# ABSORPTIVE CAPACITY AND SOCIAL INTEGRATION MECHANISMS: EVIDENCE FROM BANK BRANCHES IN BRAZIL

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## ABSTRACT

**Purpose:** The article aims to verify the relationship between individual absorptive capacity, organizational absorptive capacity, and social integration mechanisms in bank branches.

**Methodology:** A quantitative, descriptive method was adopted, with data collected through a survey and processed using the structural equation modeling method with partial least squares estimation (PLS-SEM).

**Results:** As a result, a positive relationship was found between individual and organizational absorptive capacities and the positive effects of social integration mechanisms on each of them, since these mechanisms are related to socio-environmental, affective, cognitive and organizational resources.

**Originality:** We extend the Social Integration Mechanisms by demonstrating that resource development in emerging markets requires a collective effort and complementary organizational processes to produce high results. Finally, we examine the conditions under which companies in emerging markets can complement their processes to achieve better performance.

**Theoretical/Practical Contribution:** Theoretical contributions include the influence of the cognitive, socio-environmental, affective, and behavioral dimensions of social integration mechanisms that enhance the development of knowledge absorption in individuals and in the organization. Practical contributions lie in the adoption of social integration mechanisms by managers in order to maximize individual and organizational absorptive capacities.

**Keywords:** Individual absorptive capacity; Organizational absorptive capacity; Social integration mechanisms; Financial institutions; Knowledge.

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## 1 INTRODUCTION

The digital age is changing the behavior of consumers in the financial system. The financial system's technology startups, known as fintechs, are looking for simple, low-cost, yet agile, convenient, and high-quality digital solutions that are gaining customers' trust every day and increasing the interest of financial institutions (De Carvalho, 2019).

As a result, the banking industry is inserted in an environment of technological turbulence, where the degree of change in products and processes is constant (Li et al., 2020). Traditional banks are looking for a different way to confront these new entrants to the sector. They are adopting initiatives to get closer to communities that foster technological entrepreneurship, such as Banco Itaú's Cubo digital platform, Banco do Brasil's BB for developers, and Bradesco's Inovabra Habitat (Sciarretta, 2016).

In this sense, the banking industry increasingly has to manage an ever-increasing amount of information, and its managers and employees are trying to capture this information to transform it into applicable organizational knowledge (Carmona et al., 2015). This information can help them to better serve their network of customers by seeking more convenient solutions with a high level of quality and security in their services.

Given this context, and in an attempt to shed light on the processes of developing the capacity to absorb knowledge and apply it, this research analyses the relationship between individual absorptive capacity (Individual ACAP) and organizational absorptive capacity (Organizational ACAP), as well as identifying the effect of social integration mechanisms (SIM) on these two capacities.

For the development of this research, we rely on the premise that Individual ACAP is the individual's ability to bring external knowledge into the organization and, through their ability to recognize the value and assimilate new knowledge that is influenced by their disposition and cognitive intuition, transform, and apply what has been absorbed. Therefore, Individual ACAP is positioned as an antecedent of Organizational ACAP (Cohen & Levinthal, 1990; Ojo et al., 2014).

Regarding the influence of the individual level on the organizational level, when we talk about absorptive capacity, we mean the individual's interest in collaborating with the organization through their externally acquired knowledge and skills so that the

interaction between individuals improves the organizational ACAP (Yao & Chang, 2017). This collaboration is perceived in the understanding of each employee's cognition, motivation, action, and interaction (Volberda et al., 2010) as the main contributors to organizational knowledge (Gao et al., 2017; Hart et al., 2016). Yao and Chang (2017) construct a perspective on how individual characteristics and engagement with organizational culture contribute to the development of Organizational ACAP.

Lowik et al. (2017) realized that we need to understand the role of individual ACAP better, as they identified an essential relationship between the individual cognitive process and creative behavior in the absorptive capacity of the organization and suggested studies on the interaction between Individual and Organizational ACAP, especially for individuals in managerial positions.

After exploring the development that organizational ACAP emerges from existing characteristics at the level of the individual (individual ACAP), Yao and Chang (2017) and Von Briel et al. (2019) state that we need to understand the effects of social integration mechanisms on absorptive capacity at the individual level and the organizational level. Löwik (2013) demonstrates that social integration mechanisms are necessary for individual and organizational ACAP, suggesting further research in other sectors or service-oriented companies to identify other possible configurations for MIS.

Von Briel, Schneider (2019), and Lowry (2019) present new individual dimensions of social integration for different stages of knowledge absorption and suggest that MIS is proper in absorbing distant, tacit, and complex knowledge. The proposal opens the way for future research to explore knowledge absorption at different organizational levels by evaluating the interactive effect of MIS on them. Along the same lines, Yao and Chang (2017) studied the Chinese high-tech industry, building a perspective on how individual characteristics and engagement with organizational culture contribute to the development of Organizational ACAP. However, they propose that further research into how individual factors and MIS enhance Organizational ACAP is needed.

This research contributes to the literature on ACAP by exploring and deepening individual contributions to the implementation of corporate strategy and evaluating the effects of individual absorptive capacities on organizational capacities, as proposed by (Enkel et al., 2017; Zhang et al., 2014). In addition, the seminal work of Jansen et al.

(2005) contributes by focusing on the role of social integration mechanisms (organizational antecedents) in individual and organizational ACAP.

All the objectives pursued are based on the recognition that companies need to be able to adapt their practices in the light of environmental changes (Ndiege et al., 2012) using new and already stored information, assimilating and transforming it in the right way in order to apply it at the right time (Carmona et al., 2015), i.e. it is in this gap that the theory of absorptive capacity and its social integration mechanisms can contribute to the search for efficiency in these actions.

The research method is quantitative and descriptive, with data collected through a one-off survey. The data collected was organized and processed using the structural equation modeling method with partial least squares estimation (PLS-SEM) using SmartPLS 3.3.2 software. The results show a positive relationship between Individual ACAP and the development of Organizational ACAP and that MIS, in its socio-environmental, affective, cognitive, and organizational dimensions, positively affects individual and organizational absorptive capacity.

## 2 INDIVIDUAL AND ORGANIZATIONAL ABSORPTIVE CAPACITY AND SOCIAL INTEGRATION MECHANISMS

For the development of this research, we rely on the premise that Individual ACAP is the individual's ability to bring external knowledge into the organization and, through their ability to recognize the value and assimilate new knowledge that is influenced by their disposition and cognitive intuition, transform, and apply what has been absorbed. Therefore, Individual ACAP is positioned as an antecedent of Organizational ACAP (Cohen & Levinthal, 1990; Ojo et al., 2014).

Organizational structures that favor the development of individuals and the use of their previous experiences to assimilate knowledge is a finding in Ojo, Raman, and Chong's (2016) studies on the Nigerian oil industry. Cassol, Gonçalo, Ruas (2016) show an essential relationship between individuals, organizational practices and structures, and organizational absorptive capacity in generating results.

Sjödin, Frishammar, and Thorgren (2019) reinforce that the ACAP process requires individual engagement in all dimensions of recognition, assimilation, and

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application of knowledge, and it is important to value their potential, corroborating the value and defending their integration to build organizational absorptive capacity.

It is possible to estimate a high potential contribution of individual ACAP in organizations. In order to explore the contributions, the study should advance on some characteristics in the diversity of individuals in each organization, identifying and valuing the gatekeepers, essential individuals in the knowledge management process cited by Tushman and Katz (1980).

Löwik (2013) also characterizes managers as an essential part of the development of Organizational ACAP. These professionals have higher levels of individual ACAP when compared to non-managers and gain importance when external information is not directly related to the organization's core activities.

For Ter Wal, Criscuolo, and Salter (2017), managers combine external search with assimilation efforts that help achieve innovation by developing potential absorptive capacity, building a network of information exchange and communication, filtering and gathering information from internal and external sources, and providing it to the Organization (Enkel et al., 2017; Gemünden et al., 2007).

For Huang, Bhattacherjee, and Wong (2018), absorptive capacity depends on managers' abilities to obtain valuable knowledge for their organization and communicate it to internal employees. These skills come into play only through the combined efforts of employees (Mason et al., 2020) interacting through mechanisms related to communication, the transfer of knowledge from the external environment to the organization, and the dissemination of this knowledge within the Organization (Tutida et al., 2020).

Because of their importance in the process of integration, transparency, and application of knowledge, the contribution of individuals in absorptive capacity models cannot be overlooked (Mokhils et al., 2020).

Based on the above arguments, the first Hypothesis to be evaluated is:


## 3 INDIVIDUAL ABSORPTIVE CAPACITY HAS A POSITIVE IMPACT ON ORGANIZATIONAL ABSORPTIVE CAPACITY


To be put to good use, the absorption of knowledge by individuals needs social integration mechanisms (SIMs) that facilitate the sharing of information, the

understanding of the meaning of information, and the transformation of individual knowledge into organizational knowledge (Cohen & Levinthal, 1990; Slater & Narver, 1995; Kim, 1998). Social integration mechanisms are motivators that reduce barriers and support sharing individual information, increasing the efficiency of capabilities (Zahra & George, 2002).

Löwik (2013) ratifies the use of social integration mechanisms in exchanging knowledge and encourages employees to share it to develop capabilities. Social integration mechanisms (SIMs) "promote a free flow of information between employees, allowing the company to transform and exploit the information at its disposal more efficiently" (Armstrong & Lengnick-Hall, 2013, p. 7). MIS acts as organizational routines based on individual activities to stimulate the exchange and sharing of knowledge at the individual level (Lane et al., 2006; Löwik, 2013; Löwik et al., 2016).

For Pihlajamaa (2017), MIS interacts with the individual level and explains the generation of capabilities at the company level. In each company, different insights can occur when MIS interacts with different types of external sources, affecting individual capabilities differently (Flor et al., 2018; Gao et al., 2017).

Based on this argument, the second research hypothesis is formulated: H2 – Social Integration Mechanisms have a positive impact on Individual Absorptive Capacity.

The integration of MIS should occur at the individual, team, and organizational levels (Lizarelli et al., 2019). In the context of organizational knowledge absorption, social integration happens as group members participate and collaborate in the recognition, assimilation, and application of knowledge (Von Briel et al., 2019) and can mitigate the challenges associated with distant, tacit, and complex knowledge.

The use of technology tools to integrate knowledge makes it possible to activate absorption capacity (Chang et al., 2016), making it essential to use MIS to enable learning and identify and evaluate its impact on the Organization (Picoli & Takahashi, 2016).

MIS can reduce barriers to knowledge absorption among employees and thus positively influence an organization's absorptive capacity (Von Briel et al., 2019). For Pihlajamaa (2018) and Cappellari, Welter, Hermes, and Sausen (2019), social integration mechanisms support the development of potential and realized absorptive

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capacities, components of organizational absorptive capacity, according to (Zahra & George, 2002).

In the organization, social integration mechanisms facilitate the absorption of knowledge with a primary role for the process of knowledge transfer, both individual and organizational (Tutida, 2020) and are important for absorptive capacity in turbulent environments (Li et al., 2020).

Based on the above arguments, the third hypothesis is expressed as follows:

**H3 – Social Integration Mechanisms have a positive impact on Organizational Absorptive Capacity.**

## 4 METHOD

This quantitative descriptive research uses the survey method in a universe of traditional banks in Brazil in a sample comprising general managers from 215 branches.

Data was collected using questionnaires sent by email from February 22 to 26, 2021, which were pre-tested. The instrument comprises four blocks related to the survey of demographic data of the population, the investigation of ACAP at the individual level, the mechanisms of social integration, and Organizational ACAP.

The scale to measure the variables was a seven-point Likert scale, with the following description: 1 - Strongly Disagree; 2 - Strongly Disagree; 3 - Partly Disagree; 4 - Neutral; 5 - Partly Agree; 6 - Strongly Agree; and 7 - Strongly Agree.

The survey sample was made up of 215 General Managers of branches specializing in serving micro and small businesses, who were responsible for answering questionnaires for individual assessment, with a view to their perception of the organization's results and the strategies adopted by the team.

Collective data analysis aims to show the behavior of the total sample analyzed, without individual evaluations of responses. Recent studies related to the ACAP of knowledge identify characteristics such as length of service, age, gender, education, and team size as important information to be considered in the analysis (Costa, Camargo, Toaldo & Didonet, 2019; Guedes, Ziviani, Paiva, Ferreira, & Herzog, 2017; Leal-Rodríguez, Roldán, Ariza-Montes & Leal-Millán 2014; Löwik et al., 2016). These

variables are characterized as controls in the research because they have the potential to influence the dependent variables.

**The variable Length of Service** is calculated by categories of minimum time of institutional relationship with clients, average period that managers remain in the position in the same branch and period of experience working as general manager in other branches: i) up to two years; ii) from two to four years; and iii) over four years in the position of General Manager (Costa et al., 2019).

**The variables age and gender** are attributed by the respondents and the education level determined by categories of education level with the references of Leal-Rodríguez et al. (2014), Costa et al. (2019) and Guedes et al. (2017): high school; college; postgraduate at the level of master's in business administration (MBA) or postgraduate lato sensu; and postgraduate stricto sensu (master's or doctorate).

**The variable Agency Size** (Löwik et al., 2016) reports the number of Relationship Managers or relationship portfolios in each branch for subsequent categorization into three levels: smaller branches with up to six relationship managers; medium-sized branches with seven to nine relationship managers; and more complex or larger branches with 10 to 12 relationship managers. The number of Relationship Managers is defined by the number of clients served, in relation to the municipality or region and the number of branches of the same profile in the area of operation.

Other characteristics such as the type of industry, turnover or length of time the company has been in existence were not addressed because they are homogeneous in all the bank branches studied.

Quantitative studies of the Individual Absorptive Capacity construct are still scarce, but the proposal by Löwik et al. (2012) and Tian and Soo (2014) are relevant, valid and reliable. Used **to investigate four dimensions of individual absorptive capacity, acquisition, assimilation, transformation, and application**, it can be seen that they build a relationship with organizational absorptive capacity in the model theorized by Zahra and George (2002).

The construct analysis model is shown in Figure 1.

**Figure 1** – Analysis model – Individual Absorptive Capacity

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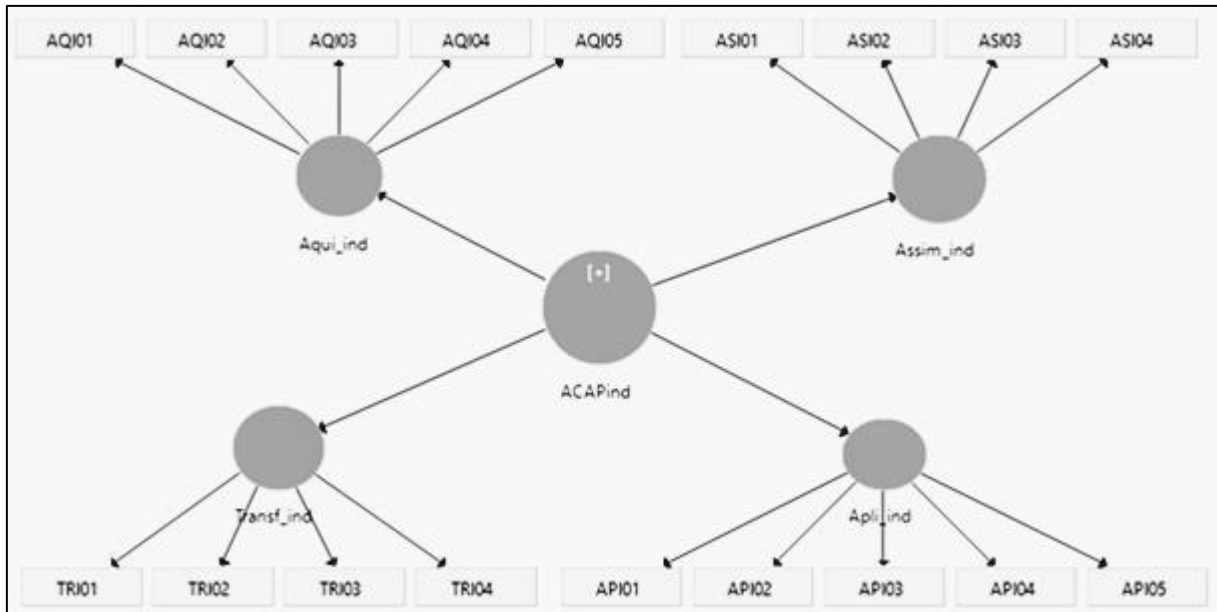


Source: Elaborated by the author.

The literature has not identified an instrument that meets the objective of exploring the dimensions of social integration mechanisms in the way proposed by Von Briel et al. (2019). **The analysis of the socio-environmental dimension** is carried out using an instrument with the references of González, Fernández & Cameselle (1997) and Gold, Malhotra & Segars (2001), considering individuals linked by computer and communication technologies who work on the completion of a specific project to achieve a common purpose (Sarker, Saonee, Valacich, & Sarker, Suprateek, 2003; Pangil & Chan, 2014).

The quantitative research scale developed by Gold et al. (2001) is suitable for this study to analyze the MIS of the socio-environmental dimension when looking for virtual team interaction. Among the tools available for these interactions, specific aspects of interpersonal, mass or network communication can be classified, with interaction in real time or not, called synchronous and asynchronous respectively (Jensen & Helles, 2017).

To analyze the **affective dimension,** Jansen et al. (2005) and Valentim, Lisboa and Franco (2016) provide in their scales some statements that contribute to the development of this research and to the construction of the questionnaire.

Jansen et al. (2005) with connectivity mechanisms, measuring the extent to which individuals in organizational units were networked at various levels of the hierarchy Valentim et al. (2016) identify and categorize knowledge management

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practices to develop ACAP in improving efficiency, strategic adaptation, launching new products and services. For the development of the research in the affective dimension, experience-sharing practices are evaluated.

In order to **explore the cognitive dimension**, Jansen et al. (2005), Valentim et al. (2016), Withey, Daft and Cooper (1983), O'Reilly and Roberts (1977) and Gold et al. (2001) support the instrument that expresses characteristics of social integration mechanisms of this dimension.

Jansen et al. (2005) present antecedents of organizational ACAP by job rotation mechanisms that explore the extent to which employees perform different functions within and between subunits. Valentim et al. (2016) identifies knowledge management and sharing practices that can improve efficiency and strategic adaptation. Withey et al. (1983) and Jansen et al. (2005) explore MIS for routinizing tasks so that work in units is invariable, uniform, or predictable.

Information accuracy, a strategy for controlling the flow of tasks so that they are carried out and understood correctly (O'Reilly & Roberts, 1977), is also a communication mechanism that affects the quality of decisions and the time needed to clarify information (Lowry, Roberts, Romano, Cheney & Hightower 2006).

The organizational capacity to obtain economic value from its collection of knowledge assets, as well as its information assets, production distribution and affiliation is characteristic of the new economy (Gold et al., 2001), a capacity developed by a management style and integrative culture that can contribute to the development of individual and organizational ACAP by motivating individuals to exchange knowledge (Löwik, 2013).

As for **measuring the behavioral dimension**, Jansen et al. (2005), O'Reilly and Roberts (1977) and Arnold, Arad, Rhoades and Drasgow (2000) make it possible to construct a questionnaire that can express some of the characteristics of the dimension for the development of knowledge absorption capacity. The authors observed antecedents of organizational ACAP through mechanisms of participation in decision-making and tactics for socializing individuals with the group.

For group discussions, O'Reilly and Roberts (1977) present open communication as the willingness of a group member to be receptive to the communication of others. Lowry et al. (2006) propose that by being open to communication it is possible to improve threat assessment more accurately and tolerate change better than someone who is closed to the experience.

Decision-making is one of the characteristics of the management style that considers information and contributions from team members, encouraging them to express ideals (Arnold et al., 2000), social integration mechanisms seen as important for developing absorptive capacity (Distel, 2017).

A characteristic of the management style is coaching, which creates behaviors that educate team members and help them to be self-sufficient, reflecting on performance (Arnold et al., 2000). It is an MIS that "determines the organization's strategy, where to look for knowledge, what resources to allocate and what capabilities to develop" (Löwik, 2013, p. 151).

The Social Integration Mechanisms analysis model is shown in figure 2.

**Figure 2** – Analysis model - Social integration mechanisms
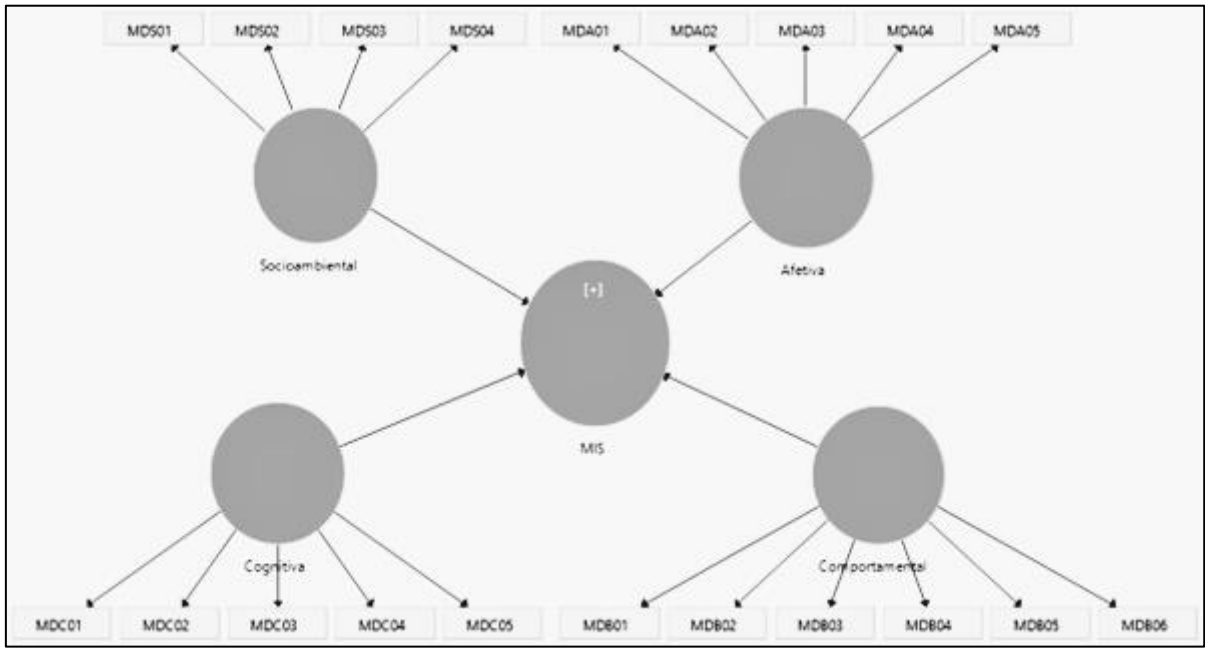


Source: Elaborated by the author.

To **investigate organizational ACAP**, the research instruments produced by Jansen et al. (2005), Flatten, Greve and Brettek (2011) and Tenconi (2015) were defined. The proposal contemplates the investigation of four dimensions of organizational ACAP from Zahra and George's (2002) theoretical model: acquisition, assimilation, transformation, and application.

The Organizational ACAP analysis model is shown in Figure 3.

**Figure 3** – Analysis model - Organizational absorptive capacity
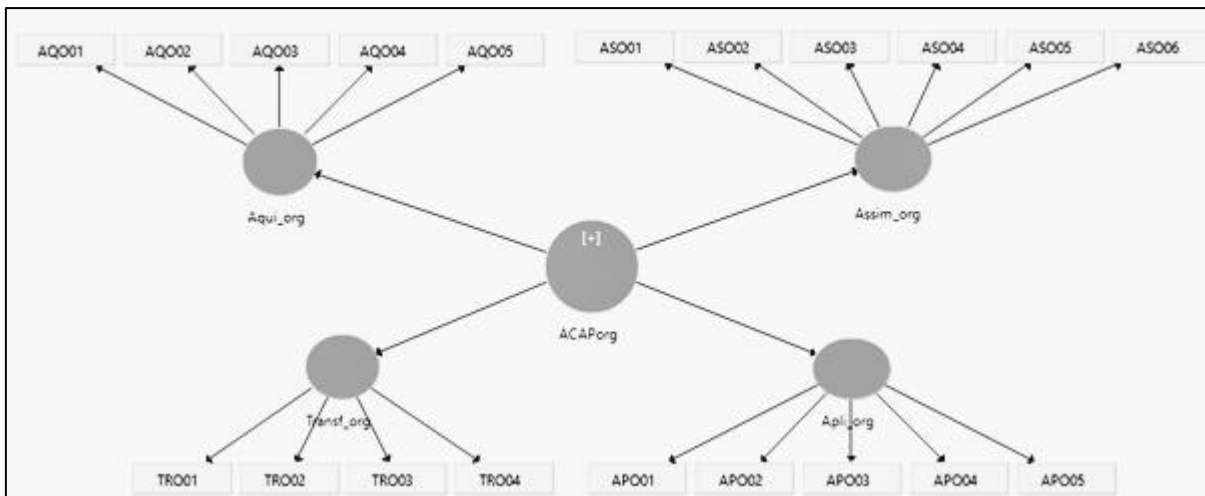


Source: Elaborated by the author

The next stage consisted of applying and analyzing the results. Figure 4 shows the research validation flow.

**Figure 4** – Research validation process
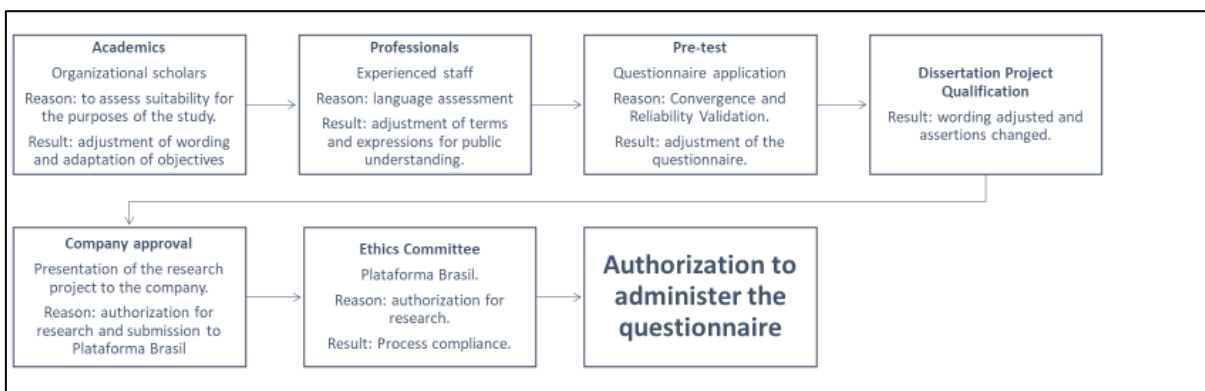


Source: Elaborated by the author

In accordance with the procedures regulated by the company analyzed and in order to comply with the guidelines of the Ethics Council of the Universidade Vale do Itajaí (SC) - Univali, the project was submitted to the Univali Council via the Ministry of Health's Brazil Platform, following the guidelines of the National Research Ethics Commission (Conep) for researchers and Research Ethics Committees in relation to procedures involving contact with participants and/or data collection at any stage of the research, even in a virtual environment. The project was approved on 26/05/2021,

without recommendations, under CAAE No. 46393721.9.0000.0120 with Opinion No. 4.736.846.

## 5 PRESENTATION AND ANALYSIS OF RESULTS

Data collection began on June 1, 2021, when the questionnaire was sent to 206 employees of the company. Of these, 122 responded 2 expressing their disagreement with the Informed Consent Form (ICF), resulting in a sample of 120 valid responses.

The average age of men and women is 44. The youngest man is 33 and the youngest woman is 37. The oldest are a 58-year-old man and a 53-year-old woman. The majority are male, working in the south-east, with an average age of 44, predominantly specialists with more than four years' experience. On average, the agencies have nine relationship portfolios with up to 240 clients, which represents 200,000 clients (micro and small companies) served by those surveyed in all regions.

Only one manager with a high school degree and two with a university degree were identified, representing 2.50% of the total sample. Analyzing the demographic data and the Individual ACAP, Social Integration Mechanisms and/or Organizational ACAP constructs, the control variables gender, age, length of service or size of the agency were not significant in the relationships and therefore had no effect on the constructs.

The perceptions of the respondents to the primary collection questionnaires and the answers are analyzed using measures of central tendency such as means and medians and measures of dispersion such as minimum value, maximum value, variance, standard deviation and coefficient of variation. Table 1 shows the perceptions of the Individual ACAP construct in its first-order variables representing the dimensions of Acquisition, Assimilation, Transformation and Application.

**Table 1** – Perception of individual ACAP

| Variables | Minimum | First Quarter | Average | Third Quarter | Maximum | Average | Variance | Standard Deviation | Coefficient of Variation |
|---|---|---|---|---|---|---|---|---|---|
| AQI01 | 1,00 | 3,00 | 5,00 | 5,00 | 7,00 | 4,55 | 1,78 | 1,39 | 0,31 |
| AQI02 | 1,00 | 3,00 | 5,00 | 5,00 | 6,00 | 4,28 | 1,63 | 1,28 | 0,30 |
| AQI03 | 1,00 | 4,00 | 5,00 | 5,00 | 6,00 | 4,57 | 1,44 | 1,20 | 0,26 |

| Variables | Minimum | First Quarter | Average | Third Quarter | Maximum | Average | Variance | Standard Deviation | Coefficient of Variation |
|---|---|---|---|---|---|---|---|---|---|
| AQI04 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,66 | 1,50 | 1,23 | 0,26 |
| AQI05 | 1,00 | 3,00 | 5,00 | 5,00 | 7,00 | 4,38 | 1,47 | 1,21 | 0,28 |
| Dimension Acquisition | 1,00 | 3,00 | 5,00 | 5,00 | 7,00 | 4,49 | 1,57 | 1,25 | 0,28 |
| ASI01 | 2,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,35 | 1,25 | 1,12 | 0,21 |
| ASI02 | 2,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,39 | 1,06 | 1,03 | 0,19 |
| ASI03 | 2,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,34 | 0,97 | 0,98 | 0,18 |
| ASI04 | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,38 | 1,33 | 1,15 | 0,21 |
| Dimension Assimilation | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,36 | 1,15 | 1,07 | 0,20 |
| TRI01 | 2,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,50 | 1,24 | 1,12 | 0,20 |
| TRI02 | 1,00 | 3,00 | 4,00 | 6,00 | 7,00 | 4,21 | 2,57 | 1,60 | 0,38 |
| TRI03 | 1,00 | 4,00 | 5,00 | 5,00 | 7,00 | 4,58 | 1,73 | 1,31 | 0,29 |
| TRI04 | 2,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,98 | 1,35 | 1,16 | 0,23 |
| Dimension Transformation | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,81 | 1,94 | 1,39 | 0,29 |
| API01 | 2,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,20 | 1,02 | 1,01 | 0,19 |
| API02 | 1,00 | 3,00 | 4,00 | 5,00 | 7,00 | 3,97 | 2,44 | 1,56 | 0,39 |
| API03 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,67 | 1,72 | 1,31 | 0,28 |
| API04 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,76 | 1,51 | 1,23 | 0,26 |
| API05 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,68 | 1,58 | 1,26 | 0,27 |
| Dimension Application | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,65 | 1,80 | 1,34 | 0,29 |

Source: Research Data

For the first-order constructs of the Individual ACAP, the results show low variability of responses, and all the Dimensions have a median equal to 5.00, which on the proposed scale represents "I agree in part" and only in the Acquisition Dimension does the same level of response occur up to the third quartile or 75% of responses. The MIS construct has a descriptive analysis of the responses to the observable variables, Socio-environmental, Affective, Cognitive and Behavioral dimensions, shown in Table 2.

**Table 2** – Perception about SIM

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| Variables | Minimum | First Quarter | Average | Third Quarter | Maximum | Average | Variance | Standard Deviation | Coefficient of Variation |
|---|---|---|---|---|---|---|---|---|---|
| MDS01 | 1,00 | 4,75 | 6,00 | 7,00 | 7,00 | 5,11 | 1,78 | 1,39 | 0,31 |
| MDS02 | 1,00 | 5,00 | 6,00 | 7,00 | 7,00 | 5,99 | 1,02 | 1,01 | 0,30 |
| MDS03 | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,45 | 1,78 | 1,33 | 0,26 |
| MDS04 | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,15 | 2,08 | 1,44 | 0,28 |
| Socio-environmental Dimension | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,43 | 2,24 | 1,50 | 0,26 |
| MDA01 | 1,00 | 5,00 | 6,00 | 7,00 | 7,00 | 5,95 | 1,01 | 1,00 | 0,17 |
| MDA02 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,78 | 2,46 | 1,57 | 0,33 |
| MDA03 | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,57 | 1,39 | 1,18 | 0,21 |
| MDA04 | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,62 | 1,26 | 1,12 | 0,20 |
| MDA05 | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,73 | 1,05 | 1,02 | 0,18 |
| Affective Dimension | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,53 | 1,58 | 1,26 | 0,23 |
| MDC01 | 1,00 | 2,00 | 3,00 | 5,00 | 7,00 | 3,61 | 3,74 | 1,93 | 0,21 |
| MDC02 | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,18 | 1,39 | 1,18 | 0,20 |
| MDC03 | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,20 | 1,61 | 1,27 | 0,20 |
| MDC04 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,58 | 1,81 | 1,36 | 0,38 |
| MDC05 | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,38 | 2,12 | 1,46 | 0,29 |
| Cognitive Dimension | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,79 | 2,54 | 1,59 | 0,23 |
| MDB01 | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,29 | 1,62 | 1,27 | 0,24 |
| MDB02 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,91 | 2,54 | 1,59 | 0,32 |
| MDB03 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,74 | 2,48 | 1,57 | 0,33 |
| MDB04 | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,38 | 1,51 | 1,23 | 0,23 |
| MDB05 | 1,00 | 5,00 | 6,00 | 6,25 | 7,00 | 5,49 | 2,03 | 1,43 | 0,26 |
| MDB06 | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,64 | 1,32 | 1,15 | 0,20 |
| Behavioral Dimension | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,24 | 2,01 | 1,42 | 0,27 |

Source: Research Data

The result of the descriptive analysis of the responses in the Social Integration Mechanisms Dimension shows that the median in the first-order Socio-environmental and Affective variables is 6.00, which on the response scale represents "I agree to a large extent" and remains up to the third quartile or 75% of the sample. The Cognitive and Behavioral dimensions have a median of 5.00 and the variation in the third quartile is to the 6.00 position on the response scale.

The Organizational ACAP construct is represented by the observable variables that make up the Acquisition, Assimilation, Transformation and Application dimensions and the results of the descriptive analysis are shown in Table 3.

**Table 3** – Perception of organizational ACAP

| Variables | Minimum | First Quarter | Average | Third Quarter | Maximum | Average | Variance | Standard Deviation | Coefficient of Variation |
|---|---|---|---|---|---|---|---|---|---|
| AQO01 | 1,00 | 5,00 | 6,00 | 7,00 | 7,00 | 5,48 | 1,92 | 1,38 | 0,25 |
| AQO02 | 1,00 | 4,75 | 5,00 | 6,00 | 7,00 | 5,08 | 1,89 | 1,38 | 0,27 |
| AQO03 | 1,00 | 3,00 | 5,00 | 6,00 | 7,00 | 4,43 | 2,62 | 1,62 | 0,37 |
| AQO04 | 1,00 | 5,00 | 6,00 | 7,00 | 7,00 | 5,41 | 2,21 | 1,49 | 0,27 |
| AQO05 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,71 | 2,46 | 1,57 | 0,33 |
| Dimension Acquisition | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 5,02 | 2,37 | 1,54 | 0,31 |
| ASO01 | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,43 | 1,79 | 1,34 | 0,25 |
| ASO02 | 2,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,68 | 1,09 | 1,05 | 0,18 |
| ASO03 | 2,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,45 | 1,44 | 1,20 | 0,22 |
| ASO04 | 3,00 | 5,00 | 6,00 | 7,00 | 7,00 | 5,95 | 0,91 | 0,95 | 0,16 |
| ASO05 | 1,00 | 3,00 | 5,00 | 6,00 | 7,00 | 4,68 | 2,24 | 1,50 | 0,32 |
| ASO06 | 1,00 | 5,00 | 5,50 | 6,00 | 7,00 | 5,37 | 1,39 | 1,18 | 0,22 |
| Dimension Assimilation | 1,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,43 | 1,62 | 1,27 | 0,23 |
| TRO01 | 2,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,13 | 1,46 | 1,21 | 0,24 |
| TRO02 | 2,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,67 | 1,03 | 1,02 | 0,18 |
| TRO03 | 2,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,49 | 1,13 | 1,06 | 0,19 |
| TRO04 | 1,00 | 4,00 | 5,00 | 6,00 | 7,00 | 4,86 | 2,76 | 1,66 | 0,34 |
| Dimension Transformation | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,29 | 1,68 | 1,30 | 0,25 |
| APO01 | 3,00 | 5,00 | 6,00 | 6,00 | 7,00 | 5,77 | 0,79 | 0,89 | 0,15 |
| APO02 | 2,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,28 | 1,53 | 1,24 | 0,23 |
| APO03 | 3,00 | 5,00 | 5,50 | 6,00 | 7,00 | 5,55 | 0,92 | 0,96 | 0,17 |
| APO04 | 1,00 | 3,00 | 5,00 | 6,00 | 7,00 | 4,37 | 3,11 | 1,76 | 0,40 |
| APO05 | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,31 | 1,37 | 1,17 | 0,22 |
| Dimension Application | 1,00 | 5,00 | 5,00 | 6,00 | 7,00 | 5,26 | 1,76 | 1,33 | 0,25 |

Source: Research Data

The result of the descriptive analysis of the answers to the Organizational ACAP shows a median equal to 5.00 in the Acquisition, Transformation and Application Dimensions, and in the Assimilation Dimension the median is 6.00. The third quartile of all the first-order constructs is 6.00.

After a descriptive analysis of the valid responses, it was not possible to observe any values that could distort the results of the structural model. Therefore, data analysis continues below to evaluate the proposed measurement and structural model.

**The Structural Equation Modeling (SEM)** is presented through two macro-steps: Evaluation of the Measurement Model and Evaluation of the Structural Model in the structural model. The first stage is validated by three criteria: convergent validity, assessed by the Average Variance Extracted (AVE); internal consistency, measured by Cronbach's alpha (AC) and composite reliability (CC); and discriminant validity which, at the construct level, is assessed using the Fornell and Larcker Criterion and at the observed variable level, using cross-loadings.

In the second stage, called Evaluation of the Structural Model in the structural model, the strength and significance of the path coefficients are evaluated, Student's t-test is carried out; Evaluation of Pearson's Coefficients of Determination ($R^2$); Effect Size ($f^2$) or Cohen's Indicator; and Predictive Validity ($Q^2$) or Stone-Geisser indicator.

To run the Structural Equation Modeling, SmartPLS 3.3.2 software was used. In the measurement model, to meet the convergent validity criterion, the AVE value must be greater than 0.50. To achieve internal consistency, the Cronbach's alpha value must be greater than 0.6 and the internal consistency value must exceed 0.7. In the discriminant validity criterion, at the construct level, the value of the square root of the AVE needs to be higher than the value of the correlations (Fornell and Larcker criterion) and, at the cross-loading level, the indicators need to have factor loadings with values higher than the other loadings, both horizontally and vertically (Hair, Hult, Ringle & Sarstedt, 2014).

Initially, the control variables of age, gender, schooling, length of service and agency size were included in the theoretical model for the Organizational ACAP and Performance constructs. After applying the tests to evaluate the measurement and structural model, the variables together or individually did not show any significance in the results. Therefore, the tests continue without considering the effects of the variables.

After analyzing the non-significance of the control variables, some adjustments to the initial model were necessary in order to achieve a satisfactory measurement model. Thus, the variables ASO05, ASO06, APO02, APO04, AQI04, API02, MDC03, MDA02 and MDS01 were excluded.

The AVE is the portion of the data (in the respective variables) that is explained by one of the constructs or latent variables, respective to their sets of variables or how much, on average, the variables correlate positively with their respective constructs or latent variables (Ringle, Silva & Bido, 2014).

AVE values greater than 0.50 are allowed for the model to be considered convergent to a satisfactory result, and intervals between 0.40 and 0.70 should be considered for exclusion only when it leads to an increase in composite reliability (Fornell & Larcker, 1981; Hair Jr et al., 2014). The tests were carried out with the complete model at four points in time for the final result, and the exclusion of the Performance indicator DCL02 did not lead to an increase in composite reliability, and it was decided to keep it in the model. The reasons for excluding the variables used to adjust the model are shown in Table 4.

**Table 4** – Assertions excluded from analysis.

| Research Question In our branch... | Question | Reason |
|---|---|---|
| ... there is a rapid flow of information, for example, if an area or branch obtains important information, it communicates it promptly to other areas or branches | ASO05 | Improve AVE |
| ... the activities carried out are repetitive. | MDC03 | Improve AVE |
| ... we are encouraged to suggest new products, services or new processes based on the knowledge acquired. | APO04 | Cross loads |
| ... different units maintain relationships of conviviality (coexistence) when it is necessary to share knowledge. (Directorates, Superintendencies, Support Bodies, and other Agencies) | MDA02 | Cross loads |
| ... the physical working environment allows for integration and collaboration between the branch's employees. | MDS01 | Cross loads |
| ... we encourage interaction with other areas in the search for solutions to problems, business strategies or the development of new products. | ASO06 | Cross loads |
| ... we regularly reconsider technologies and adapt them in line with new knowledge. | APO02 | Off-Diagonal Cross Loads |
| ... easily identify which new knowledge is most valuable to us. | AQI04 | Off-Diagonal Cross Loads |
| ... take advantage of new knowledge to create products, services or working methods. | API02 | Off-Diagonal Cross Loads |

Source: Elaborated by the author

Once convergent validity was guaranteed, it was necessary to look at the internal consistency (Cronbach's alpha - CA) and composite reliability (CC) values. Both indicators are used to assess whether the sample is free from bias, or whether the responses as a whole are reliable (Bido & Da Silva, 2019). Hair Jr et al. (2014) cite that CA values above 0.60 and 0.70 are considered adequate in exploratory research and CC values of 0.70 and 0.90 are considered satisfactory. As shown in Table 5, the convergent validity of the model is confirmed.

**Table 5** – Model quality values

| | Cronbach's Alpha - CA | rho_A | Composite Reliability - CR | AVE |
|---|---|---|---|---|
| **First Order Constructs** | | | | |
| **Aqui_ind** | 0,887 | 0,888 | 0,922 | 0,747 |
| **Assim_ind** | 0,874 | 0,880 | 0,914 | 0,728 |
| **Transf_ind** | 0,809 | 0,817 | 0,875 | 0,638 |
| **Apli_ind** | 0,896 | 0,896 | 0,928 | 0,763 |
| **Affective** | 0,823 | 0,828 | 0,884 | 0,656 |
| **Socio-environmental** | 0,727 | 0,729 | 0,845 | 0,645 |
| **Cognitive** | 0,734 | 0,750 | 0,833 | 0,556 |
| **Behaviour** | 0,858 | 0,868 | 0,895 | 0,590 |
| **Aqui_org** | 0,778 | 0,780 | 0,849 | 0,529 |
| **Assim_org** | 0,790 | 0,796 | 0,866 | 0,619 |
| **Transf_org** | 0,787 | 0,796 | 0,862 | 0,611 |
| **Apli_org** | 0,846 | 0,853 | 0,907 | 0,765 |
| **Second Order Constructs** | | | | |
| **ACAPorg** | 0,910 | 0,917 | 0,895 | 0,684 |
| **ACAPind** | 0,943 | 0,945 | 0,926 | 0,759 |
| **SIM** | 0,920 | 0,924 | 0,911 | 0,720 |
| **Performance** | 0,670 | 0,736 | 0,796 | 0,508 |

**Source: Research Data**

The next step required an assessment of the Discriminant Validity (DV) of the Structural Equation Model, understood as an indicator of whether the constructs or Latent Variables (LV) are independent of each other (Hair Jr et al., 2014). This assessment is carried out in two ways: Chin's criterion (1998) and Fornell and Larcker's criterion (1981). The first criterion looks at cross-loadings, so that the observed variables should have higher factor loadings on their respective latent variables (or constructs) than on others.

Table 6 shows that the factor loadings (in bold) are higher than the cross-loadings ("off-diagonal" loadings), confirming discriminant validity. In the Individual ACAP construct, some of the cross-loadings show high values, in the order of 0.65 to 0.75, which makes sense because conceptually the interpretation can be sensitive to respondents who participate in the same organization and are being addressed by homogeneous phenomena. In principle, the model has discriminant validity according to Chin's criteria (1998), even with some loadings below 0.80, but above 0.70.

**Table 6** – Cross-load values of VOs on VLs

| Variável | Aqui_org | Assim_org | Transf_org | Apli_org | Aqui_ind | Assim_ind | Transf_ind | Apli_ind | Afetiva | Socioambiental | Cognitiva | Comportamental | Desempenho |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AQO01 | **0,705** | 0,535 | 0,490 | 0,401 | 0,358 | 0,371 | 0,455 | 0,356 | 0,372 | 0,460 | 0,430 | 0,498 | 0,055 |
| AQO02 | **0,724** | 0,486 | 0,419 | 0,383 | 0,320 | 0,258 | 0,369 | 0,247 | 0,319 | 0,235 | 0,392 | 0,283 | 0,032 |
| AQO03 | **0,700** | 0,362 | 0,332 | 0,215 | 0,312 | 0,160 | 0,344 | 0,160 | 0,252 | 0,203 | 0,320 | 0,365 | 0,038 |
| AQO04 | **0,729** | 0,378 | 0,370 | 0,305 | 0,204 | 0,238 | 0,335 | 0,161 | 0,245 | 0,299 | 0,205 | 0,292 | -0,036 |
| AQO05 | **0,777** | 0,375 | 0,419 | 0,261 | 0,327 | 0,184 | 0,344 | 0,151 | 0,242 | 0,228 | 0,393 | 0,318 | -0,134 |
| ASO01 | 0,545 | **0,690** | 0,495 | 0,364 | 0,268 | 0,303 | 0,408 | 0,298 | 0,467 | 0,510 | 0,460 | 0,523 | -0,028 |
| ASO02 | 0,471 | **0,858** | 0,537 | 0,538 | 0,472 | 0,383 | 0,464 | 0,380 | 0,301 | 0,298 | 0,355 | 0,462 | 0,031 |
| ASO03 | 0,444 | **0,863** | 0,562 | 0,560 | 0,499 | 0,425 | 0,491 | 0,427 | 0,320 | 0,343 | 0,373 | 0,468 | -0,011 |
| ASO04 | 0,429 | **0,721** | 0,568 | 0,661 | 0,346 | 0,434 | 0,381 | 0,444 | 0,461 | 0,391 | 0,431 | 0,501 | -0,060 |
| TRO01 | 0,522 | 0,688 | **0,809** | 0,516 | 0,450 | 0,397 | 0,484 | 0,379 | 0,512 | 0,524 | 0,575 | 0,586 | -0,153 |
| TRO02 | 0,355 | 0,538 | **0,768** | 0,552 | 0,294 | 0,381 | 0,376 | 0,334 | 0,363 | 0,269 | 0,321 | 0,326 | -0,113 |
| TRO03 | 0,459 | 0,485 | **0,827** | 0,633 | 0,243 | 0,446 | 0,517 | 0,434 | 0,559 | 0,446 | 0,498 | 0,454 | -0,121 |
| TRO04 | 0,423 | 0,418 | **0,718** | 0,380 | 0,294 | 0,287 | 0,412 | 0,267 | 0,229 | 0,375 | 0,439 | 0,307 | -0,243 |
| APO01 | 0,327 | 0,581 | 0,564 | **0,841** | 0,283 | 0,525 | 0,420 | 0,460 | 0,438 | 0,425 | 0,441 | 0,458 | -0,025 |
| APO03 | 0,332 | 0,549 | 0,542 | **0,883** | 0,254 | 0,409 | 0,437 | 0,440 | 0,508 | 0,385 | 0,405 | 0,433 | 0,005 |
| APO05 | 0,481 | 0,650 | 0,648 | **0,898** | 0,353 | 0,521 | 0,538 | 0,544 | 0,658 | 0,500 | 0,575 | 0,553 | -0,022 |
| AQI01 | 0,334 | 0,352 | 0,309 | 0,253 | **0,878** | 0,397 | 0,567 | 0,464 | 0,070 | 0,047 | 0,338 | 0,242 | -0,065 |
| AQI02 | 0,367 | 0,406 | 0,359 | 0,261 | **0,894** | 0,421 | 0,607 | 0,540 | 0,130 | 0,154 | 0,338 | 0,327 | 0,043 |
| AQI03 | 0,396 | 0,552 | 0,436 | 0,393 | **0,838** | 0,519 | 0,631 | 0,574 | 0,295 | 0,309 | 0,457 | 0,517 | -0,004 |
| AQI05 | 0,358 | 0,439 | 0,317 | 0,267 | **0,846** | 0,468 | 0,619 | 0,548 | 0,200 | 0,192 | 0,399 | 0,357 | -0,004 |
| ASI01 | 0,334 | 0,394 | 0,407 | 0,452 | 0,392 | **0,776** | 0,490 | 0,584 | 0,495 | 0,465 | 0,395 | 0,593 | -0,055 |
| ASI02 | 0,241 | 0,413 | 0,391 | 0,516 | 0,400 | **0,894** | 0,582 | 0,596 | 0,507 | 0,395 | 0,397 | 0,459 | 0,005 |
| ASI03 | 0,328 | 0,455 | 0,421 | 0,512 | 0,508 | **0,910** | 0,643 | 0,678 | 0,443 | 0,333 | 0,431 | 0,408 | 0,090 |
| ASI04 | 0,270 | 0,423 | 0,443 | 0,418 | 0,480 | **0,826** | 0,656 | 0,635 | 0,318 | 0,294 | 0,398 | 0,347 | -0,013 |
| TRI01 | 0,315 | 0,406 | 0,445 | 0,514 | 0,452 | 0,741 | **0,743** | 0,595 | 0,535 | 0,453 | 0,474 | 0,496 | -0,013 |
| TRI02 | 0,478 | 0,393 | 0,539 | 0,431 | 0,557 | 0,536 | **0,792** | 0,631 | 0,311 | 0,322 | 0,562 | 0,361 | 0,029 |
| TRI03 | 0,440 | 0,545 | 0,449 | 0,392 | 0,709 | 0,517 | **0,880** | 0,750 | 0,333 | 0,383 | 0,518 | 0,549 | 0,009 |
| TRI04 | 0,408 | 0,420 | 0,402 | 0,375 | 0,508 | 0,433 | **0,773** | 0,524 | 0,299 | 0,331 | 0,453 | 0,485 | -0,133 |
| API01 | 0,367 | 0,474 | 0,343 | 0,466 | 0,497 | 0,672 | 0,712 | **0,813** | 0,338 | 0,351 | 0,406 | 0,425 | -0,043 |
| API03 | 0,260 | 0,420 | 0,383 | 0,493 | 0,553 | 0,597 | 0,700 | **0,903** | 0,407 | 0,399 | 0,460 | 0,450 | 0,086 |
| API04 | 0,209 | 0,371 | 0,382 | 0,420 | 0,555 | 0,597 | 0,669 | **0,878** | 0,440 | 0,369 | 0,512 | 0,445 | -0,036 |
| API05 | 0,231 | 0,466 | 0,486 | 0,550 | 0,549 | 0,690 | 0,678 | **0,895** | 0,453 | 0,405 | 0,548 | 0,410 | 0,018 |
| MDA01 | 0,276 | 0,307 | 0,353 | 0,447 | 0,110 | 0,364 | 0,287 | 0,283 | **0,766** | 0,577 | 0,530 | 0,477 | -0,069 |
| MDA03 | 0,398 | 0,520 | 0,416 | 0,560 | 0,221 | 0,480 | 0,442 | 0,464 | **0,760** | 0,497 | 0,455 | 0,535 | -0,009 |
| MDA04 | 0,340 | 0,369 | 0,496 | 0,521 | 0,139 | 0,429 | 0,387 | 0,392 | **0,879** | 0,585 | 0,566 | 0,560 | -0,074 |
| MDA05 | 0,285 | 0,393 | 0,492 | 0,477 | 0,198 | 0,391 | 0,386 | 0,384 | **0,829** | 0,454 | 0,564 | 0,584 | -0,042 |
| MDS02 | 0,260 | 0,425 | 0,478 | 0,536 | 0,125 | 0,400 | 0,358 | 0,415 | 0,679 | **0,782** | 0,515 | 0,536 | -0,021 |
| MDS03 | 0,345 | 0,331 | 0,328 | 0,362 | 0,169 | 0,386 | 0,436 | 0,369 | 0,448 | **0,809** | 0,380 | 0,388 | -0,071 |
| MDS04 | 0,372 | 0,398 | 0,431 | 0,287 | 0,211 | 0,245 | 0,338 | 0,258 | 0,412 | **0,818** | 0,467 | 0,518 | -0,061 |
| MDC01 | 0,391 | 0,335 | 0,395 | 0,372 | 0,418 | 0,348 | 0,513 | 0,427 | 0,362 | 0,331 | **0,703** | 0,446 | 0,003 |
| MDC02 | 0,361 | 0,443 | 0,577 | 0,521 | 0,238 | 0,409 | 0,479 | 0,400 | 0,647 | 0,508 | **0,822** | 0,486 | -0,144 |
| MDC04 | 0,317 | 0,349 | 0,335 | 0,347 | 0,459 | 0,362 | 0,500 | 0,485 | 0,356 | 0,366 | **0,680** | 0,381 | 0,039 |
| MDC05 | 0,384 | 0,390 | 0,429 | 0,377 | 0,275 | 0,307 | 0,414 | 0,368 | 0,535 | 0,476 | **0,770** | 0,599 | -0,063 |
| MDB01 | 0,474 | 0,586 | 0,464 | 0,386 | 0,367 | 0,331 | 0,495 | 0,357 | 0,481 | 0,503 | 0,580 | **0,825** | -0,025 |
| MDB02 | 0,498 | 0,547 | 0,450 | 0,400 | 0,305 | 0,249 | 0,398 | 0,298 | 0,475 | 0,426 | 0,488 | **0,817** | -0,017 |
| MDB03 | 0,304 | 0,367 | 0,286 | 0,320 | 0,569 | 0,367 | 0,577 | 0,478 | 0,339 | 0,265 | 0,476 | **0,605** | 0,083 |
| MDB04 | 0,318 | 0,392 | 0,427 | 0,471 | 0,337 | 0,648 | 0,531 | 0,467 | 0,511 | 0,430 | 0,478 | **0,719** | 0,097 |
| MDB05 | 0,267 | 0,426 | 0,429 | 0,417 | 0,170 | 0,377 | 0,347 | 0,299 | 0,557 | 0,563 | 0,449 | **0,824** | -0,001 |
| MDB06 | 0,382 | 0,514 | 0,438 | 0,540 | 0,277 | 0,452 | 0,441 | 0,424 | 0,665 | 0,557 | 0,526 | **0,793** | 0,062 |
| CREDITO | 0,026 | -0,015 | -0,174 | -0,066 | -0,013 | -0,052 | -0,030 | -0,051 | -0,056 | -0,069 | -0,083 | 0,080 | **0,800** |
| DAT03 | -0,023 | -0,030 | -0,114 | -0,019 | 0,015 | -0,012 | -0,049 | 0,015 | -0,040 | -0,024 | -0,084 | 0,021 | **0,865** |
| DCL02 | 0,003 | -0,044 | -0,088 | 0,057 | 0,022 | 0,126 | -0,065 | 0,041 | -0,010 | -0,002 | -0,003 | -0,146 | **0,434** |
| SEGUR | -0,041 | 0,013 | -0,171 | 0,035 | -0,032 | 0,060 | 0,044 | 0,056 | -0,054 | -0,059 | 0,013 | 0,054 | **0,675** |

Source: Research Data

The Fornell and Larcker (1981) criterion compares the square roots of the AVE values for each latent variable with the Pearson correlations between the constructs. The square roots of the AVEs must be greater than the correlations between the constructs. Table 7 shows that the correlations between the VL are lower than the square root of the AVE, confirming discriminant validity according to the criteria of Fornell and Larcker (1981).

**Table 7** – Correlation matrix, Fornell and Larcker criterion

| Constructos de 1ª Ordem | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Afetiva | **0,810** | | | | | | | | | | | | |
| 2 Apli_ind | 0,470 | **0,873** | | | | | | | | | | | |
| 3 Apli_org | 0,618 | 0,554 | **0,875** | | | | | | | | | | |
| 4 Aqui_ind | 0,205 | 0,617 | 0,342 | **0,864** | | | | | | | | | |
| 5 Aqui_org | 0,400 | 0,305 | 0,440 | 0,422 | **0,727** | | | | | | | | |
| 6 Assim_ind | 0,513 | 0,732 | 0,556 | 0,524 | 0,343 | **0,853** | | | | | | | |
| 7 Assim_org | 0,488 | 0,496 | 0,681 | 0,510 | 0,597 | 0,495 | **0,787** | | | | | | |
| 8 Comportamental | 0,666 | 0,495 | 0,554 | 0,422 | 0,488 | 0,523 | 0,619 | **0,768** | | | | | |
| 9 Congnitiva | 0,654 | 0,552 | 0,547 | 0,445 | 0,486 | 0,475 | 0,512 | 0,649 | **0,746** | | | | |
| 10 Desempenho | -0,061 | 0,008 | -0,016 | -0,008 | -0,010 | 0,012 | -0,021 | 0,039 | -0,067 | **0,713** | | | |
| 11 Socioambiental | 0,652 | 0,437 | 0,503 | 0,207 | 0,402 | 0,430 | 0,485 | 0,607 | 0,573 | -0,061 | **0,803** | | |
| 12 Transf_ind | 0,463 | 0,790 | 0,535 | 0,703 | 0,513 | 0,699 | 0,556 | 0,593 | 0,629 | -0,029 | 0,467 | **0,799** | |
| 13 Transf_org | 0,545 | 0,457 | 0,672 | 0,413 | 0,565 | 0,487 | 0,689 | 0,546 | 0,592 | -0,196 | 0,522 | 0,575 | **0,782** |
| Constructos do Modelo Est | 1 | 2 | 3 | | | | | | | | | | |
| 1 ACAPind | **0,871** | | | | | | | | | | | | |
| 2 ACAPorg | 0,646 | **0,827** | | | | | | | | | | | |
| 3 MIS | 0,631 | 0,73 | **0,849** | | | | | | | | | | |

Source: Research Data

Once Discriminant Validity has been guaranteed, the structural model is evaluated. Initially, Pearson's coefficient of determination ($R^2$) was analyzed to assess the portion of the variance of the endogenous variables that is explained by the structural model, indicating the quality of the adjusted model. Following Cohen's (1988) proposal for the social and behavioral sciences, it is suggested that $R^2$ = 2% be classified as a small effect, $R^2$=13% as a medium effect and $R^2$=26% as a large effect (Bido & Da Silva, 2019).

Figure 5 shows the final measurement model made up of the latent constructs and the observed variables, as well as their respective measurement indicators.
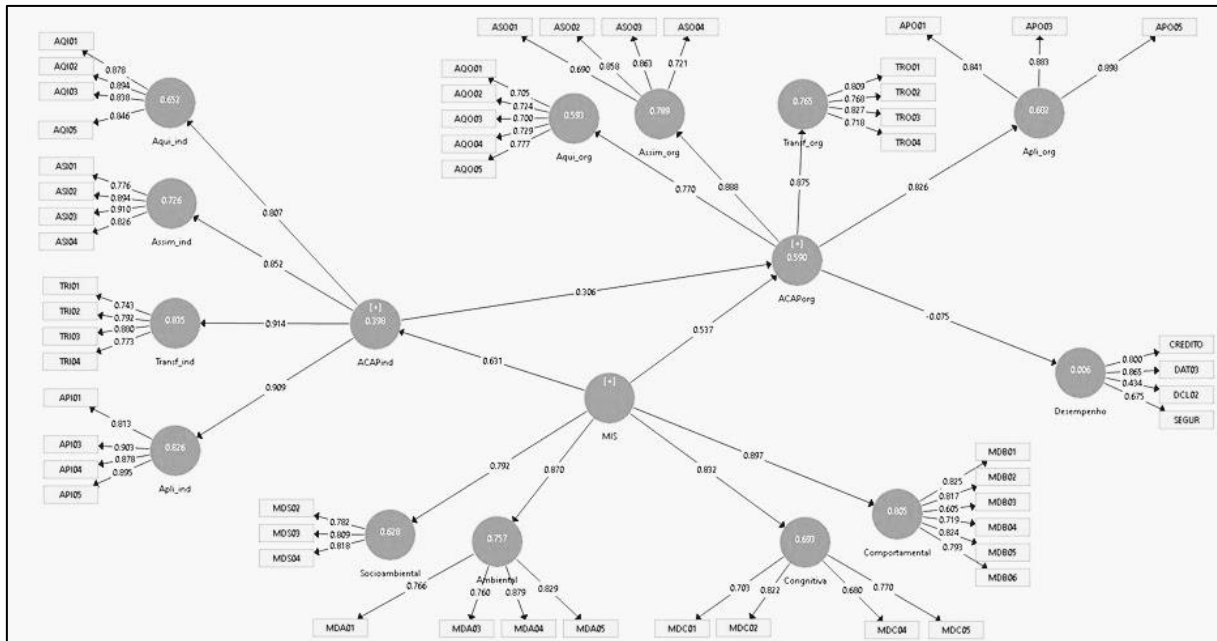
The data in Table 8 shows that 59% of the variance in the Organizational ACAP (ACAPorg) data is explained by the Social Integration Mechanisms (SIM) and Individual Absorptive Capacity (ACAPind) constructs. In addition, 39.80% of the variance in ACAPind data is explained by SIM and 0.60% of the variance in performance is explained by ACAPorg. It can be seen that two explanations can be considered large and one small.

**Table 8** – Explanatory variance - Pearson coefficients (R²)

| Endogenous Constructs | R² |
|---|---|
| **ACAPind** | 0,398 |
| **ACAPorg** | 0,590 |
| **Performance** | 0,006 |

Source: Research Data

As these are correlations and linear regressions, it should be assessed whether these relationships are significant (p-value ≤ 0.05), if p-value > 0.05 the relationship is not significant (Ringle et al., 2014). The SmartPLS software calculates the t-test values and not the p-values, so Ringle et al. (2014, p. 68) justifies that "it should be interpreted that for high degrees of freedom, values above 1.96 correspond to p-values ≤ 0.05". Figure 6 shows the results of the tests.
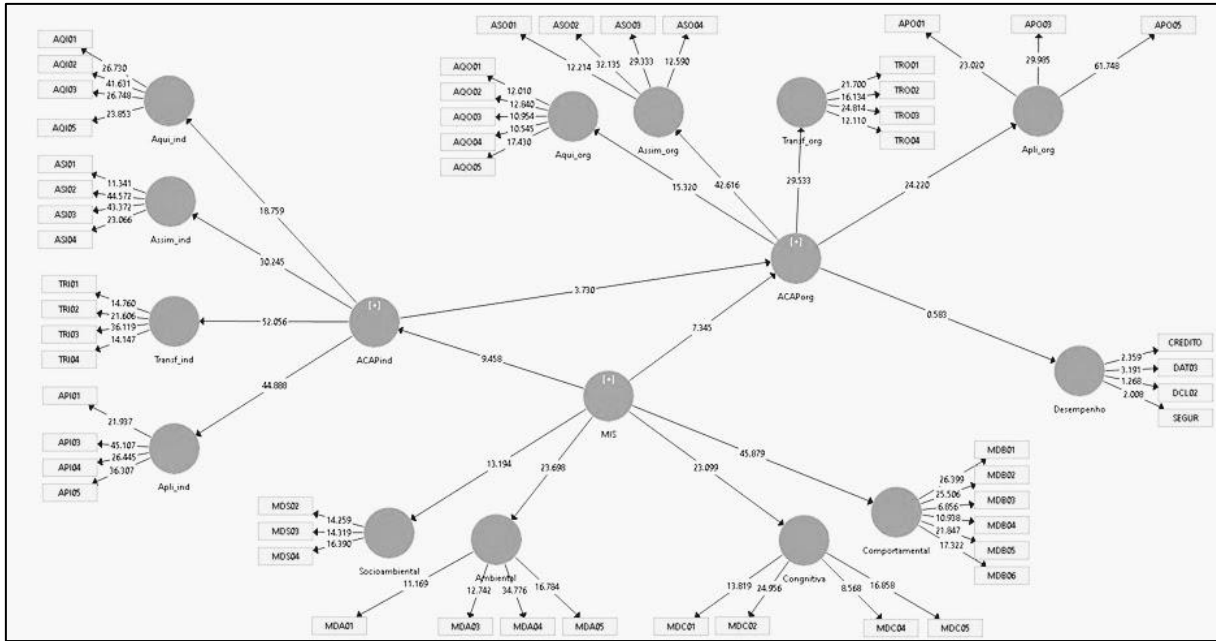
Next, the model's quality of fit is assessed: Relevance or Predictive Validity (Q²) or Stone-Geisser indicator. This measure is an indicator of the model's predictive relevance, accurately calculating the data points of indicators in reflective measurement models of endogenous constructs (accuracy of the adjusted model). In the structural model, Q² values greater than zero for a given endogenous reflective latent variable indicate the predictive relevance of the path model for this specific construct (Hair Jr et al., 2014).

Table 9 shows the Q² values for the constructs, demonstrating the predictive relevance of the Individual and Organizational ACAP constructs and the non-predictive relevance of the explanation of the Performance construct.

**Table 9** – Predictive relevance

| Construct | SSO | SSE | Q² (=1-SSE/SSO) |
|---|---|---|---|
| ACAPind | 1.920.000 | 1.515.648 | 0.211 |
| ACAPorg | 1.920.000 | 1.448.543 | 0.246 |
| Performance | 480.000 | 486.144 | -0.013 |

Source: Research Data

Once the statistical tests have been completed, we move on to discuss the results of the hypotheses investigated, illustrated in Table 12. In the first case, the structural coefficient or path coefficient indicates how much one construct relates to another. According to Hair et al. (2014), values close to 1.0 indicate very strong positive

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relationships between two constructs and values close to -1.0 indicate very low negative relationships. Values close to 0.0 also indicate weak relationships.

Above all, to test whether the structural coefficient is significant or not, the causal relationship between two latent variables must be tested. To do this, the student's t-test is used, whose values equal to or greater than 1.96 are considered significant within a margin of error of 5% or 0.05 (Hair Jr et al., 2014). Table 10 shows that three of the four relationships analyzed empirically in the context of this research were accepted based on the parameters applied. The relationship between Organizational ACAP and Performance is not explained by the model.

**Table 10**– Hypothesis test for significance of structural relationships

| Hipótese | Relação | Coef. Estrutural | Desvio Padrão | Test-t | p-valor | Resultado | f² | R² | VIF |
|----------|---------|-----------------|---------------|--------|---------|-----------|-----|-----|-----|
| H1(+) | ACAPind -> ACAPorg | 0,306 | 0,082 | 3,730 | 0 | Suportado | 0,138 | 0,59 | 1.662 |
| H2(+) | MIS -> ACAPind | 0,631 | 0,067 | 9,458 | 0 | Suportado | 0,662 | 0,40 | 1.000 |
| H3(+) | MIS -> ACAPorg | 0,537 | 0,073 | 7,345 | 0 | Suportado | 0,424 | 0,59 | 1.662 |
| H4(+) | ACAPorg -> Desempenho | -0,075 | 0,128 | 0,583 | 0,56 | Não suportado | 0,006 | 0,01 | 1.000 |

Note: p-Values estimated by bootstrapping with 5000 repetitions

Source: Research Data

In this study, Hypothesis 1 (H1+) predicted that individual ACAP has a direct and positive relationship with organizational ACAP, and the hypothesis test showed a structural coefficient of 0.306 significant at a 0.05 margin of error, so that these values led to the support of this Hypothesis. Hypothesis 2 (H2+) predicted that MIS has a direct and positive relationship with Individual ACAP and the result of the hypothesis test showed a structural coefficient of 0.631 significant at a 0.05 margin of error, which supports the proposed Hypothesis.

The prediction of Hypothesis 3 (H3+) is that MIS has a direct and positive relationship with Organizational ACAP, the results of the structural coefficient tests show 0.537 which is significant at 0.05 margin of error, supporting this Hypothesis. Hypothesis 4 (H4+) predicted a direct and positive relationship between Organizational ACAP and Performance, with the results of the structural coefficient of -0.075 not significant at 0.05, not supporting the proposed Hypothesis.

Among the relationships in the model, it is worth highlighting the strongest between Social Integration Mechanisms (SIM) and Individual Absorptive Capacity (ACAPind), Hypothesis 2, and then the relationship between Social Integration Mechanisms (SIM) and Organizational Absorptive Capacity (ACAPorg), Hypothesis 3,

which show that social integration practices and channels are significant to the development of capacities at an individual and organizational level.

Hypothesis 1 shows that efforts to develop individual capabilities have a significant relationship with the development of capabilities at the organizational level. The relationship found to be non-significant for the model is the relationship between Organizational ACAP and the Performance of Banking Agencies, which should be further studied theoretically.

## 6 DISCUSSIONS OF RESULTS

We begin the discussion of Hypothesis "H1" on the relationship between Individual and Organizational Absorptive Capacity.

- H1 – Individual ACAP has a positive impact on organizational ACAP.

- **Supported**

ACAP, with its complexity in the construct and its multidimensional, multilevel, and path-dependent characteristics, makes the causal relationships between individual and organizational factors non-direct (Löwik, 2013). The actions of individuals determine organizational ACAP, but organizational ACAP also affects the knowledge and actions of individuals (Cohen & Levinthal, 1990; Zhao et al., 2009).

The results lead to the theoretical deepening in which during the Transformation of the individual ACAP, new ideas are generated and assimilated into the Organizational ACAP, then the new knowledge is incorporated into work routines and can be applied by those individuals who generate ideas or by others through dissemination in the organization.

In the relationship of this Hypothesis, it is possible to observe a significant level between individual and Organizational ACAP that the actions of individuals are important for organizational ACAP that place them in a key position in the organization, where their high levels of Individual ACAP inspire the development of absorptive capacities of other individuals and the organization.

The strong relationship between the Individual and Organizational ACAP constructs forms a condition to support findings by Martinkenaite and Breunig (2016) who clarify that ACAP at the individual and organizational level interact through a set

of combinative capabilities that support behaviors and facilitate the interaction between tacit and explicit knowledge at the micro and macro levels for all dimensions of absorptive capacity.

Among the individual factors that contribute to the Organization's ACAP, the Transformation and Application dimensions of knowledge stand out, helping to explain the shortcomings of Lowik et al. (2012) and Tian and Soo (2014) in identifying individual characteristics that contribute to the Organization's ACAP.

This result differs from that of Ojo et al. (2016), who identified important characteristics in the dimensions of knowledge acquisition and assimilation at the Individual level. However, as a contribution to the development of the literature and to management practices in the development of Individual and Organizational ACAP, the dimensions should not be excluded or segregated, but rather structured in a complementary way to improve the four dimensions and their integration between the Individual and Organizational levels.

Thus, characteristics of Individual ACAP were identified, such as those of the Transformation and Application dimension, with stronger relationships in the sample that contribute to the study gaps of Lowik et al. (2017), deepening the interactions between Individual and Organizational ACAP with individuals in managerial functions, and Yao and Chang (2017) with individual factors that enhance Organizational ACAP.

According to Bouguerra, Mellahi, Glaister, Sadeghi, Temouri and Tatoglu (2022) the Turkish banking sector for various reasons, we argue that the characteristics of the sector provide a particularly fertile context for studying the process of learning and innovation (Ayden et al., 2020). Thus, the World Bank (2021) shows that Turkey is the 17th largest economy in the world and the largest in the Middle East and is a favorite target among emerging market investors. With its dynamic and growing economy linking Asia to Europe, Turkey represents a leading emerging economy seeking innovation and learning opportunities (Tatoglu et al., 2020). This environment has forced Turkish banks to rapidly increase their knowledge absorption capacity. The banking sector has provided the financial basis for Turkey's remarkable growth and resilience in recent years.

In addition, the sector plays a significant role in promoting innovation, offering new products, and supporting other industries such as agriculture, construction, and manufacturing (Wigley and Çağatay, 2018).

The next two hypotheses relate the Social Integration Mechanisms (SIM) and their relationship with Individual and Organizational ACAP.

- H2 – Social integration mechanisms positively influence Individual ACAP – **Supported**
- H3 – Social integration mechanisms positively influence organizational ACAP – **Supported**

In the development of this research, MIS are positioned in the model as motivators of the process that allow for the reduction of barriers and support in the sharing of information with the aim of increasing the efficiency of capabilities (Zahra & George, 2002) and can positively or negatively influence the ACAP process in all its dimensions (Todorova & Durisin, 2007).

The model in this study follows the proposal by Von Briel et al. (2019) in relation to MIS. They have four interrelated dimensions, socio-environmental, affective, cognitive, and behavioral, which can mitigate the challenges to incorporating distant, tacit and complex knowledge. In a single theoretical model, the results represent significant levels in the model's structural relationship.

The way in which the SIM are assessed allows us to carry out a consolidated analysis of their influence on the development of the Individual and Organizational ACAP because each of the dimensions incorporates SIM with an influence on the Individual or the Organization.

SIM act in a complementary way between individual and collective factors to create Organizational ACAP. Thus, while individual ACAP is indispensable, organizational integration mechanisms are also necessary to develop and drive organizational processes to achieve goals (Cordero & Ferreira, 2019; Lowik et al., 2016).

Relating the four MIS Dimensions to the levels of agreement in the perception of the respondents and the results in the structural model, all are perceived as relevant. For Von Briel et al. (2019) each of the dimensions supports the ACAP process with greater intensity for the absorption of distant, tacit or complex knowledge.

Individually, the SIM dimensions generate important results for the absorption of knowledge. When related to distant knowledge, the cognitive dimension helps to reduce the distance, because the more distant the new knowledge is from existing knowledge, the greater the chance that the knowledge will seem incompatible or that

there will be gaps in its representation (Von Briel et al., 2019). The cognitive dimension, which also received the lowest percentage of agreement in the respondents' perception, can be improved by encouraging task rotation practices and improving the accuracy of information for carrying out activities (Vasconcelos, Martins, Ellis, & Fontainha, 2019).

As alternatives for enhancing the assimilation of distant knowledge, SIM for sharing and learning have high levels of agreement and are important alternatives for managers. Routinization, which also has high levels of agreement, should be explored with caution because, according to Jansen et al. (2005), while it decreases the ability to acquire and assimilate new external knowledge, potential ACAP is capable of efficiently transforming new external knowledge into existing sets of tasks.

According to Von Briel et al. (2019), tacit knowledge is important for process innovation because it is uncodified, highly personal, deeply rooted in actions, procedures, routines, ideals, values, and resides in team members. It can be absorbed through mechanisms that promote socio-environmental and cognitive integration between members of the organization and its external partners.

The SIM dimension related to socio-environmental characteristics has levels of agreement above 80% and group interactions prove to be efficient, as does the use of synchronous or asynchronous virtual communication environments. The mechanism assessed with the lowest level of agreement is related to the physical environment for integration and collaboration and can be hampered by environmental conditions of social isolation, such as those provided by the Covid-19 pandemic.

As for complex knowledge, it is difficult to absorb and needs various knowledge components, but it is also necessary to understand how it interrelates and how it can be applied in new contexts (Von Briel et al., 2019). It is often distributed between individuals, groups and organizations because it is practically impossible for an individual and often even for an organization (Lane et al., 2006; Matusik & Hill, 1998).

These are the mechanisms that promote behavioral and cognitive social integration between the members of the organization and its external partners, facilitating the absorption of complex knowledge (Von Briel et al., 2019). Socialization tactics, related to training and mentoring less experienced people, show the lowest level of agreement and can be improved by managerial actions, as can group interactions and sharing opinions for decision-making and problem-solving.

Mechanisms that promote affective social integration among organizational members positively influence all stages of knowledge absorption (Von Briel et al., 2019). The dimension is important for recognizing and assimilating valuable knowledge and increases the depth and efficiency of problem-solving, because individuals in a positive mental state tend to go beyond the demands of the job, integrate more information and generate valuable new combinations of relevant information and tacit knowledge (Chirico & Salvato, 2016; Granovetter, 1973; Isen, 2001).

The results obtained for the Affective Dimension are strong when related to sharing experiences of new knowledge and learning from mistakes to improve efficiency. These results are important for tacit knowledge, according to research by Valentim et al. (2016) when seeking to understand management practices to develop Organizational ACAP.

Also in the Affective Dimension, connectivity between employees is strongly related to the Dimension with consistent results and is important for the acquisition and assimilation of knowledge, as proposed by Jansen et al. (2005).

On the other hand, one of the characteristics that managers should monitor in the Affective Dimension is the level of affinity between team members, which according to Granovetter's (1973) "strength of weak ties" theory suggests that the stronger the ties between members of a group, the less they tend to disagree with each other. The condition can generate a negative moderation of ACAP in the Performance or Behavioral dimension because the high level of trust can make partners feel so complacent that they are unable to challenge each other's propositions (Benhayoun et al., 2021; Kotabe et al., 2011).

This Affective dimension of SIM receives high levels of agreement and creates relationships of connectivity and sharing of experiences that enhance the environment for absorbing distant, tacit or complex knowledge.

Boosting the results of SIM for the development of capabilities is directly related to the individual's practice and knowledge in using the mechanism, for example: customer relations using synchronous communication, instant messaging or telephone calls is more effective when the individual masters the technique and appropriate behavior to carry it out. Therefore, the organization must be prepared to guide and train its employees in carrying out the activity, through training or guidance manuals (Elidjen, Pertiwi, Mursitama, & Beng, 2022).

Given the findings and the importance of SIM-related resources in their dimensions, it is important for the organization to pay attention to developing and improving strategies for using, managing, and monitoring the effectiveness of resources.

The next hypothesis relates Organizational ACAP to Agency performance.

- H4 – Organizational ACAP has a positive impact on agency performance.

- – **Not supported.**

The literature places absorptive capacity as an important element in economic performance and proposes efforts to increase the level of Organizational ACAP to raise performance levels and promote the generation of sustainable competitive advantage (Daspit et al., 2019; Kim & Lee, 2018; Li et al., 2009; Ndiege et al., 2012; Zahra & George, 2002).

High levels of Organizational ACAP support a company's long-term success and survival, with a direct and positive impact on performance (Cenamor et al., 2019; Engelman & Schreiber, 2018), This research reveals that Organizational ACAP has no supported relationship with the performance of bank branches, with the model's structural coefficient ratio of -0.075. However, this result does not invalidate or challenge any previous study, but actually draws attention to some paths to be considered.

In the study by Jansen et al. (2005) on companies in the European Financial Industry, performance data was evaluated over a three-year period and the performance measures did not necessarily increase their performance in dynamic environments but improved their performance by increasing their potential absorption capacity. The studies by Carmona et al. (2015), on value generation through ACAP in the Spanish Financial Industry, propose a complex performance construct considering benefits and sacrifices perceived by customers to build a value relationship and generate positive effects that are confirmed with high levels of Organizational ACAP, with different indicators from this dissertation.

Van Den Bosch et al. (1999) proposed that when the knowledge environment is turbulent, companies tend to develop Organizational ACAP aimed at improving processes with low efficiency, broad scope and a lot of flexibility. When the knowledge environment is stable, companies tend to develop Organizational ACAP aimed at

developing new products, with high efficiency, restricted scope and little flexibility (Van Den Bosch et al., 1999; Volberda et al., 2010).

In this dissertation, performance is evaluated over a six-month period, in an industry with complex levels of regulation and in a period with social and economic restrictions generated by the COVID-19 pandemic, which raises some relevant considerations that will be debated in parallel with the theory.

The Brazilian financial industry is highly regulated, and the levels of corporate governance generate a reasonable complexity of tasks, a fact that results in the need for more integration of the company's internal structure and the ability to manage knowledge flows that may not be as efficient in some contexts or scenarios (Weigelt & Miller, 2013).

The efficiency of structural integration and knowledge management is being tested by the competition between traditional institutions and new competitors through PIX, open banking, fintechs, portability of salaries or loans and financing and customer access to new products and market players in virtual structures.

In addition, the environment generated by the COVID-19 pandemic, when the traditional financial system was activated with public policies to deal with it, customers had their activities affected by measures restricting their operations and the population lost purchasing power, creating uncertainty about their ability to pay their commitments. At lhe same time, as a way of protecting their employees, bank branches soon had to adopt home offices for risk groups.

At this point it is worth mentioning the theoretical proposal of the Turbulent Environment, which to characterize it we can use the definition of Adesi et al. (2019, p. 792), who define the Turbulent Environment as: "the existence of high levels of uncertainty, unpredictability, volatility of demand and changes in growth conditions within an industry". These environments challenge key assumptions of traditional strategic planning, making it necessary to re-evaluate many management concepts and tools (Mufudza, 2019).

In a turbulent environment, the literature still indicates the need for progress, but some authors such as Kohlbacher et al. (2013) attribute ACAP to the condition for the organization to reconfigure the value of its resources. In the studies by Li et al. (2020), in environments under technological turbulence, the benefits of ACAP on new product performance diminish and managers must use managerial MIS to mitigate the effect of turbulence.

Among the authors who study ACAP in turbulent environments, some considerations by Lichtenthaler (2016) justify the result of hypothesis 4. Firstly, the perishability of knowledge in which new scenarios due to regulatory change and the conditions generated by the COVID-19 pandemic mean that much of the existing stock of knowledge deteriorates, requiring new efforts to acquire, assimilate and transform knowledge in order to generate results.

As a second relevant consideration by Lichtenthaler (2016), diversified and complex companies may have high levels of ACAP in some fields, but in others it may be shallow. Finally, organizational structures and internal policies can complicate intra-organizational knowledge sharing, limiting potential contributions to other units or the absorptive capacity of strategic units (Lichtenthaler, 2016).

Considerations related to the profile of bank branches and the high levels of Individual ACAP achieved are also important for discussing the significance of Organizational ACAP in relation to Performance. The formation of teams with high levels of Individual ACAP is relevant to the result of the levels of Organizational ACAP, as already discussed by Huang et al. (2018) and Mason et al. (2020). Thus, the result achieved by a sample with these characteristics generates high Organizational ACAP results, and the expected Performance is of similar levels.

Thus, the hypothesis not supported in the research becomes relevant for the construction of the theory of Knowledge Absorption Capacity for the generation of performance in the turbulent market environment and by the COVID-19 Pandemic.

For financial institutions, the improvement of ACAP and its MIS become relevant for integrating the structure and managing the flow of new knowledge for the development of new strategies that can improve competitive advantage and generate results.

## 6 CONCLUSIONS

In order to find answers to the research question and achieve the defined objectives, the characteristics of the population of bank branches are controlled, with the same standard of service, structure, and parameters for measuring results.

After data collection and the first analyses of descriptive statistics, the first results show a new peculiar and important feature of the study, in which the theoretical

constructs can be evaluated in the same industry, with units observed with similar characteristics of physical structure, strategic objectives and demographic similarities of the respondents, allowing a better understanding of the phenomenon of interest by controlling the effects of the independent variables on the dependent variables.

In general, it can be seen that high levels of individual ACAP support the development of high organizational ACAP and that MIS related to socio-environmental, affective, cognitive and organizational resources generate positive effects on individual and organizational ACAP. In terms of performance, organizational ACAP has conditions that are not perceived as differentiating performance in the short term, in turbulent environmental conditions and between agencies with similar characteristics.

By deepening the results of the first theoretical construct, individual ACAP had a positive impact on organizational ACAP, making it possible to answer the gaps in the literature left by Lowik et al. (2017) and Yao and Chang (2017) explaining that as important as the individual's ability to acquire and assimilate external knowledge, is the ability to transform the knowledge assimilated by the Organization into actions and practices in order to apply and seek results.

By identifying the relationship between MIS and Individual and Organizational ACAP, it is possible to fill important gaps proposed by Yao and Chang (2017) and Von Briel et al. (2019) to identify the SIM that enhance two levels of ACAP, both at the individual and organizational levels. In this way, the results obtained with the deepening of MIS in the socio-environmental, affective, cognitive, and behavioral dimensions provide the current literature that the constructs are complementary and not mutually exclusive for the development of Individual and Organizational ACAP (Cuervo-Cazurra, & Rui, 2017). The dimensions of SIM have the ability to analyze interactions in close or distant relationships, the same environment, or the individual and collective relationship with strategic, tactical, support or operational organizational structures for the development of strategy.

The result creates a commitment to develop actions for those involved at different hierarchical levels in the financial institution, at strategic, tactical, support and operational levels.

The results obtained in the Socio-Environmental Dimension, in terms of the characteristics of physical space, merit further study with the strategic and support units responsible for architectural standards and adapting branch layouts to facilitate the integration of environments.

Organizational ACAP did not find statistical support to explain the performance of bank branches in the evaluated construct, this result reinforces the study that the relationship between Organizational ACAP and Performance is influenced by individual characteristics of the organization and the environment. The results achieved in the study contribute to Cassol et al. (2019) and Ramayah et al. (2020) when they draw attention to the relevance of the industry's environmental conditions at market or social regulation levels, and Organizational ACAP, in addition to its importance for performance levels, is also relevant in the search for opportunities to survive and adapt in adverse situations, such as the health restrictions on operation caused by the COVID-19 Pandemic.

In response to the research question, it can be seen that Individual ACAP influences organizational ACAP, and that Social Integration Mechanisms have a positive effect on the development of ACAP at the Individual and Organizational levels, while the effect of Organizational ACAP on the performance of bank branches is not perceived in the short term.

Therefore, this study contributes to the discussion on the multilevel characteristics of ACAP and its Social Integration Mechanisms, in the organizational context of financial institutions and large companies, with several insights to understand the effect of practices and routines that can develop ACAP in Organizations (Sahin, Tatoğlu, Mert, Kaplan, & Golgeci, 2022).

## 7 LIMITATIONS AND FUTURE RECOMMENDATIONS

This research had some limitations, which consist of the fact that this study was carried out in just one financial institution and one specific banking service segment. It is therefore recommended that the study be extended to other segments of service specialization and/or to a group of financial institutions. Another point to note is that only branch general managers were included in the research population; further studies could extend this to the perception of their subordinates and superiors in the hierarchy, with the aim of gaining a broad view of perceptions of the same construct.

The research was carried out at a unique time and in turbulent environmental conditions for the sector studied, so that further longitudinal studies could evaluate the development of capabilities and the performance behavior of bank branches. With this,

new theoretical perspectives can be built to clarify the significant relationship or not of Organizational ACAP on Performance after overcoming this moment, as well as the consequences for the organization's performance over time.

There was an opportunity to expand knowledge about absorptive capacity in financial institutions in Brazil and, additionally, to expand knowledge about social integration mechanisms in dynamic environments (Aldrich et al., 2015; Cepeda-Carrion et al., 2016; Cotes & Ugarte, 2019), based on recent studies on social integration mechanisms (Cappellari et al., 2019; Lizarelli et al., 2019; Lowik et al., 2017; Picoli & Takahashi, 2016; Von Briel et al., 2019).

Another indication for future research is that the organizational culture developed over decades of working at managerial levels is filled by experienced professionals trained in the institution itself. Therefore, in order to better understand how these professionals develop their Individual ACAP, we propose investigating the development of capabilities over time.

As for the step of analyzing the Social Integration Mechanisms (SIM) in the socio-environmental, affective, cognitive, and behavioral dimensions, this study selected a limited number of those already identified in the literature. This limitation may interfere with the results, and it is desirable that future studies can use exploratory methods on each of the dimensions to find further explanations, including by other areas of knowledge such as architecture, technology, communication, people management or the various areas of applied social sciences.

Future studies could also be developed with the aim of associating each of the dimensions of social integration mechanisms with individual and organizational absorptive capacities. Also, to build a relationship between each of the dimensions of the three constructs in order to explore the potential for leveraging knowledge through social integration mechanisms.

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