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Dias Jordão, Ricardo Vinícius; Teixeira Melo, Victor Luiz; Mafra Pereira, Frederico Cesar;  
Baroni de Carvalho, Rodrigo

Intellectual capital in mergers and acquisitions: a case study in a world-class financial  
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## Finance and Accounting

## Intellectual capital in mergers and acquisitions: a case study in a world-class financial institution

*Capital intelectual em fusões & aquisições: um estudo de caso em uma instituição financeira de classe mundial**Capital intelectual en fusiones y adquisiciones: un estudio de caso en una institución financiera de clase mundial*Ricardo Vinícius Dias Jordão<sup>a,b,c,\*</sup>, Victor Luiz Teixeira Melo<sup>a</sup>, Frederico Cesar Mafra Pereira<sup>a</sup>, Rodrigo Baroni de Carvalho<sup>d</sup><sup>a</sup> FPL Educacional, Pedro Leopoldo/MG, Brazil<sup>b</sup> Center for Advanced Studies in Management and Economics (UE), Évora, Portugal<sup>c</sup> Swiss Management Center, Zurich, Switzerland<sup>d</sup> Pontifícia Universidade Católica de Minas Gerais, Belo Horizonte/MG, Brazil

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**Abstract**

The objective of the research described in this paper was to analyse the implications of the merger between Itaú and Unibanco banks on the Intellectual Capital (IC) of the Itaú Unibanco S/A Bank. The methodology comprised a qualitative and quantitative case study, in a descriptive approach, based on interviews (formal and informal) and questionnaires applied to 225 top managers (directors, superintendents, regional managers and commercial general managers) originated from these two banks. The research was complemented with direct observation and documental analysis. The following results were found after the merger: (i) improvements were noted in all analysed indicators on the constituent elements of the IC (human capital, structural capital and relational capital), (ii) Itaú Unibanco S/A Bank created, developed and acquired knowledge and know-how, and (iii) these factors influenced corporative IC, supporting improvements in processes, systems, technology, brands, products and mainly in people, corporate image and the relationship of the company with the market, promoting significant financial results.

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**Keywords:** Strategy; Mergers and acquisitions; Knowledge management; Intellectual capital; Value generation

**Resumo**

O objetivo da pesquisa descrita neste artigo foi analisar as implicações da fusão entre os bancos Itaú e Unibanco no capital intelectual (CI) do Banco Itaú Unibanco S/A. A metodologia utilizada foi um estudo de caso qualitativo e quantitativo, em uma abordagem descritiva, baseada em entrevistas (formais e informais) e questionários aplicados a 225 gestores de alto nível (diretores, superintendentes, gerentes regionais e gerentes gerais comerciais) oriundos desses dois bancos, sendo enriquecida com observação direta e análise documental. Os resultados indicaram que após a fusão: (i) melhorias foram observadas em todos os indicadores analisados quanto aos elementos constitutivos do CI (capital humano, capital estrutural e capital relacional); (ii) o Banco Itaú Unibanco S/A criou, desenvolveu e adquiriu conhecimentos e *know-how*; e (iii) que esses fatores

\* Corresponding author at: Avenida Lincoln Diogo Viana, 830 – CEP 33600-000 – Pedro Leopoldo/MG, Brazil.

E-mail: [jordaoconsultor@yahoo.com.br](mailto:jordaoconsultor@yahoo.com.br) (R.V. Jordão).

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influenciaram o CI do banco, promovendo melhorias em processos, sistemas, tecnologia, marcas, produtos e, principalmente, em pessoas, imagem corporativa e relacionamentos da empresa com o mercado, ajudando-o a alcançar significativos resultados financeiros.

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*Palavras-chave:* Estratégias corporativas; Fusões e aquisições; Capital intelectual; Gestão do conhecimento; Geração de valor

## Resumen

El objetivo en este estudio es analizar las implicaciones de la fusión entre los bancos Itaú y Unibanco en el capital intelectual (CI) del Banco Itaú Unibanco S/A. Se utiliza la metodología de estudio cualitativo y cuantitativo, en un enfoque descriptivo, con base en entrevistas (formales e informales) y cuestionarios realizados a 225 ejecutivos de alto nivel (directores, superintendentes, gerentes regionales y gerentes generales comerciales) procedentes de estos dos bancos. Además, la observación directa y el análisis de documentos enriquecen el estudio. Los resultados indican que después de la fusión: (i) se observa mejora en todos los indicadores analizados en cuanto a los elementos constitutivos del CI (capital humano, capital estructural y capital relacional); (ii) el banco Itaú Unibanco S/A ha logrado crear, desarrollar y adquirir conocimientos y *know-how*; y (iii) que estos factores influyen en el CI del banco y promueven mejoras en procesos, sistemas, tecnología, marcas, productos y sobre todo en las personas, en la imagen corporativa y en las relaciones comerciales con el mercado, lo que lo ayuda a alcanzar resultados financieros significativos. © 2017 Departamento de Administração, Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo – FEA/USP. Publicado por Elsevier Editora Ltda. Este es un artículo Open Access bajo la licencia CC BY (<http://creativecommons.org/licenses/by/4.0/>).

*Palabras clave:* Estrategias corporativas; Fusiones y adquisiciones; Capital intelectual; Gestión del conocimiento; Creación de valor

## Introduction

The theme of mergers and acquisitions (M&A) has aroused great interest in the academic and business environment, above all because of the very large amounts involved, the controversy produced and the growing intensity with which this strategic option has been used in recent years in Brazil and worldwide (Costa Jr. & Martins, 2008; Jordão & Souza, 2013; Vieru & Rivard, 2015). In spite of the increase in the volume and relevance of M&A operations, there are still gaps in the research that need to be addressed. Divergences exist between the results expected and those effectively achieved with these operations (Child, Faulkner, & Pitkethly, 2001; Jordão & Souza, 2013; Jordão, Souza, & Avelar, 2014), especially through the loss of knowledge (Child et al., 2001; Mayo, 2002) and intellectual capital (IC) (Freire, 2012; Freire, Spanhol, & Selig, 2014) in a large number of them. Equally, the international literature has presented a range of studies dealing with knowledge management (KM) and IC (e.g. Andreeva & Garanina, 2016; Ferenhof, Durst, Bialecki, & Selig, 2015; Jordão, Novas, Souza, & Neves, 2013; Novas, Alves, & Sousa, 2015; Verbano & Crema, 2016), these being considered themes of great importance by scholars and the market (Jordão et al., 2013; Novas et al., 2015). This is because of the capacity that knowledge assets usually possess of augmenting the value of corporations (Joia, 2000), and the recognition of IC as the main driver in company development (Andreeva & Garanina, 2016; Grimaldi, Cricelli, & Rogo, 2013; Jordão & Almeida, 2016; Jordão et al., 2013; Luthy, 1998; Mouritsen, Larsen, & Bukh, 2001; Novas et al., 2015; Verbano & Crema, 2016). This notwithstanding, the challenge of understanding the peculiarities of IC in M&A has still to be investigated in depth.

Recognizing and taking advantage of this gap, the objective of the research described in this article was to analyse the implications of the merger between the banks Unibanco and Itaú on

the intellectual capital of the Itaú-Unibanco S/A bank resulting from this process.

The justification of the research is the extent to which its results contribute to a substantial section of society, as defended by Jordão and Novas (2013) and Jordão, Pelegrini, Jordão, and Jeunon (2015). In this sense, the study is justified because, (i) it helps to fill the above-mentioned gap in the research; (ii) it collaborates towards an understanding of the creation and maintenance of knowledge in M&A (a question that concerns a large part of the business world and society) and (iii) it contributes towards the increase of the theoretical body of knowledge on the theme. Based on wide-ranging research, which mapped the state of the art on the theme, in databases and portals such as Ebsco, Proquest, Emerald, B-one, Science Direct, Scholar Google, OECD, Scielo, Redalyc, Periodicals Capes, among others, it was found that specific studies analysing the effects of mergers on IC do not exist. Nevertheless, a few studies were found that recognise the relevance of the theme and/or touch on it, such as Coff (1999), Gupta and Roos (2001), Capron and Pistre (2002), Mayo (2002) or Freire (2012), citing it as a future opportunity for investigation, but without dwelling on it, which again brings out the relevance and originality of the research.

In addition to the originality of the research, and the analysis model proposed and applied, the subject gains breadth because of the magnitude and expressiveness of the M&As (Jordão et al., 2014). The managerial challenges inherent to these operations (Child et al., 2001), have also aroused the interest of administrators and academics in the theme, who recognise the challenges of managing knowledge (cf. Vieru & Rivard, 2015) and dimensioning IC, especially in M&A, as recently demonstrated by Freire et al. (2014). As managerial implications of the research, it should be mentioned that its results can serve as benchmarking for the management and/or evaluation of IC in similar organisations and/or situations. An important question, particularly

considering the size and relevance of the organisation studied – the largest financial institution in the Southern hemisphere.

The article in question is divided into a further six sections in addition to this introduction. The second and third sections present the platform for the theoretical justification of the research, broaching the themes of KM and IC within the ambit of M&A. The fourth section presents the research methodology. The fifth presents the company and the analysis of the results. The sixth discusses them and the validation of the research pre-suppositions. Finally, in the seventh section, we produce the final considerations in the light of the proposed objective.

### **Mergers and acquisitions (M&A): motivations and challenges**

According to [Finkelstein and Cooper \(2009\)](#), the international literature on M&A is, to a certain extent, fragmentary. Field research on the strategy and the finances tends to focus on value generation mechanisms and on the determinants of performance of the operation, in particular, on the strategic and financial attributes of the combined companies. On the other hand, the approach of human resources' and organisational behaviour literature to M&A tends to focus on the aspects of post-merger integration, recognizing the role of managerial integration, of organisational cultures and social identification between the combined companies.

In the view of [Brueller, Carmeli, and Markman \(2016\)](#), companies utilise M&A to accelerate their growth, to make use of and expand valuable capacities, to access assets that are expensive to imitate (including human capital) and even to reduce competition. [Seligmann-Feitosa et al. \(2014\)](#) postulates that M&A operations are understood as competitive movements for the retention or creation of strategic resources, especially intangibles, also being perceived as a means of shortening the time for the accumulation of such resources as an alternative to internal growth (organic).

Although the number of M&A processed in Brazil and the world is large, and justified mainly by the hope of an increase in value after the union ([Child et al., 2001](#); [Jordão et al., 2014](#)), or as a lever for rapid growth in competitive markets ([Brueller et al., 2016](#); [Freire et al., 2014](#)), or a means of acquiring knowledge ([Coff, 1999](#); [Gupta & Roos, 2001](#)) and/or for obtaining synergies ([Brueller et al., 2016](#); [Lubatkin, 1983](#)), the rate of failure of these transactions after completion is high ([Barros, Souza, & Steuer, 2003](#); [Child et al., 2001](#)). The empirical results demonstrate that the majority (varying between 50% and 75%) of M&A operations was not capable of generating expected benefits for the business after its realisation ([Barros et al., 2003](#); [Child et al., 2001](#)). Several reasons account for the difficulties of value generation after the union. Among these are the erroneous identification of potential synergies, the lack of prior planning of the different phases of the operation ([Barros et al., 2003](#)), problems arising from improper evaluation and estimates, a high price paid ([Héau, 2001](#)) and, especially, the loss of IC after the union. The latter is caused by the following factors: (i) evasion of knowledge (human capital); (ii) negative impact on the image and/or on relationships with customers, suppliers

and other stakeholders (relational capital); or (iii) difficulties in integrating the structures so as to retain a part of the tacit and personal explicit knowledge, transforming it into an organisational assets (structural capital). According to [Durst and Edvardsson \(2012\)](#), KM has a profound impact on the capacity of companies to face up to the present and future business challenges and, therefore, on their survival.

According to [Brueller et al. \(2016\)](#), M&As are highly complex and disturbing and, because of that, economic value generation can become more feasible with the engagement of people management practices (including management of human capital) carried out from the start of the operation and maintained permanently. [Uhlenbruck, Hitt, and Semadeni \(2006\)](#) and [Capron and Pistre \(2002\)](#) showed that the distinctive resources, particularly intangibles, possessed by acquiring and/or acquired companies, are fundamental in the value creation process for shareholders in M&A operations. [Uhlenbruck et al. \(2006\)](#) analysed the acquisition events of Internet companies and the value creation process between acquiring/acquired companies from the same or different industries, concluding that the resources of the target company need to be relevant for the acquirers for such a process to occur. [Capron and Pistre \(2002\)](#) explored the conditions under which the acquirers would obtain abnormal returns on their M&A operations. Through an empirical study, combining an event study with a survey of the post-acquisition transfer of resources, in a sample of 101 horizontal acquisitions, the authors explored the transfer of resources subsequent to the union, finding that the acquirers did not achieve abnormal returns when only they received resources from the target companies. In contrast, these authors discovered that buyers can expect abnormal returns when they transfer their own tangible and/or intangible resources to the acquired/merged companies, such as marketing resources, innovation management, among others. [Capron and Pistre \(2002\)](#) concluded that in this way this mutual transfer could potentiate the value generation process because the complementarity process of resources and organisational capacities is associated with superior post-union performance.

Similarly to such authors, [Nair, Demirbag, and Mellahi \(2015\)](#) examined the importance of subsidiaries in the reverse transfer of knowledge, by means of a survey of multinational companies in India. The authors observed that their competences and capacities play a vital role in this process, knowledge transfer to the mother companies being affected by the level of collaboration and by the degree of complexity of the knowledge, especially in knowledge intensive and high technology companies.

According to [Schoenberg and Bowman \(2010\)](#), the challenge of value creation based on post-acquisition knowledge consists in how to preserve the organisational characteristics and, at the same time, achieve the necessary interactions to allow the sharing and transfer of the critical resources between the acquirer and the other business units and *vice versa*. The need of organisational preservation shows that the processes of change start as soon as the transaction is completed. In addition, these authors suggest that the leadership should reinforce the message that the motivation for the acquisition is to build or leverage the resources and knowledge existing in the acquired/merged company.

However, [Schoenberg and Bowman \(2010\)](#) stress that one common imperative problem frequently mentioned in the international literature in such situations consists in the practical difficulties of post union management and in the challenges of retaining human capital in these organisations, as well as the knowledge accumulated over time by the staff.

### Knowledge management and intellectual capital in mergers & acquisitions

[Gupta and Roos \(2001\)](#) observed that IC needs to be at the ‘root’ of the synergy and value generation process in M&A. These authors concluded that the strength of a navigator for the IC resides in its capacity to emphasise its own subjectivity and offer, simultaneously, an objective means of looking at the strategic utilisation of the mergers’ critical resources. A simple (open) leadership structure was introduced to analyse the potential of the synergies and the risks involved, providing facilitating conditions for post-union knowledge transfer.

[Stettner and Dovev \(2014\)](#) analysed the contribution that business acquisitions and strategic alliances make towards the processes of exploring and utilising knowledge, in relation to the internal development of competences through the study of 190 American software companies. Acquisitions were considered as alternatives for the creation and sharing of knowledge, being particularly important in the development and innovation of products, processes, systems and technologies, if the process is managed with care and in a collaborative way. The authors found that these transactions are the most immediate ways of accessing new knowledge and skills, and of extending those already existing, having concluded that there are additional challenges in the management of such processes – that can be potentiated when complemented by alliances and internal development.

[Ensign, Lin, Chreim, and Persaud \(2014\)](#), through a comparative case study, observed that elements of proximity (geographic, cognitive and organisational questions) had a substantial influence on the processes of knowledge transfer and innovation in M&A. They suggested that the impact of each of these varies, and is influenced by the type of managerial intervention or by the lack of a suitable post-merger or acquisition management.

[Vieru and Rivard \(2015\)](#) proposed a theoretical model to deal with the challenges of knowledge sharing during the post-merger integration process from the perspective of information systems. They concluded that the sharing of knowledge across organisational boundaries involves the negotiation of multiple aspects in the KM domain between people that frequently do not possess the necessary capacities to optimise this process, stressing that other aspects such as practices, standards, values and organisational symbols can, likewise, have a significant impact on such processes.

[Zheng, Wei, Zhang, and Yang \(2015\)](#) investigated the search for strategic assets in cross-border M&A through a comparative case study of Chinese multinationals. The results revealed that these multinationals seek assets complementary to activities where they already possess some dominion, but at a more advanced level, to facilitate the recognition, valuation and use of the target company’s strategic assets, organisational learning

and the capacity of knowledge absorption being essential to this process. The limited integration approach to the union was considered essential to protect these strategic assets, conferring autonomy to direct the company’s managerial team, the retention of talent and the creation of synergies.

Finally, [Brueller et al. \(2016\)](#) identified three generic types of M&A strategy – annexation and assimilation, harvesting and protecting, or binding and promoting – that can be combined with three known results of post-merger integration (absorption, preservation and symbiosis, respectively). Using a configurational perspective and the capacity-motivation-opportunity model, the authors developed a conceptual table that helps in improving human resources managerial practices, connecting them to the M&A strategies, in an attempt to maximise the results of post-merger integration.

Authors such as [Schoenberg and Bowman \(2010\)](#) perceived that a normal and imperative problem frequently pointed out in international literature in M&A situations consists in the practical difficulties of post-union management and in the challenges of retaining human capital in these organisations, as well as the knowledge accumulated by people. [Mayo \(2002\)](#) explains that some companies consider human resources M&A process costs and not as elements incorporating unique intangible assets that add value to the organisation. In this sense, the authors explain that because they are not knowledgeable about the IC management process and its elements, some people are removed from the company, taking with them acquired knowledge and experience. More than just losing this knowledge, however, there is the risk that they will be picked up and used by a competitor in the market. Curiously and paradoxically for the interests of the acquirers in obtaining knowledge related to the customers, suppliers and markets, many M&A do not manage to achieve the results projected because of problems related to the management of intangible assets ([Coff, 1999](#)). According to [Freire \(2012\)](#), the capacity of the acquiring company to eliminate integration problems is intrinsically related to people management, culture and knowledge during the whole M&A operation.

Similarly, companies need to take care when dealing with relational capital in a merger or acquisition process, when the name of the acquired company is altered, because it can lose part of its clientele or have its trade relationships affected, as the association to quality and to the reputation of the company could be shaken by the change. This occurs because the relationships that the acquired company built up over the years with suppliers, the community, government bodies, can be lost with the formation of a new company in its integration process. These ideas are in harmony with the thinking of [Freire et al. \(2014\)](#), for whom M&As have encountered difficulties in the consolidation of the intangible assets making up the IC, leading to the loss of brand value and share value of the participating companies. This is because even with the interest in acquiring knowledge related to customers, suppliers and markets, searching for synergies where the sum of the individual values would boost the result, the acquiring companies have not been able to manage the post-union integration phase. [Mayo \(2002\)](#) reveals that the problems related to structural capital in M&A, relate,



among other things, to the loss of information in documents and processes caused by the incompatibility between systems. Equally, the break in culture, where people can share the same rules, is cited by Mayo (2002) as one of the most common causes of the disappearance of a large part of the structural capital. The conflict between cultures, therefore, is cited as one of the causes of failure in M&A processes.

In objective terms, Jordão et al. (2013) understand that the conversion process of tacit into explicit knowledge described by Nonaka, Toyama, and Konno (2000), although complex, can be facilitated by organisational culture and socialisation activities. Culture helps in the integration of people in the rules of the company that promotes experiences sharing. Socialisation as well is cited as a form of conversion of individual tacit knowledge into collective tacit knowledge and, sometimes, from tacit into explicit. The argument given is that the exchange of experiences and skills, starting from the mental models of the participants, stimulates the absorption, creation and systematisation of new and old knowledge by these participants, in a manner similar to that found by Balestrin, Vargas, and Fayard (2008). In complementary fashion, Durst and Ferenhof (2014) assert that the essential is making the company managers aware of the risks that can be associated with the loss of knowledge, considering not only the obvious factors but also all the organisational and human aspects and their implications.

These questions reveal the necessity of looking critically at the role of KM in reaching the planned objectives for M&A, especially recognizing its strength and importance in the processes of creation, development, the maintenance and use of organisational knowledge, as well as in avoiding the loss of the knowledge assets making up the post-union IC. IC management is defined by Viedma (1998) as a more precise and efficient form of conducting a group of processes and systems that permits a significant increase of IC with the objective of solving problems more rapidly, with a view to promoting the attainment of the company's strategic objectives and generating competitive sustainable advantages for it. Novas et al. (2015), complement this by asserting that to manage IC requires creativity, development, renovation, integration, utilisation and maximisation of the organisation's intellectual assets. With this fulcrum, the organisation should be capacitated or capacitate itself to identify, measure, manage and control the IC.

For the purposes of the research described, the concept of IC adopted was that which contemplates the following three factors. Human capital, represented by factors such as the knowledge, experience, innovation, the culture and philosophy of the company, and the skill of the staff in carrying out day-to-day tasks, among other related elements. Structural capital, represented by factors such as the equipment, software, databases, information systems, patents and trademarks, organisational structure, among other related elements. And relational capital, represented by factors such as relationships with customers, employees, the market, the community, the government, trade unions, suppliers, among other strategic players/partners. This is because in accordance with Ferenhof et al. (2015), the concept of customer capital stressed by Stewart (1999) and Edvinsson and Malone (1997), has been substituted by a adequate approach

for embracing relationships with all interested parties, not only customers.

According to Jardon and Martos (2012), relationships create knowledge and this materialises in the IC. The relationships are established from within the company to outside it, generating value. This means that the part of IC of people, the human capital, creates the structural capital (IC internal to the organisation) and this structural capital creates the relational capital (IC with the environment). In the view of the authors mentioned, this circular relationship is responsible for the basic process of creation and expansion of the knowledge in companies. According to Novas et al. (2015), it is precisely through the combination of the constituent elements of IC (human, structural and relational capital), that organisations define and reach their objectives.

Based on a mapping of the state of the art relative to the IC question, Ferenhof et al. (2015) asserted that, in the existing literature, several models are already available that could contribute to the correct dimensioning and an adequate management of IC. However, there are still few models (or even none) for managing IC in M&A processes. However, several others exist that can be adapted to this context. One of them is for IC management and control developed originally by Jordão (2011) and augmented by Jordão et al. (2013), which facilitates this process by proposing the integration of the managerial control system (SCG) with the strategy and organisational culture. This would be done so as to include the expectation of people in the establishment of this system in such a way that the culture acts beside the knowledge management system, collaborating in the process of people's tacit knowledge conversion into individual and collective explicit knowledge, until being transformed into organisational knowledge. The central premise of this IC control model is to make the SCG of the company more efficient and effective, to measure the value of the intellectual and/or intangible assets in financial terms at the organisational level, to observe the contribution of the IC to the added market value.

The synthesis of the empirical results analysed permits us to establish: (i) the relevance of knowledge and IC in the M&A context; (ii) the need for the management of these elements during and after the process of integration, for post-union value generation to occur effectively; (iii) that the relationships between the players are essential in this process; (iv) that the human capital is the basis of the IC; (v) that the structural and relational capitals need to be worked on with care after the union; (vi) that the acquirers need to take care of all the elements of IC, controlling and managing them for their operations to be successful; and, especially, (vii) that there is an alignment between strategy and organisational culture and managerial policies for IC, facilitating and stimulating the creation, systematisation and sharing of information and knowledge, as well as the personal and organisational learning in M&A.

## Research methodology

The research described here consists of a case study of a qualitative and quantitative nature, the approach being descriptive, seeking to compare and analyse, in detail and in depth, the IC in an M&A process (Cooper & Schindler, 2006; George & Bennett,

2005). As regards the qualitative and quantitative approach, George and Bennett (2005) explained that one unique approach may not be sufficient to meet all the requirements proposed in this type of research, which, according to Jick (1979), allows a complementarity of knowledge. According to Cooper and Schindler (2006), qualitative studies permit a richness of detail and comprehension of the social significance of the problem, describing it and analysing the interaction, logic and the dynamic between the variables and the phenomenon researched. Quantitative studies, in their turn, according to Laville and Dionne (2007), are justified because they allow a greater capacity for generalisation.

According to Creswell (2003), a researcher should make use of an investigative structure that guides his research project from the identification of the epistemological stance that is the foundation of the philosophical stance of the researcher before the object of the research, to the procedures for gathering, analysing and interpreting the data. In this case, the research now described, although it uses quantitative elements and seeks objectivity and neutrality towards a determined knowledge of reality, can be considered to have an interpretative nature because of the need to know the internal causes of the phenomena relative to knowledge and intellectual capital – which are in large part subjective elements, reached in this case *via* the qualitative part of the investigation.

The case method, in accordance with Yin (1984), consists in an empirical investigation of a contemporary phenomenon in its real life context, when the limits between phenomenon and context are not clearly evident and several sources of evidence are used. The case study allows an investigation in which one preserves the holistic characteristics and significance of the happenings of real life, facilitating the realisation of inferences, and it may produce contributions for the building of theories on the theme, potentiating a more objective analysis of the relation between the variables analysed. This approach, according to Freire (2012), was considered sufficiently sensitive to capture and analyse the complexity inherent to the analysis of IC in M&A.

The unit of analysis examined was the bank Itaú-Unibanco S/A. The selection of the case was made based on five criteria. It is a relevant case, involving large companies, with operations consolidated for more than two years, which went through a merger process, and which allowed access to information. This latter is a question considered crucial by Jordão et al. (2014), being one of the greatest difficulties in this type of research, because it deals with information of a strategic nature, which many companies consider confidential.

Within the various sources of evidence existing in a comparative case study of a qualitative and quantitative nature, as a primary source of evidence, priority was given to the holding of personal interviews in depth, supported by an interview guide, associated to a questionnaire, and complemented by bibliographical, documentary research and direct observation (participant).

As the institution researched had more than four thousand branches in the whole of the Brazilian national territory in 2016, the study was limited to a sample of this population, defined

and chosen by accessibility, in accordance with Cooper and Schindler (2006). The choice of the interviewees was made by type, that is, by the information capacity that they possessed on the problem being examined, following the recommendations of Cooper and Schindler (2006) to focus on elements representative of the population with knowledge of the problem being investigated. The respondents were interviewed in the formal and informal manner between November 2014 and March 2015, making explicit their perceptions of the problem under scrutiny. Thus, in developing the research, directors, superintendents, managers of the tactical and strategic level were observed, in addition to other people that lived through the changes provoked by the merger and who were qualified to give an opinion about possible changes in KM and/or IC of the banks. It is worth mentioning that the focus on people in key positions did not restrict the study's capacity for inferences because some of the managers mentioned were in positions of operational, analytic or technical management at the time of the merger, which allowed them a mosaic of perceptions about the question before and after the operation. It is stressed that the selection of the sample, in this case, in accordance with the taxonomy proposed by Laville and Dionne (2007) is non-probabilistic, and was made by convenience, as the investigation occurred with predetermined respondents.

For the occupiers of strategic positions such as regional branch managers (GRA), commercial model managers (GMC), Uniclass service managers and company managers (GSUE), in addition to commercial superintendents and directors, interviews were held with a semi-structured guide, posing questions about the IC, its management, and the reflexes of the merger process on the IC elements. In parallel with the interviews with the bank's strategic, tactical and operational level managers, questionnaires were applied to commercial general managers from the two macro-regions of the bank of the five existing in the state of Minas Gerais, these also being selected by accessibility. In view of the selection of the regions utilised in the research, the population for the application of the questionnaires was considered to be the 215 branches of the regions of Ipatinga, Governador Valadares, Barbacena, Ouro Preto and the Belo Horizonte metropolitan region.

Before the data collection, an e-mail was sent requesting authorisation from the superintendents of the two regions involved in carrying out the research, to achieve greater security and transparency in the process, as one of the researchers is an employee of the organisation, being obliged to follow the norms and rules laid out in internal circulars. To test the suitability of the questionnaire, to increase its reliability, and improve the relevance of the questions, a pre-test was carried out with three general managers and one Regional Branch Manager at the start of November 2014. The questions that generated doubts or embarrassment in the respondents were reformulated. In this way the pre-test helped to check the suitability and reliability of the instruments of data collection, improving the relevance of the questions to the characteristics of the research universe.

The questionnaires were applied – an average reply time being around 15 min – and the interviews were held – with an

average duration of 35 min, totalling a little more than 7 h of recording – with all the personnel occupying the mentioned positions, at collective or individual meetings, between November 2014 and March 2015, in accordance with the availability of the respondents. However, only those respondents with more than five years in the company were considered valid, as they were the ones who possessed information about the companies before and after the merger. Of the total of respondents, 11% had less than five years' service and 27% were absent from the meetings or did not wish to reply, 134 valid respondents therefore remained.

The interview guide and the questionnaire were composed of 28 statements based on variables extracted from the literature, referring to the empirical results of previous studies of IC in M&A, the questions on the questionnaire being distributed on a scale of the ascending Likert-type, with 5 degrees of agreement at two moments: before and after the merger. It was considered that averages below three indicated disagreement. The interview guide was of the semi-structured type, the questions being used as a guide for the discussions. In this way, the researcher had the liberty to insert, exclude and/or modify a question over the duration of the interview, to better understand any idiosyncratic attitude to the phenomenon and its social context.

To understand, therefore, the first degree IC construct, formed by the second degree constructs (human capital, structural capital and relational capital), the third degree constructs that make it up should be investigated, being analysed in the (i) human capital: inducement to innovation and making use of good ideas, technical and/or managerial knowledge, retention of talent, hiring policy and competences, work satisfaction and organisational climate, personnel turnover, education of collaborators, investment in training, leadership techniques and team spirit; in (ii) relational capital: relationships with customers, customer retention, after sales relations, recognition of the company and of its brands by the market, partnerships with other organisations, evolution of the customer portfolio and the creation of new business; and in (iii) structural capital: brand and patent management, investment in information technology, efficiency of internal processes, information and knowledge transmission systems, knowledge management system, encouragement for knowledge sharing, use of employees' ideas, alignment of the courses with company strategy and systems for recognition, awards and promotion of staff.

The research presuppositions analysed were:

- (i) The merger of Itaú and Unibanco had implications for the IC of this organisation; and
- (ii) There was on average a loss of knowledge after the merger, in relation to that existing before it.

After all the data had been collected from the questionnaires, the statistical calculations were carried out with the replies from the valid respondents, to assess the effects of the merger on the IC, confronting what they perceived of the question at the two moments: before and after the merger. In the quantitative

analysis, the average ranking method was used (RM), as presented by [Malhotra \(2001\)](#), obtaining the RM through the calculation of the weighted average between the replies and seeking to check the agreement and disagreement in relation to the statements that comprised the data collection instrument.

The qualitative analysis (of the replies of the interviewees) was carried out using the method of content analysis ([Bardin, 2004](#)), which consists of a set of techniques used to investigate the meaning of the messages of linguistic communications. According to [Jordão and Souza \(2013\)](#) and [Jordão et al. \(2014\)](#) this method is a viable investigation alternative in this type of operation as it is a means through which connections are made between the situation to be analysed and the manifestations of discourse, through operations of dismemberment and semantic, syntactic and logical classification.

Deduction and induction were used alternately in the analytical process, the former prevailing over the latter ([Jordão et al., 2014](#)). As a means of increasing the reliability of the results and the internal validity of the study, the information collected was triangulated with other sources of evidence ([Jick, 1979](#)). Thus, whenever possible, information from one source was confronted with that from others to confirm or refute it (internal validity). It is stressed that, in the present work, this procedure was started with the questionnaires themselves (where the data obtained were discussed combining the statements to know the constructs of the IC in its various levels) and afterwards with the interviews, as various people were heard about the same topic.

In parallel, the bank, the branches and offices of the company were analysed, to learn in more detail about the specific factors of the business (enriched with participant observation). Subsequently, triangulation was used which involved the analysis of information brochures, information garnered from web pages on the company's site, from procedural, quality, training, and corporate policy manuals, from documents from the banks Itaú and Unibanco prior to the merger, and from Itaú-Unibanco S/A subsequent to the merger, in addition to news items published about these companies in periodicals, newspapers and magazines from the time (documentary analysis). For parsimony reasons, the results of the triangulation have been presented inserted into the text, in the analysis of results, with the new information inserted corroborating or refuting the previous. Also analysed were the news items published in the company's internal newspaper, the accounting records, the tables with the indicators of the last ten years and the information obtained in informal conversations (non-structured and extra interview), in addition to contacts made subsequent to the interviews for the purpose of complementing data and clearing up doubts. Finally, the results obtained were confronted with the main previous theoretical and empirical results (external validity), to confirm, complement or contradict them and help towards the generation of new theories on the subject. In this sense, the procedures suggested by [Eisenhardt \(1989\)](#) and [George and Bennett \(2005\)](#) were followed for the analysis of data, hoping that the research had included all the possible levels of analysis to provide relevant and consistent information, firmly based theoretically, and which was within the context of the research.



## Presentation and analysis of results

In this section, the analysis of the implications of the merger between the two banks Itaú and Unibanco S/A on the IC of the Itaú-Unibanco S/A, was carried out, with the contextualization of the organisation, and with the investigation of possible changes in the constitutive elements of the company's IC (human, structural and relational capital) before and after the merger.

### *Contextualization of the organisation studied*

The Itaú-Unibanco S/A is a Brazilian bank founded on 3 November 2008 through the merger of the banks Itaú and Unibanco S/A, which already were two of the largest financial institutions in Brazil.

The impact of the merger of Itaú and Unibanco, at the time it was first announced, was widely covered by national and international publications, through reports of the process, views and opinions of specialists. According to a report that appeared in the newspaper *Gazeta do Povo* (2008), the objective of the merger was very clear: to create the largest bank in the Southern Hemisphere and the ninth largest in the Americas, making it possible to pass beyond the limits of Brazilian Territory to gain international projection. In the Brazilian market, the merger was received as a proof of the solidity of the national banking system because both banks had anticipated the publication of their third quarter results for 2008 to prevent any doubts being voiced about the financial health of the institutions.

According to the American newspaper *The New York Times* (2008), running counter to the world tendency towards a reduction of the financial lever mechanism of the time, the Banco Itaú had bought, for 15 billion dollars, its rival Unibanco, creating the largest financial institution in Latin America.

In reality, after the merger, the Itaú-Unibanco S/A became the largest financial group of the Southern hemisphere of the Globe, as together, in September of 2008, the two institutions, possessed assets amounting to R\$ 575.1 billion reais, as against the R\$ 403.5 billion of the Banco do Brasil and R\$ 348.4 billion of Bradesco.

According to the *The New York Times* (2008), the plans for cuts were not clear at the time of the announcement of the merger (common to processes of consolidation of this type), nor was the control formatting (which was a challenging task, as both were family-owned banks), leaving shareholders with little information, and having to hope for an increase in the market share of the new institution, based on a growth in the Brazilian economy. In its turn, the Portal *G1* (2008) dwelt on the complexity of the process, which was to be carried out in two stages, through cascading share incorporations until the final desired structure was obtained, as well as the capital increase through the issue of new shares.

In addition to the bank, the principal products of the company are credit cards, insurance, investment banking, retail banking, private banking and asset management. The Itaú Unibanco Holding S.A. operates outside Brazil through its companies, in another twenty countries mainly on the continents of

America, Europe and Asia. The bank possessed at the time of the merger more than 95 thousand employees, with R\$ 1.1 billion of total assets, R\$100 million net worth, R\$ 79.6 billion market value, R\$ 36.4 billion EBITDA (earnings before interest taxes depreciation and amortisation) and R\$ 20.2 billion net profit.

Behind the merger and the desire to become a leading bank with a sustainable performance, it capitalised the components of the IC, seeking to make good use of the knowledge existing there before the merger and investing in the maintenance and improvement of such knowledge. Regarding the investments in human capital, the documents and the interviewees indicated that the bank invests in training and qualification of its collaborators to improve the quality of its services. The interviews with the managers of different levels show that this knowledge converts into more and better sales and rendering of services and produces a direct return for all those involved, from the customers (who are better served) to the staff (in the form of variable remuneration). This generated a better organisational climate, producing gains for the company and its shareholders because quality in sales translates into profitability and value generation.

After reviewing the history of the bank through documents and testimonies, one can say that the investment made in the elements of the IC has made it possible to reach the desired position in the market. The interviewees believe that this is sustainable and lasting, provided that investment is continued and principally that research and innovation are maintained – to remain permanently in front and generating value for all those involved in the process.

The managers interviewed singled out four aspects in the merger process. Strategy (which offers a clear directive to be reached); structure (which stimulates the systematisation of knowledge); culture (which values people, stimulates results and facilitates the creation, retention, systematisation and sharing of knowledge); and the performance assessment process (which permits an evaluation of the results of the stimuli in the three previous aspects). This deserves commendation because of the fact that the merger occurred between two large companies that had consolidated their position on the Brazilian scene, and that possessed such aspects under different foci, but that, on merging, became mutually complementary one with the other.

### *Analysis of human capital*

In line with the presuppositions of *Ferenhof et al.* (2015), it was possible to verify that the third-degree constructs, also called the constituent facts of human, structural and relational capital, underwent modifications after the merger. In analysing, initially, the evolution of human capital, it was found that there was an evolution in all the constituent elements of this construct after the merger in relation to what existed before, as can be seen in *Fig. 1*.

In *Fig. 1*, in some statements, there was a greater evolution in RM. This occurred in the affirmation that deals with the policies of encouraging innovation and making use of good ideas of collaborators with a percentage variation of over 12% and investment in leadership and retention of talent with an increment of 10.5% in each factor. On the other hand, the lower evolutions

## Human capital

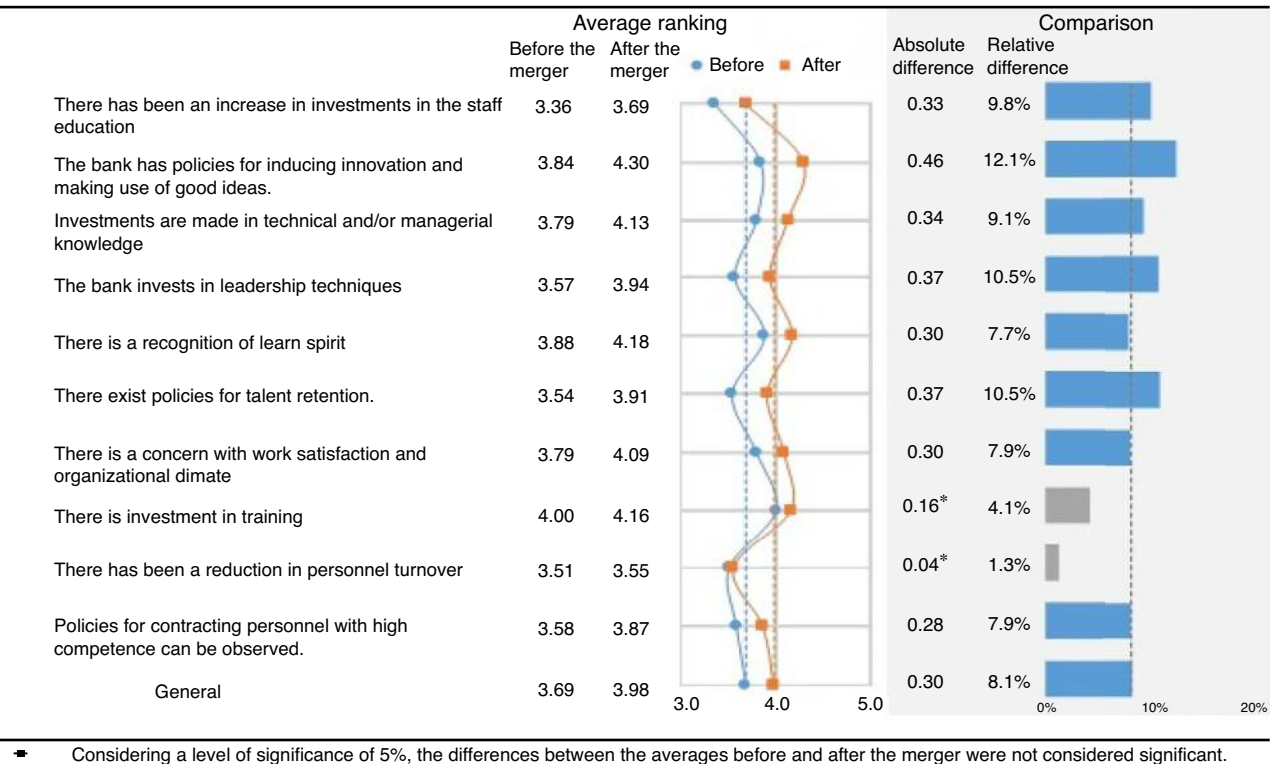


Fig. 1. Table of average general ranking – human capital.

Source: own preparation based on research data.

were seen in investment in training at 4.1% and the reduction of turnover with a percentage variation of 1.3% from before to after the merger.

In analysing these statements in the light of the interviews and documents, it was found that the bank invests in technical and managerial knowledge and that it is this that produces an increase in technical knowledge, and stimulates innovation through using the good ideas of the collaborators themselves. These results corroborate the findings of Bontis (2001), who perceived that human capital is the most important element in the organisation, as it forms the interface between the other dimensions of the IC and collaborates to improve the organisation with its fragmented view of the processes. One of the managers stated that:

Human capital and its reflexes on the recognition and perception of creation and development in the process can be seen in the Bank that, after the merger, there was creation of tools for perfecting, a greater alignment with the vision and values of the company, the establishment of a meritocratic process, and greater investment and preparation of the collaborators (GRA2).

As regards satisfaction and the retention of human capital in the organisation, it could be seen that, after the merger, there was, according to the strategic level managers, “a greater concern with policies for the retention of talent”. The replies on the questionnaires confirm this aspect, as well as the significant concern with work satisfaction and organisational climate, a small reduction in personnel turnover also being seen to have occurred.

One of the possible solutions for this last aspect would be for the company to invest more in the aspects of work satisfaction and organisational climate with the objective of reducing its turnover, in line with the findings of Bontis (2001) and Mayo (2002) who consider the company’s collaborators its most precious assets.

The documentary analysis revealed that the internal career process had become more dynamic, as the bank started to base itself on technical and meritocratic processes in personnel promotion. Direct observation confirms that the collaborators can seek new courses and training programmes that, if they make it possible for them to achieve better results, facilitate the promotion process. This process towards meritocracy is evident in considering the remarks of one respondent, who states that:

After the merger, came the meritocracy, which valorises and recognizes people equally and chooses the best-prepared collaborators to assume new functions (GRA2).

The quantitative results revealed that the bank increased effectively the level of investment in training, in the education of its staff and in following a policy of contracting highly skilled personnel, as there was an improvement in all the indicators when comparing the periods before and after the merger. Equally, increments in human capital were perceived due to investments in leadership techniques and in a greater recognition of team spirit, strengthening, in the view of the respondents, the organisational culture focusing on results and a sense of belonging to the organisation. This strengthening of cultural aspects in M&A is considered a critical aspect by authors such as Calori,

Lubatkin, and Very (1994), Mayo (2002), Barros et al. (2003) and Jordão et al. (2014).

Altogether, in considering the constructs formed through the statements that make up human capital, a relationship between them can be seen, especially that the stimulus to innovation and to the formation of IC in the organisation, the practices of contracting, training and forming personnel, and the stimulus for the development of leadership and teams, were factors that influenced positively personal and professional satisfaction, and consequently the retention of human capital. These results go beyond what one had gathered from the literature from authors such as Coff (1999), Mayo (2002), Freire (2012) and Freire et al. (2014).

The triangulation between the replies to the questionnaires, the documents, direct observation, the formal interviews and informal conversations, all this clearly indicated that the manner in which the organisation managed the IC elements, avoiding their possible loss, as found empirically by Coff (1999) and Mayo (2002), resulted in a series of benefits for the company in relation to the creation, retention and development of human capital in Itaú-Unibanco S/A, after the merger.

The testimonies as a whole revealed that, in relation to human capital, there were many courses and much training offered to staff at all levels, to divulge the new policies, processes, systems and procedures, to share the systematised knowledge in the newly merged organisation, based on the prior experience of mergers and/or acquisitions in Itaú as in Unibanco.

These results complement the ideas of Child et al. (2001) and Barros et al. (2003) for through the utilisation of such experiences is a fundamental factor in the success of the processes in combinations of companies. The recognition of the perception of the creation and development of human capital in the merger process can be synthesised in the following testimony:

After the merger, there was a creation of tools for perfecting, a greater alignment with the vision and values of the company, the establishment of a meritocratic process and greater investment and preparation of the collaborators (GRA1).

### *Analysis of structural capital*

In analysing the third degree constructs created from the relationships between the statements of the structural capital (Fig. 2), it can be stated that the factors related to the systems for recognition, awarding and promoting, to the improvement and efficiency of the internal processes, and to the mapping of staff competencies, were the factors that presented greater evolution of the RM after the merger, with increases of 16.6%, 13.5% and 12.7%, respectively.

The notable improvement in these structural capital indicators helps to explain the evolution of the human capital, as it reinforces the idea that Itaú-Unibanco S/A seeks not only to map knowledge and the competences of its staff, a central question highlighted by Mayo (2002) and Freire (2012), but also to augment this knowledge, linking it to better results through an increase in the efficiency of the processes aligned to systems for recognition, awards and promotion, complementing what has

already being discussed. On the other hand, the analysis of Fig. 2 reveals that the existence of a management system of brands and patents and the alignment of the courses with the organisational strategy were the factors that presented lower evolution in the RM after the merger with increases of 5.8% and 8.0%, respectively. It is relevant to point out that the improvements in these indicators were considerable, the more especially because one of the greatest difficulties in the management of IC is precisely the structuring of the knowledge existing in the company into structural capital.

It was possible to verify the systematisation of knowledge and IC, which could be seen through the relationship between the statements of increments in the existence of a brands and patents management system, increases in investment in information technology and improvements in the efficiency of internal processes. It can be seen that the company maintains systems to map and make available the competences of its staff, all the marks of all four statements being over 4, indicating strong agreement with this question after the merger.

The documentary analysis confirms the finding that the company obtained improvements in the systematisation of its knowledge and increase in its IC. The testimonies corroborated this affirmation (in the question of KM) and complemented it (in the question of the IC), in line with the results of Mayo (2002) who perceived that the management of knowledge elements and information systems favours both value generation, as well as improvements in the internal processes in M&A. This question was evident in the reports of the interviewees, especially in those of directorate level. One of them explained that

The structural capital created after the merger can be seen in the innovations, in the improvements in systems and processes, and also in the other aspects of company structural capital, singling out especially the opportunity of synergy that arose and which was implemented in appropriate related areas with the explicit objective of capitalising the best practices between the two companies (Commercial Superintendent).

In analysing the statements on the systems of knowledge transfer, of the management of organisational knowledge and those relative to the stimulus given to the sharing of knowledge, a significant evolution of all these aspects can be seen after the merger. The testimonies indicated that the company took initiatives towards knowledge sharing and IC, in particular, those related to the transmission, sharing of information and knowledge, and practices for the management of some intangible assets, along with the lines of the thinking of Davenport and Prusak (1998). The direct observations confirmed the presuppositions of Nonaka and Takeuchi (1995) for whom the creation of new knowledge in the company is a process that demands intense and laborious interaction between all the members of the organisation.

The quantitative results indicated that there was greater utilisation of staff ideas after the merger. It was also possible to perceive that, at present, the company stimulates the reach of strategy through the systems of recognition, awards and promotion, the internal courses being more aligned to company strategy

## Structural capital

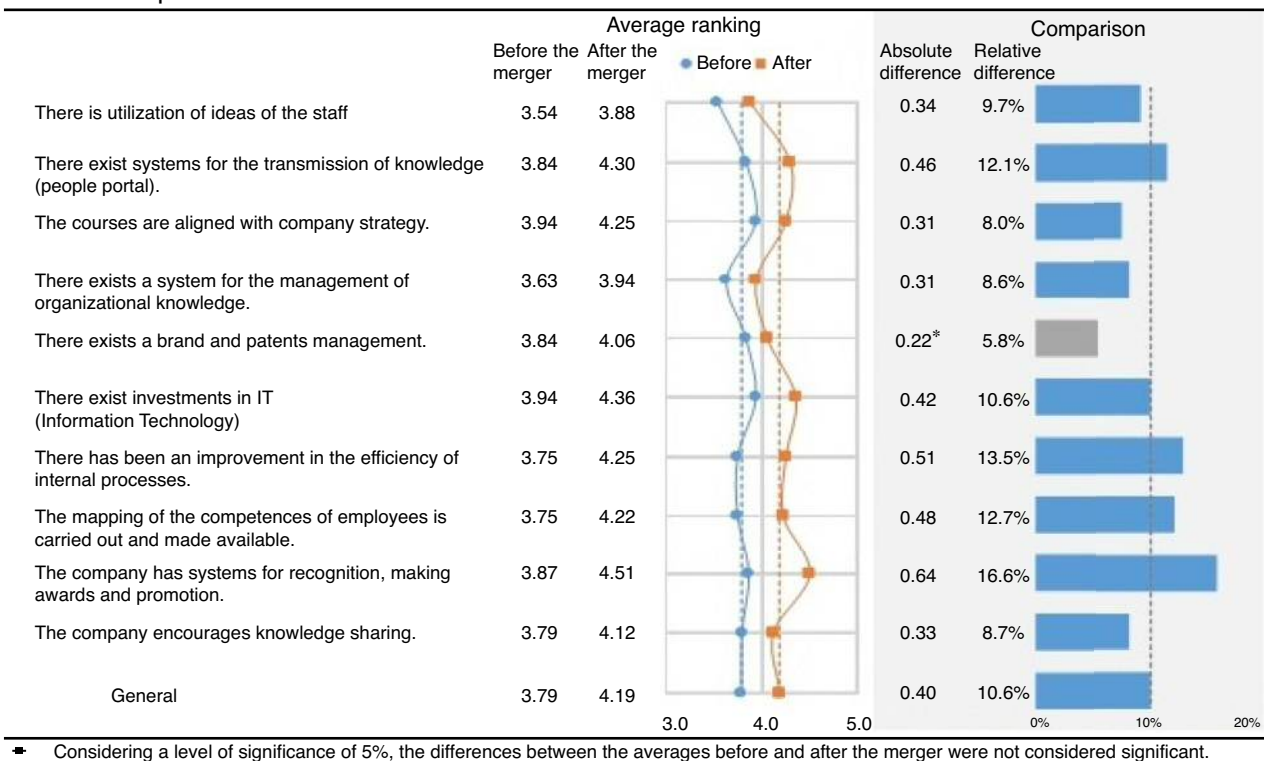


Fig. 2. Table of average general ranking – structural capital.

Source: own preparation based on research data.

than before. There is still, however, a lot of work to do on this question.

The direct observations and the documents indicated that the company motivates its staff to give their opinion, showing its recognition for the work through its system of recognition and awards and this encourages them to create more ideas and propose improvements to processes that, with time, are transformed into structural capital benefiting the company itself. These findings, in part, coincide with, and complement the ideas of [Davenport and Prusak \(1998\)](#) and [Nonaka and Takeuchi \(1995\)](#), that organisational knowledge starts with data that, when organised and interpreted, result in information that, in its turn, contributes to the process of individual and corporate knowledge generation, possibly stimulating, in the words of [Jardón and Martos \(2012\)](#), the formation of structural capital.

In considering the three previous third-degree constructs and relating them among themselves, it was found that the company succeeds in creating, systematizing and sharing its knowledge through practices that stimulate the IC. It should be pointed out that the testimonies, the documents and direct observation reveal that the company does not have a specific plan for the management of the elements of the IC, but seeks out the best managerial practices and creates a differentiation in the market, using techniques to such end.

In checking whether there were losses of structural capital after the merger, it could be seen in the reports of the interviewees that questions occurred that impacted this element of the IC and also of the relational capital. One of the directors stated that:

Problems were perceived such as the loss of convenience for the customer, considering that Unibanco treated them as if they were in their own homes. Problems were perceived of integration between the distinct systems in the two banks, in addition to overloading in the processing of information by the systems. An example of the possible demand not calculated consists in the quantity of data and information that might even be duplicated, considering that one same CPF might be a customer of the two banks. This generated the need to invest in the increase of the technological park, for the increase in demand that had occurred to be absorbed and to serve as a basis for future restructurings (Director 1).

## Analysis of relational capital

Finally, in analysing the evolution of the relational capital, it was found that there was also an evolution in all the constitutive elements of this construct, post-merger, in relation to the pre-merger situation ([Fig. 3](#)). The statements where there was greater evolution in the RM were those that had dealt with the recognition of brands by the market, the effects of the relationship on the creation of new business, and the increase in after-sales investment with an evolution in the RM after the union of 12.2%, 11.9% and 10.6%, respectively.

On the other hand, the analysis of [Fig. 3](#) reveals that the lower evolutions were in the effects of the bank/customer relationship on their loyalty and its partnerships with other organisations with a percentage variation of 4.9% and 6.6% as between before and



## Relational capital

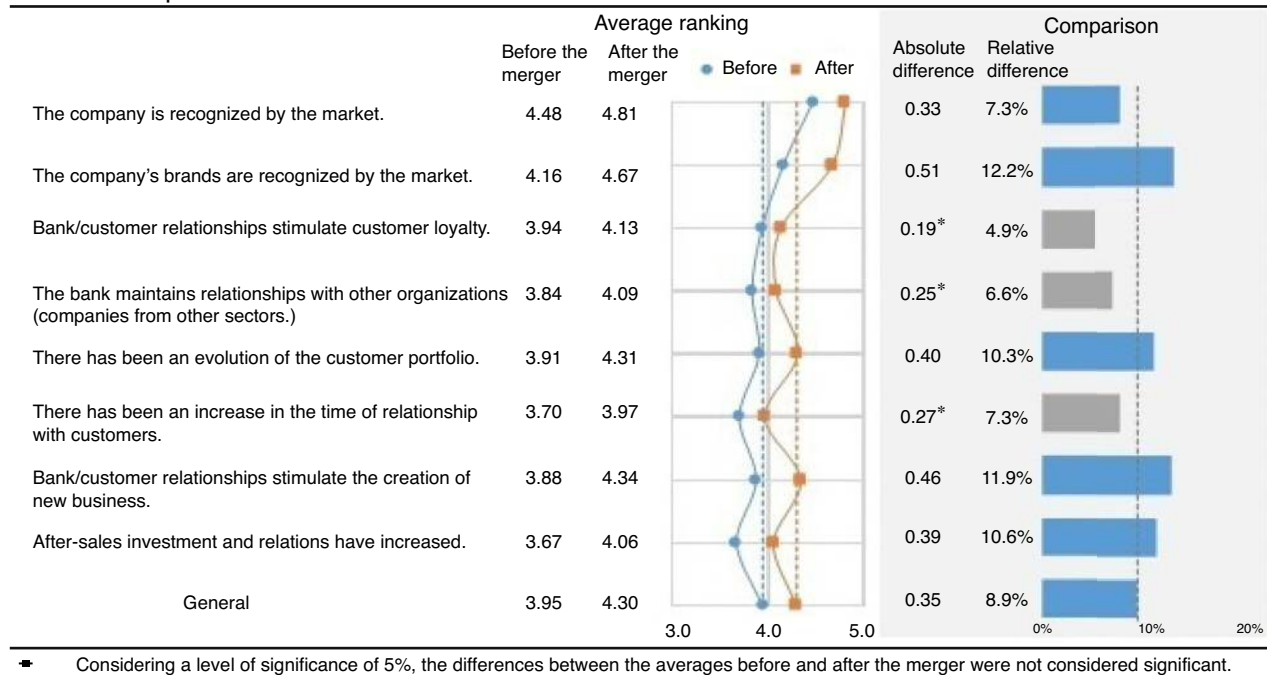


Fig. 3. Table of average general ranking – relational capital.

Source: own preparation based on research data.

after the merger, respectively. Even so, in checking over the constructs of relational capital, as can be observed in Fig. 3, one can see that there was an evolution in the statements related to the bank/customer relationship, showing that this stimulates, in part, the latter's loyalty. One can see also an increase in the length of customer relationships and investments in the after-sales relationship. The testimonies allowed us to relate the increase of the length of the customer relationship and the investments in after-sales relationships with an increase in loyalty on the part of the customers.

The factor recognition and brand value can be perceived by the statements to deal with the recognition of the company by the market and whether the company's brands are recognised, and in analysing results of the quantitative research, we can see that there was an evolution of these questions from pre to post-merger. The direct observations indicated that this recognition is more evident when one considers the size of the company after the merger when it became not only one of the largest banks in the world and the largest financial conglomerate in Latin America, but also the largest financial conglomerate in the whole of the Southern hemisphere.

The size of the bank and the significance of this for the market was a very big change. The number of service points and branches also grew a lot, which provided facility and convenience for customers (GRA1).

The testimonies indicated that the other constructs, even those related to human or structural capital, were elements which helped to strengthen recognition of the company by the market, especially taking into account the working policy of Itaú-Unibanco S/A, the number of services offered, and the service

points that contribute to an increase in company recognition and brand value. The evolution of this aspect can be reaffirmed through one of the reports because

the bank's activities have been focused on increasing the value of its brand in the sense of becoming a protagonist in the internal and regional markets and also an important player on the world stage (GMC).

Finalising, as in the other cases, here also an evolution in the customer portfolio was observed, an increase in the number of partnerships of the bank with other organisations, an increment in the bank/customer relationship, favouring the creation of new jobs. The direct observation and documentary analysis revealed that this relationship was possible because of the proximity between these factors as these partnerships and stimuli in the creation of new business have resulted in the evolution of the customer portfolio.

The body of quantitative results demonstrates that, in fact, there was evolution in all the constructs and sub-constructs forming the intellectual capital, and that the structural capital, surprisingly, was the aspect in which one observed the greatest average evolution after the merger, (10.6% increase), in relation to the previous situation, stressing that only in one of the elements that comprise it was a lower increase seen. The surprise is precisely because of the difficulty mentioned in the literature (e.g. Jordão, 2015; Nonaka & Takeuchi, 1995) of systematizing knowledge by companies, transforming it into explicit knowledge. The second construct that most evolved was the relational capital with an average increase of 8.9%, there being a lower increment in three indicators that comprise it. Finally, the third

construct, human capital, demonstrated the lowest post-merger evolution with an average increase of 8.1%, with a lower increment in two indicators that comprise it and the only construct where there was a factor that had almost zero evolution, the turnover, with only a 1.3% increase post-merger.

After the quantitative analysis (of the evolution of the indicators) and qualitative analysis (of the formal interviews and informal conversations, documents and direct observation), it could be observed that Itaú-Unibanco S/A knew how to manage the risks inherent to the loss of IC in the merger process, contradicting the observations of [Child et al. \(2001\)](#), [Mayo \(2002\)](#), [Barros et al. \(2003\)](#) and [Freire et al. \(2014\)](#) who found that one of the big problems in M&A processes was the loss of knowledge that accompanied them. In the present case, this is probably due to the experience and the know-how acquired in prior mergers and acquisitions by both participating institutions. This aspect confirms and complements the results of [Zheng et al. \(2015\)](#) who observed that the prior possession of knowledge and relevant competences is crucial to the successful acquisition of new strategic assets, stressing the role of KM for the identification, transfer, absorption of knowledge in M&A.

It should be pointed out that not everything was considered by the collaborators as benefits, and that there were some losses during the process. Examples of these were the dismissal of staff, the reduction of segments, lack of motivation with the loss of labour benefits (in some cases), in addition to complaints relative to tools and methodologies that personnel used and which were discontinued. In addition, the problems cited in the interviews include the loss of customers due to a lack of identification because of the new configuration of the bank, difficulties in retaining talent which did not adapt after the merger process, reduction in the standard of service and loss of customers due to products being discontinued, in line with the findings of [Coff \(1999\)](#), [Mayo \(2002\)](#) and [Freire et al. \(2014\)](#).

Considering everything, one can observe that the process that started with small mergers and/or acquisitions in the banks Itaú or Unibanco generated its own expertise on the theme, creating IC. At the present time, Itaú-Unibanco S/A possesses a knowledge and know-how that allows it to grow, learn and generate value in the process, putting experience into practice once again in this large-scale operation and, in this way, developing new processes and generating more knowledge that, in its turn, produces an increase and perfecting of the IC dimensions deriving from both organisations. The results produced consist in improvements in the processes, in the personnel, in the systems, in the technology, in the brands, in the products and principally in the company image and in its relationship with the market.

### Discussion of the results and analysis of the presuppositions

In analysing the first presupposition of the research investigation, it was found that, in fact, the merger between the banks Itaú and Unibanco caused implications for the IC of this organisation because there was an evolution of the average ranking indices, as between the periods prior to and subsequent to the merger. Some

indicators had greater and more significant differences than others, but in general, it was found that all the items evolved. In the qualitative analysis, we found an evolution in the management of the constituent elements of the IC, leading to a complete confirmation of the first supposition. This means that, from the point of view of the research respondents, there was improvement in the management practices of the elements that make up the company IC, confirming and complementing the presuppositions of [Cassel and Hackl \(2000\)](#) who postulated that the evolution of the management practices of the IC elements would bring substantial benefits as regards the value, and generation of wealth of companies. It should be pointed out that among the IC elements observed, the one that obtained the largest average evolution was surprisingly (because of the difficulty of companies in structuring knowledge in systems, technologies and processes) the structural capital, followed by relational capital, and lastly, by human capital, considering the percentage variation of the RM prior to post-merger, corroborating, partially, and augmenting the findings of [Freire et al. \(2014\)](#) – who had already produced a list of intangible assets to be prioritised in the integration, in generating M&A processes in harmony with the results of the study.

In analysing the second investigation presupposition of the research, it was found that on average, there was no loss of knowledge and IC after the merger, compared to the previous situation. Although there are reports of loss of information and IC, due to the merger process between the banks Itaú and Unibanco, something which was found, also surprisingly, as a general tendency, was a great gain in these factors, leading to the partial rejection of the second presupposition. This is surprising because the present result is not in conformity with the understanding of international literature (*e.g.* [Coff, 1999](#); [Mayo, 2002](#)) and the Brazilian literature (*e.g.* [Freire et al., 2014](#)), and extends what one knows on the subject. In practice, this surprise arises from the fact that, in the present context, Itaú-Unibanco S/A possesses a singular IC, produced by the prior experiences in M&A of each of the banks, generating a process of internal benchmarking that makes it possible to grow, learn and generate value after the union.

The following gives an idea of the effects of IC on financial performance and value generation in this company. A report appearing in the magazine *Exame* states that, going against the general trend of the 2014–2016 crisis, Itaú-Unibanco S/A not only managed to circumvent the economic difficulties, but also registered a record gain in 2015, obtaining the largest annual profit ever obtained by a company in Brazil, of 23.35 billion reais ([Exame, 2016](#)).

This becomes more evident basing oneself on the qualitative investigation carried out with strategic level managers in the bank, where one found that, in practice, the good points of each bank were taken advantage of, corroborating and amplifying the results of the international literature obtained by [Larsson and Lubatkin \(2001\)](#) – who perceived that post-union integration depends upon how the process is managed by the buyers and that it can be facilitated by the involvement of people and by the use of social control systems together with formal actions that seek to increase the degree of cultural integration and activate

Premise	Result	Theoretical-empirical implications
(i) The merger between Itaú and Unibanco provoked implications relative to the IC of this organization.	Integrally confirmed	There has been an evolution in the management of the constituent elements of the company IC and an improvement in the management of these elements. Such management has realized the potential existing for improvement in the financial results and in value generation.
(ii) There has been (on average) a loss of knowledge after the merger, in relation to that existing before it.	Partially rejected	Although some factors such as the loss of talent and complaints relative to tools and methodologies that people were using and which have been discontinued have been observed, on average there have been gains in knowledge after the merger, in relation to that existing before it. Information, knowledge and previous experience were used as benchmarking in the success of the new merger.

Fig. 4. Synthesis of the premises of the research, results and implications.

Source: own preparation based on research data.

the potential benefits of cultural mixing. In this sense, it was seen that cultural differences, as also operational and strategic between the banks Itaú and Unibanco were recognised, worked on, managed and overcome, instituting a culture of the new, merged institution's own. More than this, such findings conflict with the results of the noteworthy study of [Child et al. \(2001\)](#), contradicting and complementing them, remembering that the mentioned authors explain that the conditions existing before a M&A cannot explain – except in a very limited sense and without statistically significant consistency – the performance subsequent to the union.

In the present case, however, the testimonies and the complementary analysis of the financial results revealed that the prior experience was fundamental both in the improvement of the performance, as also for the value generation process. These authors postulate that the managers should focus their attention on the rules of post-acquisition management, which, frequently, have been neglected by them – a fact confirmed in the field research. [Child et al. \(2001\)](#) emphasise that such rules are responsible, in large part, for the success of the acquisition transactions in the value-generation logic, which also was a significant observed result. A synthesis of the presuppositions, results and implications can be found in [Fig. 4](#).

The triangulation of the quantitative results, the formal testimonies and informal conversations, with the direct observations and documentary analysis, revealed that, over time, Itaú-Unibanco S/A modified its managerial practices and adopted control system, in addition to promoting an integration process of organisational functions, of personnel, of processes and company activities, by means of different mechanisms, corroborating therefore part of the findings of [Jordão and Souza \(2013\)](#) and [Jordão et al. \(2014\)](#). The bank directors tried to facilitate the transmission of information, improve the quality of communication, supply the parameters for the assessment and measurement of performance, and in line with [Jordão, Melo, and Sousa Neto \(2016\)](#), promote the integration of the organisational structure, collaborate towards cultural meeting and mixing and,

most importantly, facilitate strategic implementation and value generation, generating IC.

Other evidence that should be elucidated is the circular relationship existing between the IC dimensions, in line with the results of [Jardon and Martos \(2012\)](#); and the relationships existing between the third-degree elements of the formation of these constructs. For example, it is possible to see relationships between larger quantities of training and courses with motivation, loyalty, relationships and results, impacting on the satisfaction of staff and customers, increasing the quantity and quality of business and market recognition.

Equally, investment in structural capital impacted directly the efficiency of internal processes, proportioning more reliability and rapidity, making it a differential for the bank, and increasing customer satisfaction – which reverted in new business through the already existing reliability in the customer/bank relationship.

After discussing the presuppositions and producing the main results, it can be seen that the manner in which Itaú-Unibanco S/A conducted the integration process and the manner in which it managed the IC elements impacted positively on the results of the process with improvements in performance and value generation. It could further be seen that the management of the mentioned elements, although still incipient, was considered one of the main reasons that the bank's objectives were reached: which is to be a leading bank in sustainable development and customer satisfaction.

### Final remarks

The questions involving M&A, KM and IC have awakened great interest in the academic and business milieu. Nevertheless, in spite of the increase in volume, in the values and in the relevance of M&A operations, there are gaps in the research arising out of the divergence between the expected results and those effectively achieved with these operations, especially because of a loss of knowledge and intellectual capital associated with them. In this sense, the research described had the objective

of analysing the implications of the merger that took place between the two banks Unibanco and Itaú on the IC of the Itaú-Unibanco S/A. To this end, in the first instance, the evolution of the RM indices was checked prior to and subsequent to the merger, combining the similar statements, trying to find possible relationships between them and in what way the evolution of a construct can impact the evolution of another. In the analysis, it could be seen that there were improvements in all the component elements of the IC. Parallel to this, to achieve greater depth and richness of detail, a qualitative analysis was carried out based on formal and informal interviews, documentary analysis and direct observation.

The results indicated that some constructs had greater differences in their indicators than others, but in general, it could be seen that all the items evolved post-merger, in relation to the situation existing before in each of the merged banks. This means that, according to the research respondents, there was an improvement in the elements that comprise the company IC. Through a qualitative approach it could be seen that, in spite of the fact that immediately after the merger a sensation of insecurity was generated, which was troubling for almost all the participants, the new directors who had been installed rapidly calmed the situation without the need to resort to dismissals. The bank then started to invest in rapid training to align all staff with the new strategy and culture and acclimatise them to the new systems and processes. Through the formal interviews and informal conversations, it was found that there were differences between the practices of evaluation and management of the elements of IC present in the banks Itaú and Unibanco S/A. However, such differences were injected into, and institutionalised in the new organisational structure and culture, resulting in an increase of structural capital. In addition, a surprising result was that, instead of having, on average, a loss of knowledge and IC, there was a creation of the mentioned elements after the merger.

Considering the reduced volume of international studies on the theme, and the absence of studies with this focus on the Brazilian situation, we suggest for future research its re-application in other sectors of the economy, and in companies of different size (including small and medium-sized companies). To this end, case studies or large-scale research can be used, and it may be extended to other elements of KM and IC in M&A and/or the dimensioning of the effects of IC on financial performance and value generation after the merger.

Summarising the results of the research, we can conclude that there was (i) evolution in all indicators of the IC when considering an increase of RM after the merger compared with before; and (ii) improvement in the management of the elements of IC in analysing each of its constituent elements. It should be observed that a large part of the improvements in the IC arose, directly or indirectly, from the investments made in technology, systems, and processes, but principally in training programmes offered to all the staff. This played an essential role, not only in the formation of human capital but in the systematisation of knowledge and the creation and enlargement of structural and relational capital. It should be stressed that these training programmes and knowledge recycling were also part of company strategy, and linked to the system for the assessment of staff performance.

Their adherence implied recognition and awards, and they were also used for their promotions within the organisation, thus linking the formation of human capital to the other elements of IC and to the generation of results.

In addition, investment in the capital structure made it possible for the bank to transfer a large flow of current daily transactions from its branches to online systems, where the customer himself could transfer or even effect payments without having to go to the branch. There were also investments in the improvement of internal processes in the bank – which are making the transactions more agile with every day that passes, providing rapidity, precision and reduction of costs in Itaú-Unibanco S/A's operations, and permitting structural capital to transform into results. As regards relational capital, the bank is 'harvesting the fruits' of the investments made in the other two elements, the training and motivation of staff, together with agility in systems and processes, associated with marketing strategies, being the factors that were mostly responsible for improvements in the institution's organisational image. Add to this the fact that new business arises through a closer relationship with customers, without taking into account the greater presence of the institution (in different localities) which, after the merger, is considered the largest private financial institution in the southern hemisphere. Together with the noteworthy performance of recent years, a stronger and more consistent image of the brand has been generated, linking the formation of relational capital to the generation of results. More than this, together, these findings allow us to conclude that there are significant investments in the creation, systematisation, and sharing of knowledge, more intense than occurred pre-merger, generating increments in the IC – which are being translated into performance and value.

## Conflicts of interest

The authors declare no conflicts of interest.

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