches can be used to estimate hierarchical latent variable models in PLS-SEM (Becker et al., 2012). In this particular case, we preferred the two-step approach because the model involves a formative hierarchical construct in an endogenous position (Ringle et al., 2012). The path models were revealed as nonsignificant because the lower-order constructs will explain all of the variance of the higher-order construct and, therefore, other antecedent constructs cannot explain any additional variance of the higher-order construct. Additionally, we are more interested in the higher-level estimates, and this approach leads to a more parsimonious model and does not lead to biased results (Becker et al., 2012).

In the two-step approach, we estimated the construct scores of the first-order latent variables in a first-step model without the second-order construct present. We then used the resulting scores as formative indicators in the second-step model for the second-order constructs (Wetzels et al., 2007). Finally, the first-order constructs became the observed indicators of the second-order constructs.

### **Measurement model**

Because all first-order constructs were reflectively measured, we evaluated the measurement model of the first-order constructs with regard to their reliability and validity (see Tables 3 and 4). All of the items have item loadings higher or close to the suggested threshold of 0.7 (Churchill, 1979), which confirms item reliability. The first-order constructs demonstrated satisfactory values for convergent validity and internal consistency, average variance extracted (AVE) above 0.50 (Fornell & Larcker, 1981), and composite reliability (CR) above 0.70 (Nunnally & Bernstein, 1994). To assess

discriminant validity, we used the Fornell and Larcker (1981) criterion in which the AVE of each construct should be higher than the squared correlations with all of the other latent variables (see Table 4).

First-order constructs are multiple distinct dimensions of the two second-order constructs. These dimensions should be modelled as formative (Lee & Cadogan, 2013), which should be evaluated in terms of their contribution to the (second-order) construct. In other words, the indicator has a significant impact on the formative construct and it does not exhibit multicollinearity. We evaluated the significance of the estimated indicator weights using a bootstrapping procedure (Chin, 1998) and assessed the degree of multicollinearity among the formative indicators (Diamantopoulos & Winklhofer, 2001) by calculating the variance inflation factor (VIF). Although not all of the weights were statistically significant, we decided to keep them in the model following the recommendations of Hair et al. (2014). Meanwhile, VIFs were lower than 3.3, indicating the absence of multicollinearity problems.

Table 3. Quality criteria of the first-order and second-order constructs

\*\*\* Significant at  $p < .001$ , \*\* significant at  $p < .01$ , \* significant at  $p < .05$ . and n.s. denotes not significant

Table 4. Discriminant validity assessment

Note: values represent the correlations among constructs except for that diagonal elements (bold) that are the square root of the AVE.

## **Structural model**

Table 5 illustrates the structural model assessment. We estimated the path coefficient between the ACAP and the OCs and its significance using a bootstrapping procedure with 5,000 subsamples (Henseler et al., 2009). The variance and predictive relevance was explained through the  $R^2$  value (Chin, 1998) and  $Q^2$  test (Geisser, 1975; Stone, 1974), respectively.

Figure 2. Structural Model (second-step process)

Table 5. Structural model assessment

\*\*\* Significant at  $p < .001$ . BCa Confidence Interval denotes Bias-corrected and accelerated 95% Confidence Interval

The path coefficient shows that OCs have a positive and significant effect on ACAP ( $\beta = 0.897$ ,  $p < 0.001$ ), which confirms our hypothesis. This finding corroborates the idea that working on the OCs of these companies will increase the ACAP of the organisation. Moreover, the OCs were able to explain a substantial (Chin, 1998) percentage of the variance on the ACAP (80.5%). Using a blindfolding procedure, we checked that  $Q^2$  value was above zero, providing evidence that the model has predictive relevance.

An interesting insight about this model is the evaluation of the dimension weights. Weights provide information about how each dimension contributes to the OCs and ACAP constructs. The findings in Table 3 illustrate that all the OCs contributed significantly. Formalisation ( $w = 0.329$ ,  $p < 0.01$ ), consolidation of emergent understandings ( $w = 0.320$ ,  $p < 0.001$ ) and knowledge management infrastructure ( $w = 0.320$ ,

$p < 0.05$ ) were revealed as the most important. Meanwhile, transformation ( $w = 0.451$ ,  $p < 0.01$ ) and acquisition ( $w = 0.399$ ,  $p < 0.01$ ) are the most important dimensions contributing to the ACAP, while the assimilation ( $w = 0.212$ ,  $p < 0.05$ ) and exploitation ( $w = 0.196$ ,  $p < 0.01$ ) dimensions were irrelevant to ACAP. Thus, weights ranked the different dimensions according to their contribution (Henseler et al., 2009) to each construct, giving us a classification of the most important dimensions of the OCs impacting the ACAP.

## **Discussion**

As we revealed in the results, the OCs were able to predict 80.5% of the variance of the ACAP in companies belonging to the tourism industry.

The creation of a dynamic capacity, specifically ACAP, involves the interaction of different OCs. Zollo and Winter (1999) proposed the importance of observing the influence of the three mechanisms as longitudinal, simultaneous, and interrelated backgrounds. These OCs are inputs for the creation of the dynamic capacity of absorption.

The OCs must be built—they are not resources that can be acquired (Barreto & Patient, 2013). Therefore, we propose knowledge, centralisation, connectivity, knowledge consolidation, and formalisation as OCs that allow the creation of ACAP in organisations. This study makes an important contribution in the field of OCs, particularly in the ACAP. The mechanisms proposed by Zollo and Winter (1999) are designed to create and evolve a dynamic capacity, as well as to propose the capabilities of the organisations that facilitate that creation. We propose that the structure flexibility associated with knowledge, centralisation (corresponding to the mechanism of organisational routines), connectivity and consolidation of knowledge (articulation of knowledge), and



formalisation (knowledge coding) are capabilities of the organisation that theoretically support the creation of ACAP. We also respond to the research question from the empirical verification made and applied to the tourism sector.

Other studies have proposed organisational elements as background of the ACAP. Bosch et al. (1999) proposed an impact of the structure of the organisations (functional, divisional, and matrix) and the combinative capacities on the ACAP. Their study highlights the relationship between the organisational structure and the activities of knowledge processing in the organisation and the organisational forms as the type of infrastructure that evaluate, assimilate, integrate, and use knowledge. Each the combinative capacities that they propose as antecedent to the capacities of the systems, of coordination and of socialisation has a different impact on the ACAP.

Jansen et al. (2005) proposed combinative capacities as organisational antecedents of the ACAP. The mechanisms that they indicate include the coordination capacities that contemplate the functional interfaces, the participation in decision making and work rotation, the capacities of the systems to consider the level of formalisation and routinisation, and that socialisation capabilities involve connectivity and socialisation tactics. Some of these mechanisms are related to those proposed in our study, although they differ in the impact on ACAP. For example, in our study all of the proposed OCs influence ACAP, while in the study by Jansen et al. (2005) only some of the mechanisms associated with the combinative capacity drove the ACAP.

### **Limitations and future research**

This research is limited in its results and conclusions. First, this study only reviewed a representative sample of companies of the tourist industry in Ecuador (10% maximum

margin of error for a 95% confidence level). Second, this study follows a cross-sectional rather than a longitudinal approach, which might hide other effects on the variables of interest.

Future research could include other sectors of the economy that have not been explored. In this study, we focused on the tourism sector because it is of interest for the economy, in which the integration of the knowledge generated abroad is necessary for the response to the client to be relevant. ACAP, as pointed out by Zahra and George (2002), allows organisations to obtain and maintain a competitive advantage. Thus, future research could integrate variables into their studies to determine the competitive advantage generated. Furthermore, we believe that other mechanisms that allow the generation of ACAP could be evaluated, such as the behaviour of human resources and their influence on the generation of ACAP. Regarding the environment of the hotel industry, companies should assess the dynamism of the sources of external knowledge and the interorganisational relationships to which it is exposed.

### **Concluding Summary**

This paper deepens the ACAP theoretical framework to offer a better understanding of the mechanisms that occur and to help to generate valuable knowledge. With the objective of finding the organisational capacities (OCs) that generate ACAP, and based on the existing theoretical background, we developed an empirical study on the Ecuadorian touristic sector.

Using a PLS modelling technique applied to 86 companies, our results confirm that organisational capacities positively and directly impact on the generation of ACAP. Moreover, we found that the effect of each analysed OC on the ACAP generation is

different. For example, *formalisation*, consolidation of emerging understanding and knowledge management infrastructure arise as the most important triggers, while centralisation and connectivity have a lower impact.

Our results also find different weights on the dimensions that together form the ACAP construct, showing how *transformation* and *acquisition* are the most important dimensions contributing to the ACAP.

Important managerial implications arise from this study. First, the creation and exploitation of knowledge can be fostered and resources and investment can be oriented in a more effective way within companies. Second, policy making implications are important because the touristic sector includes not only by private business but also institutional structures, which may collaborate and enhance the knowledge creation and assimilation.

## References

- Ambrosini, V., & Bowman, C. (2009). What are dynamic capabilities and are they a useful construct in strategic management? *International Journal of Management Reviews*, 11(1), 29-49. doi:10.1111/j.1468-2370.2008.00251.x
- Amit, R., & Schoemaker, P. (1993). Strategic assets and organizational rent. *Strategic Management Journal*, 14(1), 33-46. doi:doi:10.1002/smj.4250140105
- Aribi, A., & Dupouët, O. (2016). Absorptive capacity: A non-linear process. *Knowledge Management Research & Practice*, 14(1), 15-26
- Barreto, I., & Patient, D. L. (2013). Toward a theory of intraorganizational attention based on desirability and feasibility factors. *Strategic Management Journal*, 34(6), 687-703. doi:10.1002/smj.2029
- Becker, J. M., Klein, K., & Wetzels, M. (2012). Hierarchical Latent Variable Models in PLS-SEM: Guidelines for Using Reflective-Formative Type Models. *Long Range Planning*, 45(5), 359-394. doi:https://doi.org/10.1016/j.lrp.2012.10.001
- Borodako, K., Berbeka, J., & Rudnicki, M. (2014). The potential of local KIBS companies as a determinant of tourism development in Krakow. *Tourism Economics*, 20(6), 1337-1348.
- Carlile, P. R. (2002). A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development. *Organization Science*, 13(4), 442-455.
- Cegarra-Navarro, J. G., & Sánchez-Polo, M. T. (2008). Linking the individual forgetting context with customer capital from a seller's perspective. *Journal of the Operational Research Society*, 59(12), 1614-1623. doi:10.1057/palgrave.jors.2602491

- Cepeda-Carrion, G., Cegarra-Navarro, J. G., & Jimenez-Jimenez, D. (2012). The Effect of Absorptive Capacity on Innovativeness: Context and Information Systems Capability as Catalysts. *British Journal of Management*, 23(1), 110-129. doi:10.1111/j.1467-8551.2010.00725.x
- Chin, W. W. (1998). The partial least squares approach for structural equation modeling. In *Modern methods for business research*. (pp. 295-336). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Chin, W. W., & Newsted, P. R. (1999). Structural equation modeling analysis with small samples using partial least squares. In R. H. Hoyle (Ed.). *Statistical strategies for small sample research*, 307-341.
- Churchill, G. A. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research*, 16(1), 64-73. doi:10.2307/3150876
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128-152. doi:10.2307/2393553
- Collis, D. J. (1994). Research Note: How Valuable are Organizational Capabilities? *Strategic Management Journal*, 15(S1), 143-152. doi:doi:10.1002/smj.4250150910
- Croes, R., & Rivera, M. A. (2017). Tourism's potential to benefit the poor: A social accounting matrix model applied to Ecuador. *Tourism Economics*, 23(1), 29-48. <https://doi.org/10.5367/te.2015.0495>
- Damanpour, F. (1991). Organizational Innovation: A Meta-Analysis Of Effects Of Determinants and Moderators. *Academy of Management Journal*, 34(3), 555-590. doi:10.5465/256406
- Deshpande, R., & Zaltman, G. (1982). Factors Affecting the Use of Market Research Information: A Path Analysis. *Journal of Marketing Research*, 19(1), 14-31. doi:10.1177/002224378201900102
- Diamantopoulos, A., & Winklhofer, H. M. (2001). Index construction with formative indicators: An alternative to scale development. *Journal of Marketing Research*, 38(2), 269-277.
- Felin, T., Foss, N. J., Heimeriks, K. H., & Madsen, T. L. (2012). Microfoundations of Routines and Capabilities: Individuals, Processes, and Structure. *Journal of Management Studies*, 49(8), 1351-1374. doi:10.1111/j.1467-6486.2012.01052.x
- Flatten, T. C., Engelen, A., Zahra, S. A., & Brettel, M. (2011). A measure of absorptive capacity: Scale development and validation. *European Management Journal*, 29(2), 98-116. doi:<https://doi.org/10.1016/j.emj.2010.11.002>
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50. doi:10.1177/002224378101800104
- García-Morales, V. J., Bolívar-Ramos, M. T., & Martín-Rojas, R. (2014). Technological variables and absorptive capacity's influence on performance through corporate entrepreneurship. *Journal of Business Research*, 67(7), 1468-1477. doi:<http://doi.org/10.1016/j.jbusres.2013.07.019>
- Gebauer, H., Worch, H., & Truffer, B. (2012). Absorptive capacity, learning processes and combinative capabilities as determinants of strategic innovation. *European Management Journal*, 30(1), 57-73. doi:<http://dx.doi.org/10.1016/j.emj.2011.10.004>
- Geisser, S. (1975). The predictive sample reuse method with applications. *Journal of the American statistical Association*, 70(350), 320-328.
- Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge Management: An Organizational Capabilities Perspective. *Journal of Management Information Systems*, 18(1), 185-214.
- González, R. M., Álvarez, J. A. R., & Bonilla, J. C. L. (2015). Propuesta de un índice para medir la capacidad de absorción de las MIPYMES costarricenses. *Tec Empresarial*, 9(1), 7-18.
- Grant, R. M. (1996a). Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration. *Organization Science*, 7(4), 375-387. doi:10.1287/orsc.7.4.375
- Grant, R. M. (1996b). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17, 109-122. doi:10.1002/smj.4250171110
- Hage, J., & Aiken, M. (1967). Relationship of Centralization to Other Structural Properties. *Administrative Science Quarterly*, 12(1), 72-92. doi:10.2307/2391213

- Hair, J., Hult, G. T., Ringle, C., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.
- Hart, T. A., Gilstrap, J. B., & Bolino, M. C. (2016). Organizational citizenship behavior and the enhancement of absorptive capacity. *Journal of Business Research*, 69(10), 3981-3988. doi:<https://doi.org/10.1016/j.jbusres.2016.06.001>
- Helfat, C. E., & Winter, S. G. (2011). Untangling dynamic and operational capabilities: strategy for the (n)ever-changing world. *Strategic Management Journal*, 32(11), 1243-1250. doi:10.1002/smj.955
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New Challenges to International Marketing* (pp. 277-319).
- Jansen, J. J. P., Van Den Bosch, F. A. J., & Volberda, H. W. (2005). Managing Potential and Realized Absorptive Capacity: How do Organizational Antecedents Matter? *Academy of Management Journal*, 48(6), 999-1015. doi:10.5465/amj.2005.19573106
- Jansen, J. J. P., Van Den Bosch, F. A. J., & Volberda, H. W. (2006). Exploratory Innovation, Exploitative Innovation, and Performance: Effects of Organizational Antecedents and Environmental Moderators. *Management Science*, 52(11), 1661-1674. doi:10.1287/mnsc.1060.0576
- Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: antecedents and consequences. *Journal of Marketing*, 57(3), 53-70.
- Khandwalla, P. N. (1977). Some top management styles, their context and performance. *Organization & Administrative Sciences*, 7(4), 21-51.
- Knight, G. A., & Cavusgil, S. T. (2004). Innovation, organizational capabilities, and the born-global firm. *Journal of International Business Studies*, 35(2), 124-141. doi:10.1057/palgrave.jibs.8400071
- Lane, P. J., & Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal*, 19(5), 461-477.
- Lee, N., & Cadogan, J. W. (2013). Problems with formative and higher-order reflective variables. *Journal of Business Research*, 66(2), 242-247.
- Lin, C., Wu, Y.-J., Chang, C., Wang, W., & Lee, C.-Y. (2012). The alliance innovation performance of R&D alliances—the absorptive capacity perspective. *Technovation*, 32(5), 282-292. doi:<https://doi.org/10.1016/j.technovation.2012.01.004>
- Lin, X., & Germain, R. (2003). Organizational structure, context, customer orientation, and performance: lessons from Chinese state-owned enterprises. *Strategic Management Journal*, 24(11), 1131-1151. doi:10.1002/smj.348
- Liu, H., Ke, W., Wei, K. K., & Hua, Z. (2013). The impact of IT capabilities on firm performance: The mediating roles of absorptive capacity and supply chain agility. *Decision Support Systems*, 54(3), 1452-1462. doi:<http://doi.org/10.1016/j.dss.2012.12.016>
- Liu, S. C.-H., & Gan, B. (2018). Creating a Competitive Advantage by Occupying Critical Position: Analysis of the Tourism Academy Network in Taiwan. *Journal of Hospitality & Tourism Research*, 42(1), 102-121. doi:10.1177/1096348014550867
- Malhotra, A., Gosain, S., & Sawy, O. A. (2005). Absorptive capacity configurations in supply chains: Gearing for partner-enabled market knowledge creation. *MIS Quarterly*, 29(1), 145-187.
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2(1), 71-87.
- Martínez-Costa, M., Jiménez-Jiménez, D., & Dine Rabeh, H. A. (2019). The effect of organisational learning on interorganisational collaborations in innovation: an empirical study in SMEs. *Knowledge Management Research & Practice*, 17(2), 137-150.
- McFadyen, M. A., & Cannella, A. A. (2004). Social Capital and Knowledge Creation: Diminishing Returns of the Number and Strength of Exchange. *The Academy of Management Journal*, 47(5), 735-746. doi:10.2307/20159615
- Miles, R. E., Snow, C. S., Mathews, J. A., Miles, G., & Coleman, Jr. H. J. (1997). Organizing in the Knowledge Age: Anticipating the Cellular Form. *Academy of Management Perspectives*, 11(4), 7-20.

- Miller, D., & Dröge, C. (1986). Psychological and Traditional Determinants of Structure. *Administrative Science Quarterly*, 31(4), 539-560. doi:10.2307/2392963
- Ministerio de Turismo del Ecuador (2018). *Rendición de cuentas 2018*. <https://www.turismo.gob.ec/informe-de-rendicion-de-cuentas/>, Accessed in March 2019
- Noblet, J. P., Simon, E., & Parent, R. (2011). Absorptive capacity: a proposed operationalization. *Knowledge Management Research & Practice*, 9(4), 367-377.
- Nord, W., & Tucker, S. (1987). *Implementing routine and radical innovations*. Lexington Books, Lexington.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd. ed.). New York: McGraw-Hill.
- O'Dell, C., & Grayson, C. J. (1998). If Only We Knew What We Know: Identification and Transfer of Internal Best Practices. *California Management Review*, 40(3), 154-174. doi:10.2307/41165948
- Pongsathornwivat, A., Jeenanunta, C., Huynh, V. N., & Udomvitid, K. (2019). How collaborative routines improve dynamic innovation capability and performance in tourism industry? A path-dependent learning model. *Asia Pacific Journal of Tourism Research*, 24(4), 281-295.
- Patel, P. C., Kohtamäki, M., Parida, V., & Wincent, J. (2015). Entrepreneurial orientation-as-experimentation and firm performance: The enabling role of absorptive capacity. *Strategic Management Journal*, 36(11), 1739-1749. doi:10.1002/smj.2310
- Patel, P. C., Terjesen, S., & Li, D. (2012). Enhancing effects of manufacturing flexibility through operational absorptive capacity and operational ambidexterity. *Journal of Operations Management*, 30(3), 201-220. doi:http://doi.org/10.1016/j.jom.2011.10.004
- Pentland, B. T., & Feldman, M. S. (2005). Organizational routines as a unit of analysis. *Industrial and Corporate Change*, 14(5), 793-815.
- Pertusa-Ortega, E. M., Zaragoza-Sáez, P., & Claver-Cortés, E. (2010). Can formalization, complexity, and centralization influence knowledge performance? *Journal of Business Research*, 63(3), 310-320. doi:https://doi.org/10.1016/j.jbusres.2009.03.015
- Reinartz, W., Haenlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance-based and variance-based SEM. *International Journal of Research in Marketing*, 26, 336-344. doi:10.1016/j.ijresmar.2009.08.001
- Ringle, C. M., Sarstedt, M., & Straub, D. W. (2012). Editor's Comments: A Critical Look at the Use of PLS-SEM in "MIS Quarterly". *MIS Quarterly*, 36(1), iii-xiv. doi:10.2307/41410402
- Ringle, C. M., Wende, S., & Becker, J.-M. (2015). *SmartPLS 3*.
- Ritala, P., & Hurmelinna-Laukkanen, P. (2013). Incremental and Radical Innovation in Coopetition—The Role of Absorptive Capacity and Appropriability. *Journal of Product Innovation Management*, 30(1), 154-169. doi:10.1111/j.1540-5885.2012.00956.x
- Schein, E. H. (1993). Legitimizing Clinical Research in the Study of Organizational Culture. *Journal of Counseling & Development*, 71(6), 703-708. doi:10.1002/j.1556-6676.1993.tb02264.x
- Sheremata, W. A. (2000). Centrifugal and Centripetal Forces in Radical New Product Development under Time Pressure. *The Academy of Management Review*, 25(2), 389-408. doi:10.2307/259020
- Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society: Series B (Methodological)*, 36(2), 111-133.
- Teece, D. J. (2014). The foundations of enterprise performance: dynamic and ordinary capabilities in an (economic) theory of firms. *Academy of Management Perspectives*, 28(4), 328-352. doi:10.5465/amp.2013.0116
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533. doi:10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-

- Tsai, W. (2002). Social Structure of "Coopetition" within a Multiunit Organization: Coordination, Competition, and Intraorganizational Knowledge Sharing. *Organization Science*, 13(2), 179-190.
- Tushman, M. L., & O'Reilly, C. A. (1996). Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change. *California Management Review*, 38(4), 8-29. doi:10.2307/41165852
- Van de Ven, A. H. (1986). Central Problems in the Management of Innovation. *Management Science*, 32(5), 590-607.
- Van Den Bosch, F. A. J., Volberda, H. W., & Boer, M. d. (1999). Coevolution of Firm Absorptive Capacity and Knowledge Environment: Organizational Forms and Combinative Capabilities. *Organization Science*, 10(5), 551-568. doi:10.1287/orsc.10.5.551
- Wang, C.L., & Ahmed, P.K: (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, 9(1), 31-51. doi: 10.1111/j.1468-2370.2007.00201.x
- Wetzels, M., Odekerken-Schrder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchial construct models: guidelines and impirical illustration. *MIS Quarterly*, 33(1), 177-195.
- Wilson, B., & Henseler, J. (2007). Modeling Reflective Higher-Order Constructs using Three Approaches with PLS Path Modeling: A Monte Carlo Comparison. Accessed online at <https://hdl.handle.net/2066/160877>
- Winter, S. G. (2000). The Satisficing Principle in Capability Learning. *Strategic Management Journal*, 21(10-11), 981-996. doi:10.1002/1097-0266(200010/11)21:10/11<981::Aid-smj125>3.0.Co;2-4
- Zahra, S. A., & George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. *Academy of Management Review*, 27(2), 185-203. doi:10.5465/amr.2002.6587995
- Zander, U., & Kogut, B. (1995). Knowledge and the Speed of the Transfer and Imitation of Organizational Capabilities: An Empirical Test. *Organization Science*, 6(1), 76-92. doi:10.1287/orsc.6.1.76
- Zmud, R. W. (1982). Diffusion of Modern Software Practices: Influence of Centralization and Formalization. *Management Science*, 28(12), 1421-1431. doi:10.1287/mnsc.28.12.1421
- Zodorova, G., & Durisin, B. (2007). Absorptive capacity: Valuing a reconceptualization. *Academy of Management Review*, 32(3), 774-786. doi:10.5465/amr.2007.25275513
- Zollo, M. & Winter, S. G. (1999). From organizational routines to dynamic capabilities: INSEAD.
- Zollo, M., & Winter, S. G. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 13(3), 339-351. doi:10.1287/orsc.13.3.339.2780
- Zou, T., Ertug, G., & George, G. (2018). The capacity to innovate: A meta-analysis of absorptive capacity. *Innovation*, 20(2), 87-121.