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ARTICLES

COMPARATIVE STUDY ON THE DISCLOSURE OF INTANGIBLE AND INTELLECTUAL CAPITAL IN HIGHER EDUCATION INSTITUTIONS IN BRAZIL AND AUSTRIA

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ABSTRACT

This research analyzed the assessment frameworks of Higher Education Institutions (HEI) used in Brazil and Austria in order to explore and show similarities and differences between the two models — facing the value creation concepts related to intellectual capital and intangible assets —, as well as to contribute to the advancement of studies on the subject and reflections on value creation for the HEI stakeholders. The study was developed in the form of comparative research in which the documentary analysis of the artifacts of institutional and course assessment used in both countries was undertaken. The main points in common identified were as follows: mandatory by law; the encouragement of scientific, cultural, artistic, and technological production; the analysis of the professors' professional experience and in HEI teaching; and social responsibility actions. Some of the main differences were the assessment of the professors' qualifications, the encouragement of courses and research in other countries, and the level of specificity in the indicators related to the actions of social inclusion and diversity. Findings and comparisons indicated that the Austrian HEIs more strongly portray items of Human Capital and Relational Capital, while in Brazil the focus of HEIs is on Structural Capital items with the disclosure of their resources and management practices.

Keywords: Value; Intellectual Capital; Intangible Assets; Higher Education Institutions

INTRODUCTION

The changes brought about by information and communication technologies, the globalization of the economy, and the competitiveness of the market have shifted the focus of attention from tangible assets and resources to intangible ones, consolidating the basis for a “Knowledge Economy” (BAILOA and SILVA, 2007). In this new economy, the foundations of value creation are in the processes of generation, transmission, and dissemination of knowledge with Higher Education Institutions (HEIs) being the main organizers, producers, and reproducers of knowledge (SANCHÉZ, ELENA, CASTRILLO, 2009).

Stewart (1998) argues that the potential for the creation of competitive advantage and corporate value in the long run is essentially due to the effective management of intangibles and identifying and measuring the organization’s Intellectual Capital (IC) is fundamental. Organizations nowadays face the challenge of voluntarily disseminating IC information in their annual reports and in other public media (ABHAYAWANSA; ABEYSEKERA, 2009).

For HEIs, IC disclosure fulfills important managerial functions since it facilitates internal management by recognizing their own capacities and resources, allowing a better allocation of financial investments, and it also creates greater transparency and recognition for stakeholders (AGUIAR, 2013; BRATIANU; PINZARU, 2015).

However, the application of valuation tools based on the categories related to managing Intellectual Capital is still not a general practice mainly due to the still incipient development of the capabilities necessary for the effective management of intangibles that derive from the knowledge flows and inventories in an HEI (ELENA-PEREZ et al., 2011), as well as the lack of affinity with using scaling models to identify strategic futures that show differentials stemming from the knowledge and practices developed within a HEI (TAHIR INAYATULLAH et al., 2013).

In this context, the present study aims to analyze the assessment frameworks of HEI adopted in Brazil and Austria under the aspect of dissemination of Intellectual Capital management in order to explore and ev-

idence similarities and differences. The Brazilian framework was not formulated with the specific purpose of disseminating IC, but focuses some of these resources. On the other hand, Austrian universities have been obliged by law to publish information about IC since 2007, favoring its disclosure and dissemination, and therefore has a framework elaborated for this purpose (CÓRCOLES; PEÑALVER; PONCE, 2011).

According to data from the United Nations Educational, Scientific, and Cultural Organization (UNESCO), Austria reserved 5.5% of its gross domestic product (GDP) in 2013 for education and 79.0% of young Austrians are enrolled in universities, but when the percentage of Austrians who have completed higher education is observed, the figure drops to 38.9% (OECD, 2014). In addition, Austria offers higher education exchange programs and 15.0% of these students in the country are foreigners (OECD, 2014).

Brazil invested 5.2% of its GDP in the education sector in 2013, which is the average of the more than 40 countries analyzed in the Organization for Economic Cooperation and Development (OECD) report, and is third in highest public spending on education with 16.1% of its budget (MARIZ, 2016). The survey carried out in 2014 by the Brazilian Institute of Geography and Statistics (IBGE) revealed that 58.5% of all Brazilians between the ages of 18 and 24 attend higher education in Brazil (LISBOA, 2015) and only 16% of Brazilians have a college degree (SOUZA, 2015).

In addition to the considerable difference in the percentage of the population with higher education in Brazil and Austria, the quality of higher education, and of education as a whole, also presents different results.

The OECD coordinates the implementation of the PISA (Program for International Student Assessment) with the objective of evaluating the quality, equity, and efficiency of the educational systems with students from all member countries and affiliates (PISA, 2015). In the 2015 edition, countries were separated into three distinct rankings according to test scores in math, reading, and science. As for the position in math, Austria stood at twentieth and Brazil at sixty-eighth; in reading, Austria ranked thirty-third and Brazil sixty-second; and in sciences, Austria ranked twenty-sixth and Brazil sixty-seventh (PISA, 2015). And in another OECD comparative that considered factors for a better life, in terms of education, Austria ranked

twenty-second and Brazil ranked thirty-seventh from a list of 38 countries (OECD, 2017).

Even without occupying “global” positions in educational indicators, Austria still has high standards and an apparent greater appreciation of the drivers of Intellectual Capital compared to the Brazilian reality. In this sense, the present work seeks to compare the two framework contours of Intellectual Capital management based on bibliographical and documentary revision. In order to do so, a comparative analysis (BLAU, 1971; HEYDEBRAND, 1973) of the institutional and course assessment artifacts used in these countries was undertaken.

The comparison between Brazil and Austria seeks, therefore, to identify and cover conceptual and instrumental gaps regarding the comparative efficiency of higher education in Austria (population percentage, learning outcomes, internationalization, among others), having as a background the pioneering use of IC management artifacts for managing HEIs. It is important to note that, as in Brazil, Austrian HEIs need to present their performance information from a specific framework regulated by the government.

The fundamental question that demarcates the field of research of this study is as follows: “if and how the framework of Intellectual Capital Management has been used to drive value creation by HEIs in Brazil and Austria”. Its aims are to contribute to a better understanding of the dissemination of Intellectual Capital by HEIs, show the similarities and differences between the frameworks adopted in Brazil and Austria, support researchers by providing an exploratory research source, and to contribute to the advancement of studies on the theme and reflections about it especially with regard to the proposal of public educational policies in Brazil.

This work is structured in eight sections including this introduction. Initially, fundamental concepts about Intellectual Capital and its dimensions are presented followed by a conjecture about the disclosure of IC in HEIs. Next the procedures are reported and the assessment frameworks adopted by HEIs in Austria and Brazil are presented with the subsequent disclosure of similarities and differences between the frameworks analyzed with the final considerations of the study presented at the end.

INTELLECTUAL CAPITAL

Although there is no consensus in the academic community about a standard definition for Intellectual Capital, it is well known that researchers generally resort to seminal works published in the late 1990s to conceptualize IC. Stewart (1998) states that IC portrays intangible assets of intellectual origin such as knowledge, information, intellectual property, experience, among others that can be used for wealth generation based on the development of a competitive advantage for the organization. Analogously, Edvinsson and Malone (1998) define intellectual capital as knowledge that can be converted into value for the organization.

Reina & Ensslin (2011), after analyzing a series of studies published in the field, identified that IC can be conceptualized under two main aspects: (i) the combination of intangible assets that allow the organization to function and to maintain a sustainable competitive advantage, which is in line with that advocated by Stewart (1998); and (ii) it represents a hidden gap between the organization's market value and respective book value.

In this last aspect, IC is seen as a strategic driver that has a positive impact on the future performance of the organization, representing all inventories important for value creation that are not portrayed in the organization's traditional financial balance sheet with a focus on tangible assets (REINA & ENSSLIN, 2011). On this point, Stewart (1998) claims that it should be an accounting gap to be filled since the market appreciates and rewards such wealth, but conventional accounting fails to measure IC's value.

By equivalence, most definitions indicate that IC is composed of three primary dimensions: Human Capital, Structural Capital, and Relational Capital (STEWART, 1998; EDVINSSON & MALONE 1998; BENTON, 1998; NAZARETH & HERREMANS, 2007). Kaufmann & Schneider (2004) consolidated a list of terms and definitions in the IC literature.

In general terms, Human Capital encompasses the knowledge, skills, competencies, experience, and personal power of innovation of employees, and also includes the organization's values, culture, and philosophy (EDVINSSON & MALONE, 1998; STEWART, 1998). It is important

to note that the term is not restricted to individual talent, but also encompasses the collective skills of a workgroup or the organization as a whole (STEWART, 1998).

Structural Capital comprises all types of knowledge “repositories” appropriated by the organization such as information systems, databases, intellectual property items (e.g. patents, copyrights, and trademarks), documents, models, methodologies, processes, and other mechanisms that support decision-making, performance of functions, and employee productivity (EDVINSSON & MALONE, 1998; BONTIS, 1998; STEWART 1998). It is worth mentioning that Structural Capital is composed of items that belong to the company but are largely dependent on Human Capital for their development (NAZARI & HERREMANS, 2007), and the knowledge embedded within the routines of an organization is the essence (BONTIS, 1998).

Relational Capital refers to the intangibles that result from the interaction dynamics of the organization with actors from the external environment. It covers the knowledge embedded in all the relations that an organization develops such as with clients, suppliers, associations, competitors, government agencies, and other stakeholders (STEWART, 1998; BONTIS, 1998). According to Nazari & Herremans (2007), one of the main categories of this dimension is the “Client Capital” that denotes the organization’s market orientation linked to the disclosure and actions based on the clients’ needs.

Stewart (1998) points out that intentionally or unintentionally each organization continually potentiates IC in all three dimensions, but that the emphasis varies according to its history, context, and strategy. For value creation, Bontis (1998) and Edvinsson & Malone (1998) affirm that a proper combination of the three dimensions is necessary because there is a close interrelation between them.

Apparently, in general terms for the various sectors of the economy, the gap of disclosure anticipated by Lev (2003) regarding the relations between the three dimensions and the value chain that combines the joint application of tangibles and intangibles for the achievement of organizational objectives ranges from R&D actions to post-marketing feedback.

Even though it is a field that has been developed for more than twenty years, more recent studies still seek to standardize measurement dimensions, discuss mandatory or voluntary disclosure practices, and to understand the reflexes on the performance of organizations and the implications of interactions between intellectual capital and the challenges related to the Knowledge Economy (KIANTO et al., 2014; INKINEN, 2015; ANSARI et al., 2016; DUMAY, 2016).

DISCLOSURE OF INTELLECTUAL CAPITAL IN HIGHER EDUCATION INSTITUTIONS

In the current “Knowledge Economy”, the bases of value creation are in the processes of production, transmission, and dissemination of knowledge and HEIs are identified as the main operational organizations of these three processes (SANCHÉZ; ELENA; CASTRILLO, 2009). Similarly, Piercher & Pausits (2011) argue that HEIs specialize in generating and disseminating knowledge and would be conceptualized as typical “knowledge organizations”. Faced with this, Bratianu & Pinzaru (2015) point out that HEIs need to assess and manage their IC capabilities as a way of surviving in a highly competitive environment.

Córcoles (2013) argues that IC management can improve the position of HEIs in at least five ways: (i) being transparent in the use of public funds; (ii) disseminating achievements in research, education, and innovation; (iii) communicating their institutional values; (iv) demonstrating their competencies; (v) and disclosing items related to the development of their intangible assets. Considering these aspects, IC disclosure instruments play a key role in improving the understanding and management of the organization’s intangible assets (LEITNER, 2002).

Guthrie, Petty, and Johanson (2001) identified the evolution of two IC-related missions: (i) developing systems for creating, capturing, and disseminating IC within organizations for strategic decision-making internally; and (ii) establishing new measures and ways of externally reporting the value attributable to the organization’s IC taking into account information needs for both internal managers and investors with a view to valuing the company as an investment opportunity.

The disclosure of IC was born in the private sector, but gradually has been extended to the public sector and non-profit organizations while offering distinct objectives and varied methods of measurement and management (PACHECO, 2005; AGUIAR, 2013).

The expansion of disparities between the book value of organizations and their market value has led investors and financial analysts to

point out inadequacies in the traditional financial reporting model hitherto focused on tangible assets, requiring greater transparency with items related to Intellectual Capital (SINGH & VAN DER ZAHN, 2009). Abhayawansa & Abeysekera (2009) identify the disclosure of IC as an item of business management in which information is provided at the supply and demand levels.

Organizations still face the challenge of voluntarily disseminating IC information in annual reports and other public media, and particularly in the European region there are cases of companies producing a separate IC statement as a supplement to the annual report (ABHAYAWANSA & ABEYSEKERA, 2009).

Even with the implications of the Sarbanes-Oxley Act on the accountability of managers for their investments and results, the management apparatus focuses on tangibles rather than producing reports about intangibles. Thus, while the market can attribute values five times or more to intellectual capital compared to tangible aspects, executives are content to manage the industrial assets typical of the economy of the past century (Sherman, 2012).

Thus, while intangible assets and products deriving from knowledge flows and inventories are being treated today as drivers of organizational success, there are no minimally uniform and conspicuous criteria for assessing how organizations appropriate intellectual capital, neither from its creation/preservation nor of its negotiation/monetization (TEECE, 1998; THUM-THYSEN, 2017).

Since HEIs do not have a legal structure similar to other organizations, they are not required to submit annual reports in the same scope as required by laws directed to organizations in general, but they still need to be accountable to the government, manage assets and rights (LEITNER, 2002), as well as to act subsidiarily in the regional development of their social environment (SECUNDO, 2017).

For HEIs, the disclosure of IC fulfills important management functions because it facilitates internal management, recognizing their capacities and resources, allowing better utilization of financial investments,

while also creating greater transparency and recognition for stakeholders (AGUIAR, 2013; BRATIANU & PINZARU, 2015).

European countries pioneered the dissemination of the Intellectual Capital of HEIs. Austria was the first to stipulate in law the requirement for presenting IC reports for universities (LEITNER, 2002; CÓRCOLES, PEÑALVER, PONCE, 2011). In addition to the Austrian example, eight European countries participated in the project “Observatory of the European University”—Germany, Austria, France, Holland, Hungary, Italy, Portugal, and Switzerland—which was aimed at creating an IC assessment framework applied in 15 participating universities (PEROBA, 2013).

Another initiative was the study of the Autonomous University of Madrid, Spain, which conducted a survey between 2000 and 2003 for creating and implementing an IC management framework (CÓRCOLES, 2013). This study aimed to sensitize Spanish HEIs to the importance of analyzing and making available information about their Intellectual Capital (PEROBA, 2013).

Although IC dissemination tools generate benefits for HEIs, there are still difficulties in implementing them. Peroba (2013) cites the lack of knowledge on the subject as one of the main limiters of implementation since many institutions are unaware of the methods that could be used and the benefits of IC disclosure. Still on this point, Sánchez, Elena, and Castrillo (2009) highlight the difficulty of elaborating and selecting the indicators that will serve as a basis for analyzing disclosure frameworks. In addition, Cañibano & Sánchez (2009) argue that traditional management systems can make it difficult to adopt changes and that disclosure of IC requires skills different from those required for the commonly used disclosure frameworks.

According to Farias Moura et al. (2005), Human Capital emerges as a focus of investment to leverage the competitiveness of HEIs. However, according to the managers of the universities researched, there are still no clear criteria that allow the effective management of individual competencies either through institutional policies or by the assessment metrics that reinforce individual performance and corporate return.

From an empirical research involving 101 professors of professional master degree programs, Peroba (2013) proposed an initial framework for IC assessment structured in three sections: (i) strategic plan, (ii) critical intangible assets, and (iii) IC indicators grouped into structural, relational, and human. The study sought to highlight the contribution of intangibles to the achievement of the strategic objectives of educational institutions, defining constructs and frameworks that took into account the importance of each metric and the difficulty in its calculation.

Guerrero & Monroy (2015) investigated the influence of intangibles on the strategic management of HEIs through a measurement system framing variables related to intellectual capital, demonstrating that knowledge management and organizational reputation influence organizational dynamics.

In view of a socioeconomic context that highlights the value of knowledge, Moreno et al. (2016) pointed out the importance of Intellectual Capital to face the contingencies experienced in government higher education institutions, discussing the management control practices adopted in them, the implication in the social value created in these institutions, and their repercussion in changing the models and dimensions of mechanical and organic organizations.

In a generalizable framework research to complement the current HEI assessment systems in use in Brazil, several authors have been dedicated to discuss and propose process metrics of value measurement in public and private universities both for internal purposes of decision making as well as for dissemination and social repercussion purposes (HOSS, 2003; TEODOROSKI, 2013; REZENDE et al., 2016; SILVA & REZENDE, 2017 (a), SILVA & REZENDE, 2017 (b)). The main findings refer to the low affinity of the social actors involved with the emphasis that is intended to bring to the intangibles, prevailing the focus of evaluating tangible issues.

PROCEDURES

A bibliographical and documentary research on HEI assessment practices was carried out for the development of this work contemplating two case-types, the Austrian and the Brazilian, making it possible to reveal similarities and differences between the current frameworks.

The study examines the dissemination of Intellectual Capital assessment frameworks adopted in Brazil and Austria as a direct result of the processes of production and dissemination of knowledge related to HEIs in order to explore and evidence similarities and differences between them, while also contributing to the advancement of studies on value creation for stakeholders.

The literature and regulation documents analyzed were organized in the analytical categories that derive from the theoretical mainstream of Intellectual Capital management, which is in the Human Capital, Relational Capital, and Structural Capital dimensions.

Comparative studies are appropriate to characterize phenomena and to contrast complex realities between or inside sectors, allowing to highlight attributes and conditions that approximate or distance realities related to a field of research (BLAU, 1971; HEYDEBRAND, 1973), including in the field of research comparing national economies and the competitive potential for insertion in a globalized world (PORTER, 1993). Comparative observation is one of the pillars of Science, starting from observation for propositions with support of previously articulated concepts and theory.

With the purpose of exploring, describing, and individualizing (TILLY, 1984), this research focused, considering the field review, two observations: one considered to be avant-garde, the Austrian case, and the Brazilian case, a reality we faced, in hopes of offering possible improvement research propositions.

The approach of the Austrian framework came from normative affinity with the Brazilian assessment system, both under the supervision of the central government, and it provided some degree of distance from

anglocentrism as the dominant current of management studies (RODRIGUES & CARRIERI, 2001).

The documents for the comparative analysis were obtained by collection from the Austrian and Brazilian regulations existing and available on the internet from March to July 2016, as mentioned in topics 5 and 6, that is, secondary data that characterizes the research as bibliographical and documentary (TEIXEIRA Jr., 2002).

The contents were treated using the thematic analysis approach (CAVALCANTI, 2014) with the application of homogeneous theoretical categories a priori (Human Capital, Structural Capital, and Relational Capital) and the classification of records in only one category. Counting indicators were created for each category only for the SINAES, the framework adopted in Brazil, since the Austrian framework was taken as the benchmark.

The research is limited by the specific access to the contents present in the normative documentation, and there is no deepening in the macro and microeconomic contour conditions of the HEI industry neither in Austria nor in Brazil. Topic 7 offers a comparative analysis and discussion of findings.

THE AUSTRIAN FRAMEWORK: WISSENSBILANZ

In the current context of the “Knowledge Economy”, European countries consider that improving and qualified investments for universities are a direct capability driver for the continent as a whole and for European individuals (CÓRCOLES, 2013). This vision is so important that in 2000 the European Council published the “Lisbon Agenda” that had as its ultimate goal the transformation of Europe into the main knowledge-based global economy by the year 2010 (SANCHEZ, ELENA and CASTRILLO, 2009).

In many European countries there is no obligation or recommendation for the disclosure of Intellectual Capital by HEIs. According to Córcoles, Peñalver, and Ponce (2011), the only country that differentiates in this aspect is Austria where since 2007 universities are required by law to release their IC. In addition to the compulsory nature, Leitner (2002) states that Austrian universities have used IC disclosure tools to improve the management of their intangible assets.

It should be noted that the universities of Austria are institutional legal persons that are under public laws and thus have the freedom to act and regulate themselves. The Federal Ministry only oversees its legal activities and has no power to intervene in its economic activities, for example.

The formal beginning of this movement dates back to 2001 when the Austrian Ministry of Education, Science, & Culture began studies for the possible implementation of a framework for the dissemination of IC. In 2002, the Austrian Parliament decided to implement the ‘Universities Act 2002’, formalizing the disclosure of the IC in 21 Austrian universities—the so-called Wissensbilanz (LEITNER, 2002; CÓRCOLES, 2013; PEROBA, 2013).

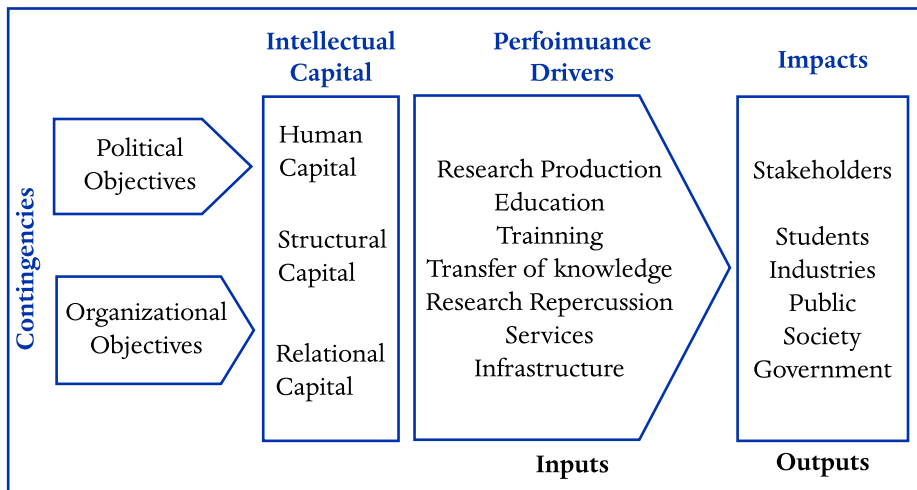
The Wissensbilanz has two functions for universities. The first is of an internal aspect and is aimed at providing the information necessary for the institution’s strategic positioning and decisions. The second, of an external aspect, concerns the dissemination of information to its interested parties about the HEI’s intellectual productions, which also allows the Ministry of Education to have information for the allocation of funding for research programs and the definition of national education policies and science (LEITNER, 2002; DURST & GUELDEMBERG, 2009).

In fact, funding from Austrian universities, which is done by the Federal Government, has become a direct result of the reports submitted by HEIs according to paragraph 12 of the “Universities Act 2002”. And the budget for university activities is negotiated every three years depending on its performance in previous years.

The “Universities Act 2002” was also responsible for restructuring university concepts in Austria. The aim of the Austrian HEI was to “develop and transmit science and the arts, train and qualify the next generations of young scientists and artists, and apply the results of scientific and artistic research in national and international cooperation to their respective fields”.

The Act 2002 establishes basic requirements to be reported by the universities and the need to send the reports to the federal ministry within a deadline, being valid for three consecutive years. According to the IC disclosure framework, as presented in Figure 1, the reports should contain: (i) the activities carried out by the university, its mission and objectives; (ii) its Intellectual Capital divided into Human Capital, Relational Capital, and Structural Capital; (iii) processes performed within the institution; and (iv) the outputs and impacts on society (CÓRCOLES, 2013).

Figure 1 Intellectual Capital disclosure model of Austria’s HEIs



Source: Leitner (2002), adapted.

The Universities Act 2002 reports an initial list containing 200 financial and non-financial indicators, of which 24 are mandatory indicators and the others are used according to the context and purpose of the HEI (LEITNER, 2002). The indicators were selected based on Intellectual Capital indicators proposed in the literature then consulted, as well as previous analyses of Austrian universities, and through assessment surveys (CÓRCOLES, 2013).

The first report should have been published in the year 2005, but it was only in February 2006 that the Austrian federal authority selected and published a new regulation: the Wissensbilanz-Verordnung (WBV). It contains the final list of indicators and information that would structure the future IC disclosure reports (VALLEJO-ALONSO; RODRIGUES-CASTELLANOS; ARREGUI-AYASTUY, 2011). Thus, the first official IC report on Austrian HEIs was published in 2007 (CÓRCOLES, 2013).

Table 1 presents the Wissensbilanz summary that is divided into a main document and two appendices, considering only the points related to the characteristics for preparing the IC disclosure reports.

Table 1 Wissensbilanz disclosure regulation published in 2006

Regulation structure	Key Topics in Regulation
Normative Topics (13)	Definition of the general and necessary structure for the IC report Number of published indicators: 53 Number of optional indicators: 7
Descriptive Appendices (2)	Standardization of measurement indicators Standardization of the HEI basic knowledge fields

Source: Córcoles (2013).

The third topic of the Wissensbilanz describes the basic structure for the disclosure of IC by Austrian HEIs. This structure follows the same framework presented in Figure 1, focusing on IC, performance, and impacts.

The fourth topic presents the basic indicators that need to be disclosed in the narrative form and should describe the HEI's strategies on several aspects such as (i) quality assurances, (ii) public relations, (iii) measures to achieve the university's mission, (iv) gender equality measures; (v) staff development and employee training measures, (vi) measures that address students with disabilities, and (vii) measures related to research groups.

Each of the three IC dimensions (Human, Relational, and Structural Capital) are also described with respective indicators, as exemplified in Table 2.

The Wissensbilanz also lists indicators not directly associated with Intellectual Capital concepts both for the processes leading to the creation of value and for forecasting results due to institutional planning (Tables 3 and 4).

Also according to the Wissensbilanz regulation for the disclosure of IC in Austrian universities, the ninth topic presents the indicators that include personnel expenses, the profile of the curricula offered, and the indicators of expenses with clinics and medical care for the universities with a school of medicine.

Table 2 Intellectual Capital Based Management Indicators

Human Capital	Relational Capital	Structural Capital
Number of employees participating in personal development programs	Number of members and employees on external committees	Availability of online databases and scientific journals
Number of members participating in scientific-artistic research	Number of partnerships with universities abroad	Research and development apparatus and installations
Number of students and professors participating in exchange programs	Exchange programs, assignments, and library activities	Facilities for people with special needs

Source: the authors

Table 3 Performance Drivers Indicators in Wissensbilanz

Education & Training	Research & Development
Average hours studied per semester	Allocation of R&D workers
Number of undergraduate and graduate students	Number of projects
Number of undergraduate programs	Number of scientific and artistic initiation grants
Number of students in exchange programs	

Source: the authors

Table 4 Outcome indicators in Wissensbilanz

Education & Training	Research & Development
Number of graduates by gender	Number of graduates in PhD courses
Number of graduates per country of origin	Number of presentations or publications in events and periodicals
Number of graduates per field of study	Number of patents granted on behalf of the university
Number of students completing undergraduate programs	Income from own R&D projects

Source: the authors

It should be noted that there are also two groups of indicators for specific courses that will not be analyzed in this study. It is a set of indicators for universities that offer medical courses and another group for art universities.

Finally, the Wissensbilanz appendices detail how to conceptualize and operationalize each of the indicators and what fields of knowledge are part of the reports.

In 2009, the Universities Act 2002 was amended to standardize the distribution of administrative competences between the Rectorate respon-

sible for decisions and admissions, the “Academic Senate” responsible for teaching plans and menus made up of representatives from the various schools, and the University Council that is responsible for overseeing the functioning of the university, establishing female participation in at least 40% in all three spheres according to data from the European Education Directory.

THE BRAZILIAN FRAMEWORK - SINAES

There has been a significant increase in the number of students enrolled in undergraduate courses in Brazil in the last four decades. According to surveys conducted by the National Institute of Studies and Educational Research Anísio Teixeira (INEP), the undergraduate branch has grown exponentially, especially since 1998.

Regarding the number of HEIs, according to the spreadsheets “evolution of higher education 1980/1998” (between 1999 and 2016) and “statistical synopses of higher education 2014” (2016), in 1980 there were 882 HEIs and growing to 973 in 1998 (21% public and 79% private). In 2014 this figure jumped to 2,368 HEIs (13% public and 87% private). An evolution was also seen in the number of students enrolled. In 1980 there were 1,377,286, in 1998 it grew to 2,125,958 (38% in public HEIs and 62% in private HEIs), and by 2014 student enrollment reached 7,828,013 (25% in public HEIs and 75% in private HEIs).

The National System for the Evaluation of Higher Education (SINAES) created by Law No. 10,861 has been ongoing in Brazil since 2004, whose assessment processes are operationalized by INEP and coordinated by the National Commission for the Evaluation of Higher Education (CONEPES) (INEP, 2016a).

The objectives of SINAES are as follows: (i) identify the merit and value of institutions, knowledge fields, courses, and programs in terms of teaching, research, extension, management, and training; (ii) improve the quality of higher education and the orientation of the expansion offer; and (iii) promote the social responsibility of the HEIs with respect to their institutional identity and autonomy (INEP, 2016a).

In general, SINAES has the role of assessing the institutions, assessing the courses, and assessing student performance (INEP, 2016a). The institutional assessment is carried out by a self-assessment of the HEI and by an external assessment carried out by committees designated by INEP in which ten dimensions are considered: (i) mission and institutional development plan (IDP); (ii) teaching, research, graduate school, and extension

policy; (iii) the HEI's social responsibility; (iv) communication with society; (v) policies with personnel, faculty, and technical-administrative staff; (vi) management of HEIs; (vii) physical infrastructure; (viii) assessment planning; (ix) student service policies; and (x) financial sustainability.

The purpose of this assessment is to subsidize the accreditation and re-accreditation of the HEI, as well as the transformation of the academic organization from a college to a university center and from a university center to a full university (INEP, 2014).

On the other hand, the assessment of the courses is carried out by committees of specialists designated by INEP and by the results obtained in the National Student Performance Examination (ENADE). The higher education courses in Brazil go through three types of assessment: for authorization, held when an HEI requests authorization from the Ministry of Education (MEC) to open a course; for recognition, done when the first class completes half of the new course; and for recognition, held every three years when the course's preliminary concept is calculated. Regarding the dimensions assessed, SINAES considers: (i) didactic-pedagogical organization; (ii) faculty profile; and (iii) physical facilities (INEP, 2016b).

For assessing students, the ENADE exam is applied at the end of the first and last year of the undergraduate course (INEP, 2016a). The exam consists of questions of general professional education and specific capabilities, since it aims to assess the students' performance in relation to the program content of the course, their abilities to adjust to the demands arising from the evolution of knowledge, and their competences to understand themes external to the course and not with just a specific scope of their profession (INEP, 2015).

Institutional assessment and course assessment are carried out through quantitative and qualitative analyses in which the evaluators assign scores on a scale of one to five to each of the indicators (in ascending order of excellence) and write a contextualized justification of each of the concepts assigned.

Based on the indicators, MEC determines the HEI's score and the score for its respective courses, both calculated based on the weighted ari-

thmetic mean of the scores of the dimensions, these resulting from simple arithmetic means of the indicators that make up each dimension (INEP, 2014; INEP, 2016b).

According to INEP (2016a), the results of the assessments make it possible to draw a panorama of the quality of courses and HEIs, and the information obtained with SINAES is used (i) by government agencies to guide public policies; (ii) by HEIs to guide their institutional effectiveness and academic and social effectiveness; (iii) and by students, parents of students, and the public in general to guide their decisions regarding the reality of courses and institutions.

SINAES is composed of 51 general indicators and the course assessment includes 37, totaling 88 indicators. It should be mentioned that the number of indicators in the course assessment instrument is greater than that considered in the present research. The analysis of indicators was limited to those offering a degree in the presential mode (distance learning was not included), and only the indicators for general courses were considered, therefore the specific indicators that were applied exclusively to courses in the area of health, law, among others were not considered.

As already mentioned, unlike the Austrian framework, the SINAES, in principle, was not prepared for the disclosure of the IC, but contains IC elements. Therefore, for the purposes of the present research, a categorization of indicators present in the instruments of institutional and course assessments was undertaken. Thus, of the 88 indicators considered, 64 are related to IC and the remaining 24 to items present in traditional accounting. Specifically, by analyzing thematic content and counting, 22 indicators are related to the Human Capital dimension, 30 to Structural Capital, and only 12 related to Relational Capital were identified. As an example, Table 5 cites some indicators related to the three IC dimensions implicitly present in the Brazilian framework.

COMPARATIVE ANALYSIS AND DISCUSSION

The comparison of the HEI assessment frameworks adopted in Brazil and Austria contrasts the management dynamics and the institutional indicators with a focus on Intellectual Capital management (Structural Capital, Relational Capital, and Human Capital) specific to undergraduate courses and present in the IC disclosure documents.

The first similarity to be highlighted is the normative character: determination through federal laws for presenting items to measure the HEI's performance. Keeping their respective objectives and limitations, each country requires a formal and structured exposure of assets classified as intangible. Another item with great similarity is the existence of indicators linked to scientific production, since the two frameworks show a concern about the production of the professors in activity, which includes input, process, and output.

The presentation of the HEI's mission, its development plans, and social responsibility are mandatory elements in the two frameworks analyzed, although they have different focuses. While Brazilian HEIs direct their measures towards integration with the community and socio-environmental actions, Austrian HEIs are encouraged to focus the integration of women, and above all on gender equality.

The Austrian framework contains some specific indicators for assessing actions for the inclusion of people with disabilities and chronic diseases. It also has plans to analyze specific actions for promoting gender equality with indicators such as (i) expenditure on measures to promote gender equality and empower women and (ii) expenses with actions to reconcile work, study, and family life. In the Brazilian framework the indicators refer in a generic way to items such as (i) social inclusion, (ii) diversity, (iii) the defense and promotion of human rights, and (iv) ethnic-racial equality. These items are mentioned in the Brazilian indicators solely by the "analysis of coherence between the PDI and the institutional actions" and not by specific actions.

Table 5 Management Indicators identified and categorized in SINAES

Human Capital	Relational Capital	Structural Capital
Accreditation of course staff by degrees	Communication of the HEI with the external community	Institutional mission, goals, and objectives of the IDP
Professional experience in the field of teaching	Institutional self-assessment concerning the participation of the academic community	Educational policies and academic-administrative actions for undergraduate courses
Professors' experience in the higher teaching profession	Coherence between the IDP and institutional actions geared towards economic and social development	Procedures for evaluating the teaching-learning processes
Scientific, cultural, artistic, or technological production	Social responsibility	Institutional policies and stimulus actions related to the diffusion of academic-scientific, didactic-pedagogical, technological, artistic and cultural productions
Curricular contents		

Source: the authors

Regarding academic qualification, professional experience, and professor education, some similar points were identified and others with considerable differences between the two frameworks. In the case of Brazil, the qualification of the faculty of the course is evaluated and there is a specific indicator that refers to the “percentage of professors who hold a doctorate degree”, and the concept attributed by the evaluators varies from one (if nonexistent) to five (in that the percentage of doctors is more than 35%). On the other hand, the Austrian framework does not even

mention a percentage of professors with such a degree since the focus is on the quality of the services provided and the academic-scientific production of professors.

In view of this, it is reasonable to suppose that managers of Brazilian HEIs will have on their staff the percentage of professors with a doctorate degree slightly above the stipulated (35%) in order to obtain the maximum grade in this respect and will not feel encouraged to increase this percentage once the hour/class value is higher compared to other degrees. It is to be assumed that such an approach compromises the national academic-scientific production, among others.

A point of greater similarity between the two assessment frameworks corresponds to the evidence of the professional experience of the professors. In the Brazilian framework, the professional experience related to the area of the professors' work is evaluated, as well as experience of the teaching staff in the higher teaching profession. In Austria, in addition to full-time teaching experience, the costs for projects in the area of education in Europe and the number of professors who serve as presidents, members, or collaborators outside the HEI are also evaluated.

With regard to professor education, the Brazilian framework checks the existence of a professor education and accreditation policy, while in Austria the evaluators analyze the number of people who effectively participate in personal training and development programs, a subtle but important difference.

The collections of the libraries, be they physical or digital, and availability of access are analyzed in a similar way in both frameworks. However, Austrian HEIs also analyze library activities such as events, exhibitions, and lectures along with the circulation of books and magazines through effective loans. For them, just as important as having the material available, is that it is constantly used.

The items related to the curricular structure of the courses are more prominent in the Brazilian framework since it has categories related to the structure and content taught. In Austria the focus is on the percentage of students enrolled in a particular curriculum. It is important to mention that

in Brazil the undergraduate courses must follow a curricular directive imposed by MEC, a fact that helps explain the existence of such categories.

One of the most distinguishing points between the two frameworks is the indicators related to innovation and intellectual property. In Brazilian HEIs, the intellectual production of professors is computed and measured by the number of publications in periodicals, books, or participation in scientific projects or events. In Austrian HEIs, in addition to academic production, participation in R&D programs and the creation of patents are also rated, indicating an important stimulus to a more active stance in innovative processes.

A recurring item in the Austrian framework, but not predicted in indicators adopted in Brazil, are the incentives granted for courses and research in other countries. In Austria, items such as (i) the number of full-time students with participation in international mobility programs, (ii) the number of persons (scientific or artistic) with at least a five-day stay in another country, and (iii) the number of diplomas obtained in international programs.

Finally, international exchange and cooperation actions between HEIs are items that are undeniably more present in the European framework. In Brazil there is only one indicator to evaluate international interactions. On the other hand, the Austrian framework encourages actions of international cooperation through a series of indicators either by sending its students or by receiving foreign students. In describing their student body, Austrian HEIs are keen to indicate the country of origin of each student.

Table 6 presents the characteristics of the two frameworks analyzed based on the point of view of the comparative analysis.

Table 6 Synthesis of similarities and differences between Wissensbilanz and SINAES

Main Similarities	Teaching experience: training, acting, representation Collections: availability and use Insertion of minorities: genres and ethnicities
Main differences	Innovation and intellectual property: market participation and copyright Internationalization: mobility and participation in events Curricular guideline: level of regulation of higher education

Source: the authors

CONCLUSION AND FINAL REMARKS

Intellectual Capital is usually classified in the Human, Relational, and Structural Capital dimensions and its dissemination results in a series of benefits for organizations, especially for HEIs. In Brazil, the HEIs that strictly follow the indicators present in the national system of assessment of higher education end up prioritizing IC items, even if this happens in an embryonic way. On the other hand, Austria pioneered reporting on its intangible assets by creating a specific disclosure tool and by deliberately boosting its HEIs into the current knowledge economy.

This study aimed at analyzing the HEI assessment frameworks adopted in Brazil and Austria from the aspect of disseminating Intellectual Capital in order to explore and evidence similarities and differences. To this end, an analysis of the instruments of institutional assessment and of courses adopted in those countries was undertaken. The findings here describe a comparative research based on a bibliographical and documentary review using the method of comparative analysis of analytical categories.

The main points in common identified were (i) the promotion of scientific, cultural, artistic, and technological production; (ii) mandatory by law; (iii) the analysis of the professional experience of the professors in HEI environments; and (iv) social responsibility actions. On the other hand, the main differences present in the frameworks analyzed were (i) the relative importance attributed to professor qualifications, (ii) the incentive for courses and research in other countries, and (iii) the level of specificity in the indicators related to social inclusion and diversity actions.

When analyzing the frameworks, it was possible to identify some similarities between the points prioritized through the existence of indicators to be assessed by the Austrian and Brazilian HEI, but the way in which each country develops its actions differs considerably.

The main differences identified lie mainly in the way in which Austrian HEIs treat items of Human Capital and Relational Capital (soft skills), seeking to disseminate information about their students and activities involving other universities and countries. In Brazil, the focus of HEIs is

mainly to highlight elements of Structural Capital (hard skills) with the dissemination of its resources, artifacts, and management modes.

The results of the study may provide insights and contributions to professional and academic practice. HEI managers, agents of government agencies, professors, consultants, researchers, and other professionals working in the Brazilian educational industry can benefit from this work since it provides a greater understanding of the dissemination of intellectual capital by HEI and what are the value drivers of the HEI themselves, thus creating strategic differentials for deciding when and where to establish alliances, how to reach superior value, and how to share it with stakeholders.

The combination of the different lenses/dimensions of interpretation of the phenomena in knowledge-intensive organizations (LIMA et al., 2016) on the two frameworks of HEI assessment results in contrasting propositions (Table 7) that particularize them and point out the need for more discussion in future studies about the purpose and means of inputs, processes, and dissemination about the contribution and value generated by higher education.

In a scenario of notorious state presence such as the Brazilian one, whether through direct investments or student financing, in-depth discussion of such contrasting dimensions and propositions is vital to creating a framework capable of dealing with the social and managerial follow-up of the investments made by the Federal Government.

The present research was subject to some limitations: (i) the language barrier that restricted the understanding at a deep level of certain details contained in Austrian documents written in German and (ii) the level of abstraction present in the categorization undertaken for the classification of human, relational, and organizational capital dimensions of existing indicators in the instruments of institutional assessment and courses of the Brazilian framework.

Table 7 Organizational dimensions of the frameworks and propositions for future studies

Dimension	Brazil – SINAES	Austria – Wissensbilanz
Institutional	Accountability to the Government	Communication aimed at the market / society
Informational	Regulatory and procedure-oriented	Indicative and results oriented
Ontological	Normative framework	Value creation
Epistemological	Public Administration – State Bureaucracy	Organizational Strategy - Performance
Methodological	Checklist of tangibles	Scope of evaluation of intangibles
Systemic	Regulated and Closed Cycles	Spontaneous and Open
Cultural	Hierarchical and Short-term	Community and Long-term
Paradigmatic	Functionalist	Structuralist
Complexity	Mechanical, Incremental, and Local	Dual, Quantum, and Networking

Source: the authors

For future research, it is suggested to expand this study by adding data and facts related to the disclosure of IC in HEIs so that there is a shift from the exploratory field to the descriptive, adding even initiatives present in other countries, and also to advance the link among dimensions and propositions that frame the study of organizations (Table 7) and the conditions and implications of creating value so as to reach a more intentional and intensive practice of Intellectual Capital management. Studies of this nature may facilitate providing a specific framework for the dissemination of Intellectual Capital and therefore of value creation for Brazilian HEIs or of other nationalities.

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