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Research Article

The Social Representation of IT Governance: The Standpoint of IT Professionals

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ABSTRACT

This study sets out to identify the social representation of information technology governance (ITG) according to information technology (IT) professionals. Empirical data were collected via online questionnaires answered by IT professionals, being subsequently analyzed by means of the social representation theory (SRT) operationalized via the words evocation technique and the four quadrants of the Vergès' approach. As a result, it was identified that the central nucleus of the social representation of ITG comprises the following expressions: control, management, strategy, alignment, and planning. A cognitive dissonance between the definition of ITG according to the extant literature and the understanding of ITG according to IT professionals is then revealed. This fact can contribute to the total or partial failure of ITG initiatives, as the benefits promised in the existing literature or derived from the implementation of good practices in this domain are based on an ITG notion that is not fully understood by IT professionals. Therefore, recommendations are presented to align ITG theory with the perception of IT professionals on the subject.

Keywords: IT governance; social representation theory; words evocation technique

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INTRODUCTION

Information technology (IT) governance has attracted increasing interest both in the business realm and academia as can be witnessed by the existence of several practical guidelines aiming to provide guidance on the implementation of IT governance (ITG), as well as the significant increase of scientific publications on this issue (Alves, Riekstin, Carvalho, & Vidal, 2013; Brown & Grant, 2005; Joshi, Bollen, Hassink, De Haes, & Van Grembergen, 2018; Lunardi, Maçada, Becker, & Van Grembergen, 2017; Raymond, Bergeron, Croteau, & Uwizeyemungu, 2019).

Indeed, market globalization has demanded that organizations ensure the adequacy of their controls to broader and more accountable regulatory frameworks and standards of corporate governance. Thus, since the inception of the Sarbanes-Oxley Act and the consequent need of new processes for the monitoring of companies, ITG was highlighted, which has fostered the need for new practices for IT risk management to be adopted by organizations (Buckby, Best, & Stewart, 2009). Besides the financial risks associated with IT investments and expenses, ITG must also address operational risks accrued from the increasing complexity, sophistication, and dependence of business at large on IT (Alreemy, Chang, Walters, & Wills, 2016; IT Governance Institute, 2003; Papazafeiropoulou & Spanaki, 2016; Van Grembergen, De Haes, & Guldentops, 2004).

Both business and IT executives perceive that to date IT success has not been based on IT per se but on the way it is managed (Ilmudeen, Bao, & Alharbi, 2019; Peterson, 2004; Wu, Straub, & Liang, 2015). For example, after surveying 250 large companies in 23 countries, Weill and Ross (2004; 2005) found that companies that successfully implemented ITG achieved better results than their competitors, mainly due to their ability to make better and more consistent decisions on IT. On the other hand, the rapid development of IT and the wide diffusion of information systems in organizations have made ITG a complex and often misunderstood concept, a fact that can lead ITG initiatives to fail (Abu-Musa, 2007; Asgarkhani, Cater-Steel, Toleman, & Ally, 2017; Haghjoo, 2018).

While several organizations have implemented ITG in the past few years, research into how IT professionals actually understand and perceive this construct is scarce (Mota & Marques, 2013; Teodoro, Przeybilovicz, & Cunha, 2014; Silva, Silveira, Dornelas, & Ferreira, 2020), being this a research gap (Coertze & von Solms, 2014; Mahy, Ouzzif, & Bouragba, 2016; Simonsson & Ekstedt, 2006; Webb, Pollard, & Ridley, 2006; Wilkin & Chenhall, 2010). Thus, a question arises, namely: What is ITG per se? In other words, what is the perception of IT professionals regarding this construct? Do they perceive ITG as the construct is described in academic literature?

One of the significant reasons for rejection of papers submitted to scientific journals is the absence of clearness about the construct under scrutiny (Suddaby, 2010). Kerlinger (1973) characterizes a construct as an idea intentionally and deliberately developed or embraced for a particular scientific reason. In other words, a construct is a conceptual abstraction of a phenomenon that cannot be observed directly. As indicated by Priem and Butler (2001), constructs cannot be reduced to specific perceptions, being otherwise dynamic meanings of

observed classifications. These classifications should be adequately powerful to permit academics and practitioners alike to recognize the construct being referred to. Constructs are, consequently, the bedrock of any theory (Eisenhardt, 1989; Suddaby, 2010), which confirms the importance of clearness in their definitions. However, the meaning of a construct is defined from the common sense of a collectivity. As one does not live isolated, but in a social group with which the world is shared, such meaning becomes a social representation, that is, it defines a social reality (Jodelet, 2001; Silva, Camargo, & Padilha, 2011; Silva, Camargo, & Padilha, 2011). That way, social representations have a great potential for clear definition of constructs in the information systems (IS) area, as this area deals directly with the advancements in information technology and so new constructs turn up evenly, leading academics to investigate them most of the time without knowing exactly their actual meanings (Joia & Marchisotti, 2018). Moreover, the application of social representations might confirm (or not) findings accrued from works that have used other methodological approaches. As an example, one can cite the study of Joia and Correia (2018) that compares and discusses critically the CIO competencies obtained via multivariate statistics analysis (Vreuls & Joia, 2012) with the social representation of it from the CIOs' perspective.

Thus, based on what was presented above, this work aims to answer the following research question: What is the social representation of IT governance for IT professionals? To answer this question, this article uses the social representation theory (SRT), which is a "theory of social knowledge" specifically concerned with how individuals, groups, and communities collectively make sense of socially relevant or problematic issues, ideas, and practices (Marková, 2008, p. 483). That way, it is intended to identify the perceptions of IT professionals in relation to the ITG construct — since in most cases this social group is responsible for IT governance initiatives in organizations — in order to compare the social representation obtained with the existing literature to identify cognitive similarities and gaps.

To do that, this article is structured in five sections after this introductory presentation. The second section sets forth the theoretical references used in this work, addressing topics on ITG and social representation theory. The third section describes the methodological procedure followed and, in the fourth section, the aforementioned procedure is applied to generate the social representation of ITG. In the fifth section, the results obtained are compared to the extant literature on the ITG construct definition, the similarities and cognitive gaps between these two strands being duly identified and discussed. In the final section, the academic and managerial implications of this research, its limitations, and further research to be developed on this subject are set forth.

THEORETICAL REFERENCES

IT governance: A polysemic construct

Brown and Grant (2005), Simonsson and Johnson (2006), Webb, Pollard, and Ridley (2006), Mota and Marques (2013), Teodoro et al. (2014), and Silva, Silveira, Dornelas, and Ferreira (2020), to name just a few, observed that the ITG construct does not seem to be clearly addressed in the vast existing literature on the subject, as it does not have a common meaning for different

authors, revealing the existence of a wide range of definitions for this term according to different perspectives. The sundry definitions of ITG have distinct approaches, which vary according to the researcher's objective or the methodological angle adopted (Brown & Grant, 2005; Webb et al., 2006; Silva, Silveira, Dornelas, & Ferreira, 2020).

Webb et al. (2006) identified an overlapping of concepts accrued from the following knowledge areas: ITG, corporate governance, and strategic planning of information systems, suggesting a correlation among these three disciplines.

Many authors see ITG as a senior management concern with the control of the strategic impact of IT (IT Governance Institute, 2006; Ribbers, Peterson, & Parker, 2002; Weill & Ross, 2004; Van Gremberger et al., 2004). Thus, several definitions reflect the pressing need to ensure the alignment of IT with the business strategy and organizational objectives (Alves et al., 2013; Bermejo, Tonelli, Zambalde, Santos, & Zuppo, 2014; Van Gremberger & De Haes, 2009; Van Gremberger et al., 2004; Webb et al., 2006; Weill & Ross, 2004). Besides the IT-business alignment, Van Gremberger, De Haes, and Guldentops (2004) propose three other aspects of ITG: IT business value, IT management, and IT performance management. Webb et al. (2006) added another element to this list, namely IT control and tracking accrued from the tenets of corporate governance. Other authors equate ITG with structures, authority patterns, or responsibilities for decision-making related to IT (Alves et al., 2013; Information Systems Audit and Control Association [ISACA], 2012; IT Governance Institute, 2006; Lunardi, 2008; Peterson, 2004; Simonsson & Johnson, 2006; Weill & Ross, 2004), this vision being corroborated by benchmark institutions on ITG, such as the ITG Institute (ITGI) and the Information Systems Audit and Control Association (ISACA). Moreover, there are authors who associate ITG with relationship processes and skills (Weill & Woodham, 2002; Peterson, 2004; Van Grembergen et al., 2004), in addition to the mechanisms related to decision-making.

In this respect, Peterson (2004) describes the three key dimensions for successful IT governance implementation:

(a) Structures: roles and responsibilities formally defined within organizations for IT decision-making, involving the creation of committees to ensure the use of IT in line with the organizational strategy (Sambamurthy & Zmud, 1999).
(b) Processes: defined and implemented according to IT-related good practices frameworks such as the Information Technology Infrastructure Library (ITIL) and the Control Objectives for Information and Related Technology (COBIT). These processes refer to the planning, decision-making, and tracking of IT strategies (ITGI, 2003; Webb et al., 2006).
(c) Relationships: information flow between IT and all other corporate areas, including the stakeholders, to ensure the IT alignment with the business requisites. They include IT participation in other business areas, strategic dialogue, shared learning, appropriate communication, and use of incentives and rewards for collaboration (De Haes & Van Grembergen, 2005; Brown, 2006).

Based on that, Table 1 consolidates the various definitions of IT governance extracted from the existing literature, which, after being analyzed, seem not to take into account all dimensions of

this construct, preferring to focus on specific facets of it. Thus, in Table 1, the various definitions of ITG, the key dimensions associated with them, and the respective references are presented according to the chronological order of their publication.

Table 1

ITG definitions from the scientific literature

ITG definitions	Key dimensions	References
ITG is based on structures or architectures (and the associated authority patterns) implemented to conduct feasible activities (imperatives of IT) in response to the organizational environment and strategic intentions of the company.	Structure, Strategy	Sambamurthy and Zmud (1999)
ITG refers to responsibility structures and entitlement to decision-making to elicit desirable behaviors in relation to IT.	Responsibility, Structure, Decision	Weill and Ross (2004)
ITG is the organizational competence exerted by the board and IT executives to control the formulation and implementation of IT strategies to ensure the business-IT alignment.	Control, Strategy, Alignment	Van Grembergen et al. (2004)
ITG is the system by which the IT portfolio of an organization is managed and controlled, comprising (a) distribution of decision-making and responsibility entitlement on IT issues among all the organization's stakeholders and (b) rules and procedures to make IT strategy-related decisions and track them.	IT Portfolio, Management, Control, Decision, Responsibility, Rules and Procedures, Strategy	Peterson (2004)
ITG is the strategic alignment of IT with the business in order to maximize the business value via IT governance development and maintenance of effective IT control and tracking, performance management, and risk management.	Strategy, Alignment, Value, Control, Performance, Management, Risk	Webb et al. (2006)
ITG basically concerns the IT-referred decision-making process: from the elaboration of it to the implementation of the decisions related to the objectives, processes, personnel, and technology both at tactical and strategic levels.	Decision, Process, Personnel, Strategy, Tactics	Simonsson and Johnson (2006)
ITG is a responsibility of the organization's board and executives. It is an integral part of corporate governance, comprising leadership mechanisms, organizational structure, and processes that ensure IT can support and enhance the organization's strategies and objectives.	Leadership, Structure, Process, Strategy	IT Governance Institute [ITGI] (2006)
ITG is the system by which current and future IT use is guided and controlled. It involves assessment and management of IT use to support the organization in monitoring it to achieve its plans. It includes strategies and policies for IT use in the organization.	Control, Assessment, Management, Monitoring, Planning, Strategy, Policy	*International Organization for Standardization* [ISO] / International Electrotechnical Commission [IEC] (2008)
ITG comprises the system in charge of distributing responsibilities and rights on IT decisions, as well as managing and controlling the technological resources of the organization, aiming, thus, to ensure the IT alignment with the organizational strategies and objectives.	Responsibilities, Rights, Decision, Management, Control, Alignment, Strategy	Lunardi (2008)
ITG refers to the board's responsibility in overseeing the definition and implementation of processes, structures, and relationship mechanisms in the organization in order to enable IT-business alignment and consequently the business value of IT.	Responsibility, Process, Structure, Relationship, Alignment, Value	Van Grembergen and De Haes (2009)
ITG allows the information and the related technologies to support and enable the organization's strategy and objectives in order that IT capabilities can be provided with efficiency and effectiveness.	Strategy, Capabilities, Efficiency, Effectiveness	Information Systems Audit and Control Association [ISACA] (2012)

Continues

Table 1 (continued)

ITG definitions	Key dimensions	References
ITG can be defined as the specification and assignment of decision entitlement, processes and communication mechanisms for IT management and control, leading IT to be strategically aligned with the business and allowing the delivery of IT-enabled value to the business.	Decision, Process, Communication, Management, Control, Strategy, Alignment, Value	Alves, Riekstin, Carvalho, and Vidal (2013)
ITG is an important organizational skill to promote IT-business alignment and the delivery of IT value for the business. To implement IT governance, the companies may use a set of practices associated with decision-making processes and relationship mechanisms.	Alignment, Value, Practice, Process, Decision, Relationship	Bermejo, Tonelli, Zambalde, Santos, and Zuppo (2014)

As can be seen, the ITG construct encompasses sundry dimensions raised by several academics. Thus, it is important to investigate whether these ITG dimensions are recognized by IT professionals involved with IT governance in their companies, which will be seen below.

Social representation theory

The social representation theory (SRT) proposed by the psychoanalyst Serge Moscovici in 1961 focused for more than twenty years on the social psychology realm. However, as social representations are situated between the social and psychological domains, they are clearly of interest to all human sciences, and are therefore used in the area of management (Jodelet, 2001).

A social representation is a socially elaborated and shared form of knowledge seeking to build a common reality for a social setting (Moscovici, 1961), and being characterized as a form of practical knowledge linking a subject to an object (Jodelet, 2001). Representations are always built socially and anchored in concrete situations experienced by the individuals who elaborate them, carrying, thus, the hallmarks of the subjects as well as their activities. Therefore, they express those who construct them, providing a specific definition of the objects that they represent. These representations, being shared within a group, develop a consensual vision of the reality for this group (Jodelet, 2001). In this manner, social representations are recognized as interpretation systems that govern the relationship of persons with the world as well as with others, thereby guiding and organizing people's social behavior and communication. Based on this, the use of social representations in scientific research is justified when one intends to investigate how society or specific social groups have been related to certain social phenomena.

In line with that, SRT has been used in the information systems area as argued by Joia and Marchisotti (2018), who showed several works that applied SRT to refine the definition of constructs. In this sense, one can cite the work of Vaast, Boland, Davidson, Pawlowski, and Schultze (2006) to represent knowledge management, Dulipovici and Robey (2013) to represent knowledge management systems, Joia and Correa (2018) to represent CIO competences, Joia and Marchisotti (2020) to represent cloud computing, and Joia and Melon (2020) to represent IT projects success, to name just a few.

Thus, in the context of this work, SRT is used to reveal the social representation of the ITG construct according to IT professionals, being it operationalized through the central nucleus theory and the words evocation technique, as explained below.

Central nucleus theory

Based on the SRT, other ancillary theories were formulated such as the central nucleus theory (CNT), proposed by Jean-Claude Abric in 1976. It is based on the structural-cognitive stream (Rocha, 2009) of the SRT complementary theories, being used in this research to identify the main elements that structure and organize the ITG construct for the group surveyed.

The CNT sets up an internal hierarchy between the elements that form a social representation, some of them being imperative while others are merely peripheral. The most important elements are organized into the central nucleus, which ascribes a meaning for the representation, while the less important ones compound the peripheral system (Sá, 2002).

The central nucleus knowledge assists in the identification of the key aspects of a social representation. In this nucleus, the values and perceptions that are shared with more clarity and cohesion by the group under analysis are located (Madeira, 2001; Mazzotti, 2001). Thus, the values that comprise the central nucleus of a representation are prescriptive in relation to the person's behavior. These values represent a sort of collective memory of the group that shares the representation, playing the role of building consensual meanings that aim to contribute to make the group more homogeneous. They are more stable and resistant to change, not being influenced by the current social context, namely by recent facts (Madeira, 2001; Sá, 2002).

The structure of a social representation is modified only when elements are added to or removed from its central nucleus (Abric, 1993; Sá, 2002; Vergara & Ferreira, 2007). Yet, these situations used to be rare, being usually restricted to the occurrence of significant events that lead the subjects to rethink their values, expectations, and concepts in a radical way (Vergara & Ferreira, 2007).

Besides the central nucleus, a peripheral system addresses the differences in perception of the subjects involved in the research, thereby supporting the group's heterogeneity, and accommodating the contradictions brought by the immediate context (Abric, 1993; Sá, 2002). It is composed of elements around the central nucleus that the individual may revise and negotiate. It constitutes a protection shield for the central nucleus, allowing exchanges with other groups. It therefore enables the evolution of the social representation without modifying it (Madeira, 2001; Sá, 2002).

In the context of this work, CNT is used to identify the central nucleus and the peripheral system of the social representation of the ITG construct according to IT professionals through the words evocation technique, as explained in the ensuing section.

METHODOLOGICAL PROCEDURE

This is an exploratory research developed via a qualitative-quantitative approach. That is to say, the quantitative issues present in the construction of Vergès' framework for the identification of the components of the social representation are associated with the qualitative issues related to the interpretation of the meaning of the elements under analysis for the group surveyed (Oliveira, 2007).

The universe of the subjects of this research is formed by IT professionals who declared to understand the expression ITG. The rationale for this choice is based on the need for IT governance to be mastered by the respondents, as well as detected in the group's communication and behavior (Sá, 1998, p. 44). According to Sá (1998), this requisite is necessary to avoid the risk of obtaining a 'pseudo-representation' that has not emerged from the daily life of the group.

Through discussion groups of IT professionals hosted on social networks of which the researchers are members, 706 people who had professional activities related to any dimension of ITG were reached and contacted. The survey questionnaire was then sent to these professionals, being answered by 142 people — a return rate of almost 20% —, a reasonable value for questionnaires sent to respondents (Marconi & Lakatos, 2005).

The questionnaire developed and applied to the IT professionals comprises three sections: words evoked by the respondents, open questions to assist in the understanding of the words evoked by them, and open and closed questions to identify the sample's demographics, as presented in the Annex.

The words evocation test and the ancillary questions were sent to the IT professionals via email containing a link to be clicked directing the respondent to an online tool for data collection supported by Google Forms, which was made available for 24 days, namely from 11/07/2019 to 11/30/2019.

The 142 IT professionals who answered the questionnaire were asked to evoke the first five words or expressions that came to mind spontaneously when they were shown the expression ITG. This procedure characterizes the free words evocation technique, which aims to obtain the first words/expressions that spring to mind in a sample of respondents when a word or inducing expression is presented to them (Vergara, 2005).

To avoid any possibility of including professionals unacquainted with the expression ITG, the first question of the questionnaire enquired the following: "Are you acquainted with the term ITG?" This question served as a filter, thereby discarding the questionnaires that included the word "no." As two respondents declared that they were not acquainted with the term ITG, their questionnaires were discarded, which led to 140 questionnaires in total to be analyzed. According to Moscarola (1990) and Marchisotti, Oliveira, and Lukosevicius (2017), SRT-based research using at least 100 responses has a consistently higher rate of success.

In addition to this, to better understand the expressions evoked by the respondents, three open questions were presented to the respondents enquiring: (1) "Of the evoked expressions, which one do you consider the most important?"; (2) "Why did you choose that expression?"; and (3) "What do you mean by ITG?" Finally, open and closed ancillary questions were applied to collect the demographics of the sample. To facilitate understanding, the questionnaire used is presented in the Annex.

DATA ANALYSIS AND RESULTS

Sample's demographics

The open, semi-open, and closed questions were fully answered by 140 respondents. Yet, the words evocation technique was not fully filled out by 22 respondents (15.7% of the total), thereby generating 38 (5.4%) less evocations than the expected total of 700 (i.e., five evocations per respondent).

The average professional experience of the 140 respondents was 16.9 years and their average age was 44.1 years old. Marchisotti (2014), in research on the social representation of cloud computing according to IT professionals, found similar values, namely 15 years for the average professional experience and 40 years old for the average age of the respondents.

Of the 140 respondents, 42 (30%) were female and 98 (70%) were male, thereby reflecting a predominantly male IT market, which is corroborated by Ahuja (2002), Major, Morganson, and Bolen (2013), McGee (2018), and Kenny and Donnelly (2020).

It was verified that only three IT professionals in the sample (2.1%) did not hold at least an undergraduate degree. Moreover, 18 IT professionals (12.9%) held an undergraduate degree, 75 IT professionals (53.6%) hold a post-graduate/MBA degree, and 44 IT professionals (31.4%) hold a master's degree or were attending a master's program, also in line with Marchisotti (2014) on the academic degree of IT professionals.

Furthermore, regarding the academic background, from the 140 respondents, 52 (37.1%) had an IT background, 42 (30%) had an engineering background, 28 (20%) had a background in administration, 4 (2.9%) had a background in economics, 3 (2.1%) had a background in psychology, and 11 (7.9%) had other academic background.

The IT professionals selected to take part in this research worked in IT project management (46 of them — i.e., 32.9%), IT services management (16 of them — i.e., 11.4%), IT financial planning (13 of them — i.e., 9.3%), internal customer relationship (12 of them — i.e., 8.6%), and software development (11 of them — i.e., 7.9%). This information reflects the diversity of professional areas in which the IT professionals worked.

Moreover, 44 respondents (31.4%) served as managers while the other 96 (68.6%) performed technical functions.

Lastly, 130 respondents (93.2%) acknowledged the existence of an IT governance model implemented in their companies. The 10 IT professionals who did not detect an IT governance model in their organizations were not discarded from the words evocation test as they could have a particular and specific idea on IT governance that might not tally with the practices of IT governance in other companies.

Thus, the aforementioned data suggest that the IT professionals sample is adequate for this study as it is consistent with the IT market setting.

In Figure 1, the sample demographics are consolidated.

Figure 1

Respondents' profile

Total number of respondents	140
Average professional experience	16.9 years
Average age	44.1 years old
Gender	Female — 30% Male — 70%
Academic degree	No undergraduate degree — 2.1% Undergraduate degree — 12.9% Post-graduate/MBA degree — 53.6% Attending a master's program/Holding a master's degree — 31.4%
Academic background	IT — 37.1% Engineering — 30% Administration — 20% Economics — 2.9% Psychology — 2.1% Others — 7.9%
IT area of work	IT project management — 32.9% IT services management — 11.4% IT financial planning — 9.3% Internal customer relationship — 8.6% Software development — 7.9%
Professional status	Managers — 31.4% Technical functions — 68.6%

Vergès' quadrant development

To analyze the data collected via the words evocation technique, the framework developed by Pierre Vergès, namely Vergès' quadrant, was used, being supported by EVOC software. The Vergès' quadrant framework complements rather than replaces Moscovici's seminal theory (Moscovici, 1961). It is based in a statistical process that calculates the percentage of frequency of occurrence of the categories, accompanied by their order of importance, being used to determine the central nucleus – where the categories with the highest ranking in importance and frequency are located – and the peripheral system of the social representation (Marzal, Budiman, Hutabarat, & Kurniawan, 2021).

The Vergès' quadrant framework adopts two reference values – namely, average frequency of evocation (AFE) and the mean value of the average order of evocation (AOE) – for positioning the evoked words within its four quadrants. For this, it crosses the frequency of evocation of

words (of a quantitative nature) with the average order of evocation of words (of a qualitative nature) (Correia, 2013; Marchisotti, 2014; Oliveira, 2007; Sá, 2002).

According to Sá (2002), Carvalho (2009), and Marchisotti (2014), the first stage in constructing Vergès' quadrant is to categorize the words evoked, organizing them into semantic clusters or categories (Sá, 2002).

To achieve this, the criteria recommended by Kalache, Veras, and Ramos (1987) were followed: (a) grammatical analysis of genre and number; (b) analysis of synonyms and semantic similarities; (c) analysis of the meaning of each expression evoked. Thus, the distinct words/expressions that meant the same thing were grouped and then converted into a single expression that represented a semantic category.

Among the words belonging to the same semantic cluster, the most cited was used as the benchmark for converting the others. Therefore, the 662 words originally evoked were reduced to 89 distinct semantic categories.

It was then necessary to define the minimum frequency of evocation, namely the minimum number of times a semantic category must be evoked in order to be allocated into the Vergés quadrant, namely, to be considered a component of the social representation (Sá, 2002; Carvalho, 2009; Marchisotti, 2014).

A table unveiling all evocations in ascending order of evocation already converted into semantic categories was then elaborated.

It was observed the existence of 16 semantic categories evoked only once, 16 semantic categories evoked twice, eight semantic categories evoked three times, and so on up to the highest frequency of evocation is achieved, namely 69, represented by only one semantic category.

In addition to this, the total of evocations in decreasing order was calculated, as presented in the third column of Table 2. The fourth column of Table 2 sets forth the same information of the third column, albeit in percentages.

For example, in Table 2, the highlighted line shows that considering the 13 distinct semantic categories (the sum of the shaded values in the column 'amount of semantic categories' that have an evocation frequency between and including 11 and up to and including 69), there are a total of 332 evocations, representing 50.2% of the total of 662 evocations.

The minimum frequency that represented nearly 50% of all evocations (Marchisotti, 2014) was established, which corresponds in Table 2 to a frequency of 11, being associated with 50.2% of all evocations (see the line featured in Table 2).

The next step was to define the average frequency of evocation (AFE) associated with the social representation under analysis. To calculate the AFE, the median value of the evocation frequency

of the 13 semantic categories that complied with the minimum frequency criterion was used, this value being 19.

The second reference value of Vergès' quadrant – the mean value of the average order of evocation (AOE) – corresponds to the weighted mean of the average orders of evocation of all semantic categories.

Table 2

Semantic categories vs. evocation frequencies

Frequency	Amount of semantic categories	Decreasing sum of evocations	Decreasing sum of evocations (%)
1	16	662	100%
2	16	646	97.6%
3	8	614	92.7%
4	4	590	89.1%
5	4	574	86.7%
6	8	554	83.7%
7	5	506	76.4%
8	3	471	71.1%
9	5	447	67.5%
10	7	402	60.7%
11	1	332	50.2%
14	1	321	48.5%
15	1	307	46.4%
16	3	292	44.1%
19	2	244	36.9%
28	1	206	31.1%
29	1	178	26.9%
37	1	149	22.5%
43	1	112	16.9%
69	1	69	10.4%

Thus, the evocation order corresponding to the position in which the semantic category was ranked by the respondent, namely the average order of evocation (AOE) of a semantic category, is none other than the mean value of the evocation orders in which all respondents evoked all words/expressions that compound the respective semantic category (Oliveira, 2007; Sá, 2002; Vergara; 2005).

For instance, if a semantic category is evoked in first place, it will have an evocation order of one; if it is evoked in second place, its evocation order will be two, and so on. Therefore, the AOE calculation is performed as below for the 89 semantic categories identified:

$$AOE = \frac{(1 * f_1) + (2 * f_2) + (3 * f_3) + (4 * f_4) + (5 * f_5)}{f_1 + f_2 + f_3 + f_4 + f_5}$$

where

f_1 = number of times the semantic category was evoked in first place;
f_2 = number of times the semantic category was evoked in second place;
...
f_5 = number of times the semantic category was evoked in fifth place;
and so:
$f_1 + f_2 + f_3 + f_4 + f_5$= number of times the semantic category was evoked.

Having established the average orders of evocation of each of the 89 semantic categories, the mean value of the AOE was calculated, as presented below:

$$Mean\ Value\ of\ the\ AOE = \frac{\sum_{i=1}^{89} AOE_i * f_i}{\sum_{i=1}^{89} f_i}$$

where

AOE_i = average order of evocation of the semantic category *i*;
f_i = number of times the semantic category *i* was evoked;
and so:
$\sum_{i=1}^{89} f_i$ = total of evocations = 662.

In this manner, the value of 2.91 was obtained for the mean value of the AOE, which was rounded to 2.9.

Thus, all parameters needed for building Vergès' framework were calculated, as shown in Table 3.

Table 3

Parameters used in the development of Vergès' framework

Parameter	Value
Minimum frequency of evocation	11
Intermediary frequency (median)	19
Mean value of the AOE	2.9

Table 4 depicts the distribution of the semantic categories accrued from the words/expressions evoked within Vergès' framework, whereby the social representation of IT governance was created.

In the upper left quadrant – the categories with frequency of evocation greater than the AFE and evocation order smaller than the mean value of the AOE –, the elements that make up the central nucleus – in charge of generating the stable and organized meaning of the social representation – were placed.

The categories with frequency of evocation greater than the AFE and evocation order greater than the mean value of the AOE were placed in the upper right quadrant. These are categories that despite being highly cited have little importance for the respondents, compounding the first periphery of the central nucleus and having a close relationship with it.

The words with frequency of evocation smaller than the AFE and evocation order smaller than the mean value of the AOE were placed in the lower left quadrant, being considered very important for a small group and having a close relationship with the central nucleus. They are elements of the contrast zone.

Lastly, the categories with frequency of evocation smaller than the AFE and evocation order greater than the mean value of the AOE were placed in the lower right quadrant, not being highly relevant for the social representation. These elements compound the peripheral system of the social representation.

Table 4

Distribution of the semantic categories within Vergès' framework

	Order of evocation < Mean value of the AOE (2.90)	Order of evocation > Mean value of the AOE (2.90)
Frequency of evocation > AFE (19)	**Central Nucleus** Control (69; 2.16) Management (37; 2.46) Strategy (29; 2.72) Alignment (19; 2.42) Planning (28; 2.64)	**1st Periphery** Processes (43; 3.05) Direction (19; 3.11)
Frequency of evocation < AFE (19)	**Contrast Zone** Framework (16; 2.63) Organization (14; 2.00) Responsibilities (11; 2.64)	**Peripheral System** Guidelines (16; 2.94) Standardization (16; 3.63) Decision (15; 3.47)

DISCUSSION

As the upper right and lower left quadrants have a close relationship with both the central nucleus and the peripheral system, they are difficult to be interpreted and are therefore generally disregarded (Vergara, 2005). Thus, the categories placed in both the central nucleus and peripheral system are discussed below.

Central nucleus elements

From Vergès' framework (Table 4), it can be observed that the Control, Management, Alignment, Strategy, and Planning semantic categories comprise the central nucleus of the ITG social representation.

Besides, by analyzing the words each respondent answered via open question as being the most relevant for the definition of the term ITG, it was verified that the Control, Management, Alignment, Strategy, and Processes semantic categories were considered the most important ones, corresponding to 23% of the total of words answered. All of these categories apart from Processes were identified as components of the central nucleus of the social representation of ITG according to Vergès' framework. The Planning category, which is placed in the central nucleus of Vergès' framework, was ranked as the sixth most relevant category in representing ITG, as indicated by the respondents via open question.

Therefore, an adequate match between the words expressed as the most relevant for the respondents can be perceived when defining the ITG construct and the categories comprising the central nucleus of Vergès' framework.

The Control semantic category stands out in the central nucleus as having the greatest evocation frequency (69) and the lowest order of evocation (2.16). It totals 38% of all evocations related to the central nucleus, being also considered by the respondents as the most important one to define ITG.

The importance of the word 'control' for the definition of ITG can be verified in most of the extant academic literature. Webb et al. (2006) argue that issues related to control and tracking are linked to the essence of ITG, as well as corporate governance. They point out that effective mechanisms are needed to ensure and control an adequate IT-business alignment. Likewise, Alves et al. (2013) consider that control issues for ITG are operationalized via decision-making initiatives and communication processes aimed at aligning IT strategically with the business to add value to the organization. Thus, respondents present a view that is in line with the existing literature on the importance of control for ITG, arguing that this is necessary to ensure a more effective and less risky IT.

Some excerpts from the respondents confirm the importance of control issues for ITG successful operation, as presented below:

> "[IT governance] acts like a control mechanism, setting up policies and rules that guide the alignment of IT processes with the company's strategy" (Respondent #97).

> "[IT governance] controls IT-business alignment in organizations" (Respondent #59).

A second semantic category that stands out in the social representation of ITG is Management, whose average order of evocation is 2.46, being evoked 37 times, which represents 20% of all evocations of elements of the central nucleus. Besides, it was also considered the second most relevant category in defining ITG.

According to Verhoef (2007), ITG has a direct impact on IT management, as it was due to the former that a set of rules is elaborated, defined, applied, and evaluated to manage all IT functions in an organization. Thus, ITG is responsible for identifying the key IT decisions and clarifying the roles and responsibilities associated with the decision-making process, as well as monitoring it (Weill & Ross, 2004). Alves et al. (2013) also argue that for ITG to ensure effective IT management and control, a hierarchical structure for decision-making processes and communication mechanisms needs to be set up. Moreover, IT management plans, builds, executes, and monitors the activities in line with the direction defined by the governance board aiming at accomplishing the corporate objectives (Information Systems Audit and Control Association [ISACA], 2012). Yet, there seems to be no difference for IT professionals between IT governance and IT management, as pointed out by Assis (2011). This can be perceived in excerpts accrued from most respondents as presented below:

> "Achieving success via IT governance means to perform a service with good resources management, thereby fulfilling the organization's expectations" (Respondent #2).

> "[IT governance] is the management of all processes related to the pursuit of IT via monitoring of indicators and their improvement" (Respondent #127).

Indeed, the deposition of one respondent unveils a cause-and-effect relationship between both concepts, albeit contrary to expectations:

> "Without good IT management, there is effectively no IT governance" (Respondent #100)

Other respondents seem to perceive management as a way to operationalize the decisions and guidelines established by ITG in the day to day of organizations, aiming at achieving a continuous alignment of IT with the company's objectives:

> "The company needs adequate IT management to operationalize IT governance in its daily activities. Without good IT management, there is no effective IT governance" (Respondent #29).

> "[IT governance] must take care of operational and tactical IT management" (Respondent #67).

The conclusion reached is that there is no single and homogeneous meaning for the term 'management' for the interviewed group. For most respondents, the perceived ambiguity between 'management' and 'governance' suggests that the ITG models are predominantly linked to the organization's operational and tactical levels rather than the strategic ones.

The other three semantic categories identified as possible elements of the central nucleus of the social representation of IT governance — Strategy, Planning, and Alignment —, while not being as relevant as Control and Management, are also perceived as important for the respondents as they present a lesser average order of evocation than the mean value for the AOE, accounting in total for 42% of all elements of evocations of the central nucleus.

The Strategy and Alignment semantic categories are analyzed jointly as, according to IT Governance Institute (2003), IT strategy is almost the same as business-IT alignment. According to the ISO and IEC (2008) standard, ITG includes strategies and policies for IT use in

organizations, involving, thus, the translation of business strategies into guidelines for IT activities and thereby reflecting the alignment of IT with the objectives of the organization (ITGI, 2003; Peterson, 2004; Lunardi, 2008).

Strategy was the third most cited semantic category in the central nucleus, corresponding to 16% of all evocations of the elements of the central nucleus, whereas Alignment corresponded to 10% of the total. However, Alignment presented the second lowest order of evocation of social representation, which highlights the relevance of this expression for the respondents who evoked it.

Weill and Ross (2004) contend that the senior-level decisions on the strategic role of IT must be on the radar of ITG. The IT-business alignment is cited by several academics as one of the key elements to be addressed by ITG, as it is responsible for delivering IT value for the organizations (Alves et al., 2013; Bermejo et al., 2014; Ribbers et al., 2002; Van Gremberger et al., 2004; Van Grembergen & De Haes 2009; Webb et al., 2006).

Some respondents commented that:

> "IT governance encompasses several IT activities that must be governed by the strategic planning of IT, which in turn must ensure the alignment of IT with the corporate strategy for it to be possible to generate the outcomes sought by the organization" (Respondent #34).

> "The main role of IT governance is to enable the alignment of IT with the company's strategy in order to generate value for it" (Respondent #47).

Thus, the understanding of the respondents regarding Alignment and Strategy seems to tally with the scientific literature on ITG, thereby reflecting the importance of the strategic role of IT in the organization (Chi, Huang, & George, 2020; Ribbers et al., 2002; Van Gremberger et al., 2004; Weill & Ross, 2004; ITGI, 2006; Wu et al., 2015).

The last element of the central nucleus, Planning, represents 15% of all evocations of the elements of the central nucleus, being ranked as the sixth most important category for defining ITG.

The relevance of the words categorized as Planning is partially related to the optimization of IT resources to satisfy the demands, as can be seen in the following deposition:

> "It is through planning that IT defines the requests to be accomplished, prioritizing them according to the available resources and ensuring the necessary capacity to meet the needs" (Respondent #50).

A strong link between the Planning semantic category and the planning process of IT investments, including the stages of prioritization and tracking of the physical-financial schedule, was observed, as set forth in the following deposition:

> "I understand [IT governance] as how IT plans its portfolio of new solutions, investments, services, acquisitions, etc., or even their improvement. It also involves the guidelines and criteria for prioritization,

> validation, and approval of the needs, as well as the management and tracking of the IT project schedules" (Respondent #51).

Thus, for the respondents, ITG appears to be associated with planning activities, which might be justified by the fact that ITG can be implemented in the respondents' companies seeking to optimize the IT resources to reduce the costs for the organization. For this reason, the focus of ITG on budgetary discipline appears to be justified in order to improve the planning of the IT portfolio and the respective monitoring of physical and financial progress. In fact, for Weill and Ross (2004) and Karhade, Shaw, and Subramanyam (2015), prioritizing IT investment decisions, as cited, is one of the multiple facets of ITG. However, while the IT investments planning is singled out by Weill and Ross (2004) as one of the responsibilities of ITG, this component is not addressed directly by any ITG construct definition found in the scientific literature.

Peripheral system elements

The Decision, Guidelines, and Standardization semantic categories, located in the lower right quadrant in Table 4, were identified as components of the peripheral system of the ITG social representation. These components reflect the least rigid issues of the social representation under analysis. Thus, although associated with ITG according to IT professionals, these components are not considered essential by them for its understanding, being easily modifiable, and regulating and adapting the central nucleus to individual daily experiences (Sá, 2002; Marques, Oliveira, & Gomes, 2004).

According to the literature review, it would be expected that Decision would be located at the central nucleus of the social representation of ITG, since several of the ITG definitions depicted in Table 1 (Alves et al., 2013; Lunardi, 2008; Peterson, 2004; Simonsson & Johnson, 2006; Weill & Ross, 2004; ISACA, 2012) highlight this category in a clear and explicit way. Indeed, the definition of corporate governance — from which the ITG definition is derived — sets forth decision-making as a key element for defining the construct (Organisation for Economic Co-Operation and Development [OECD], 2004).

Yet, the Decision category presented an evocation frequency of 15, which although close to, it is lower than the average frequency of evocation (16), having also an average order of evocation (3.47) far higher than the mean value of the AOE (2.9). These facts support its possible location, contrary to expectations, in the peripheral system of the ITG social representation. Besides, this category did not stand out among the expressions considered as being relevant for the definition of the ITG construct.

A possible explanation for this might accrue from the historical fact that the IT area used not to be in charge of decisions on the prioritization of IT demands (Bloom, Garicano, Sadun, & Van Reenen, 2014). IT governance has not brought a significant change in this decision-making process, as this process remains out of the IT area domain, migrating from the business area to the area in charge of managing the process that this IT requirement seeks to attend, as also supported by Xue, Liang, and Boulton (2008). Thus, the IT area role in this decision-making process is restricted to giving technical support to the process managers, thereby solving doubts

and expressing considerations in relation to the requests received, as also unveiled by Xue et al. (2008) and Bloom, Garicano, Sadun, and Van Reenen (2014).

With respect to decisions about the strategic role of IT and even on some issues about the IT architecture — supported by Weill and Ross (2004) and Raymond, Bergeron, Croteau, and Uwizeyem (2019) as responsibilities of ITG —, the IT area seems to have little autonomy to develop practical outcomes. Indeed, the IT area seems to make decisions on issues merely related to IT services and infrastructure, as also supported by Wu, Straub, and Liang (2015) and perceived in the excerpts below.

> "IT governance must make decisions about how IT can enable the company's strategy. However, most of the time, it is not the IT area that is in charge of this, being only responsible for decisions related to the operation of the area" (Respondent #127).

> "Unfortunately, the IT area does not have autonomy to make decisions about how to use IT strategically, being responsible only for the IT operation and services" (Respondent #74).

Another possible component of the peripheral system is the Guidelines semantic category, which appears to be closely linked to the decision-making processes, which, for the sake of coherence, must follow guidelines and orientations established by senior management. According to Assis (2011), ITG sets up orientations and guidelines in order that IT management can implement the decisions made. This characteristic is clearly highlighted in this deposition:

> "Some of the purposes of IT governance are to define objectives and supply guidelines for conducting IT activities and decision-making processes" (Respondent #39).

Thus, from the definition, promotion, and clear comprehension of the above guidelines — established by senior personnel of the IT area — it is possible to ensure the alignment of IT with the organization's strategy.

The last element of the peripheral system is Standardization, which raises the perception that it is necessary that IT activities comply with pre-established standards to ensure homogeneity in the conduct of activities developed in different areas. The category also seems to be related to the need to ensure the standardization of processes in organizations to control them through frameworks of reference such as ITIL, COBIT, and the like. The Standardization category, therefore, supports the company in implementing IT-related decisions, streamlining their management and ensuring that IT activities are kept firmly aligned and in full compliance with the business strategy, as shown below:

> "The importance of standardization is necessary to ensure that all professionals work in a harmonized way, knowing their responsibilities and the company's objectives in order to contribute to the efficiency of the organization's management" (Respondent #28).

As can be seen from the excerpts, the Guidelines and Standardization categories seem to be the same for IT professionals. From an academic point of view, the category Guidelines is not directly associated with the definition of ITG, being cited by Assis (2011) as one of the elements generated by the ITG to allow IT management to implement the decisions made. Thus, it can be inferred

that Guidelines and Standardization should be merged into a single category for the social representation of ITG, named in this work as Standards.

ITG social representation vs. ITG scientific literature

Based on what was presented, one verifies that most of the ITG components arisen by the academic literature are present in the social representation of this construct according to the IT professionals. Some of these elements are highlighted in the central nucleus, thereby revealing it to be essential for the group for the definition of the construct. Others have a secondary importance, being located in the peripheral system, and there are also some other components whose interpretation is inconclusive, as they are located in the contrast zone and first periphery quadrants of the ITG social representation.

Table 5 crosschecks the scientific literature on ITG with the IT professionals' perceptions about it, reflected in the social representation identified, thereby unveiling the commonalities and dissonances among them.

CONCLUSION

This research concludes that the IT professionals' perception regarding the IT governance construct definition involves just some of the elements set forth in the aforementioned literature review, supporting several scholars who highlight the sundry definitions on IT governance found in the extant literature on this subject.

The control feature of IT governance is prominent in the central nucleus of this social representation, proving that at this point the IT professionals' perception is very closely aligned with the IT governance literature and also unveiling strong ties with the corporate governance construct definition (Alves et al., 2013; Lunardi, 2008; Peterson, 2004; Van Grembergem et al., 2004; Webb et al., 2006).

Another issue regarding the IT governance construct — considered as being very important by IT professionals — refers to the alignment of the IT area with the organizational strategy, which tallies fully with the scientific literature on the subject. Indeed, the IT strategic alignment was highlighted and referred to in several definitions presented in this work (ITGI, 2003; Lunardi, 2008; Peterson, 2004; Weill & Ross, 2004).

Table 5

Comparison of the IT governance social representation with the extant literature

Components of ITG	Description of ITG components	Scientific literature (references)	Perception of IT professionals via SRT
Alignment	IT governance: Aims to ensure the strategic alignment/merger between IT and business; • Support and enable the organization strategy to achieve its objectives and plans; • Regulates the formulation, execution, and control of the IT strategy.	Sambamurthy and Zmud (1999); Peterson (2004); Van Grembergen et al. (2004); Simonsson and Johnson (2006); Webb et al. (2006); ISO and IEC (2008); Lunardi (2008); Van Grembergen and De Haes (2009); ISACA (2012); Alves et al. (2013); Bermejo et al. (2014); Wu et al. (2015); Chi, Huang, and George (2020).	Mandatory (central nucleus)
Strategy			
Control	Control and tracking of IT; • Control of the IT portfolio.	Peterson (2004); Van Grembergen et al. (2004); Simonsson and Johnson (2006); Webb et al. (2006); ISO and IEC (2008); Lunardi (2008); Alves et al. (2013).	
Management	IT management (tactical and operational).	–	
Planning	Budgetary planning of IT.	–	
Decision	Decision-making on IT — Who decides what?	Peterson (2004); Weill and Ross (2004); Simonsson and Johnson (2006); Lunardi (2008); Alves et al. (2013).	Secondary (peripheral system)
Standards (Guidelines and Standardization)	Guidelines for decisions and activities related to IT; Standardization of IT activities via frameworks of reference such as ITIL, COBIT, etc.	Iden and Eikebrokk (2014); Ramlaoui and Semma (2014); Schaefer, Baierle, Nara, Benitez, and Haetinger (2020).	

However, other issues highlighted in the IT governance literature were not identified in the social representation, namely: (a) to ensure that IT investments generate value for the organization (Alves et al., 2013; Bermejo et al., 2014; Webb et al., 2006); (b) to manage IT performance (ISACA, 2012; ISO and IEC, 2008; Van Grembergen et al., 2004; Webb et al., 2006); and (c) to manage IT risks in the organization (Fernandes & Abreu, 2014; Van Grembergen et al., 2004; Webb et al., 2006).

Therefore, the conclusion to be drawn is that the ITG construct definition has not been fully grasped by the IT professionals notwithstanding several facets of it already appear to be consolidated, such as the need to control IT and ensure IT-business alignment.

Academic and managerial implications

In the academic sphere, this article revealed that, in general, the multifaceted aspects of ITG have not been fully exploited by researchers in the area, which can lead to reductionist views of this field of knowledge, as well as confusion between different disciplines, such as lack of differentiation between the IT governance and IT management constructs – something little

researched by academia. Indeed, in companies with a successful ITG, their business objectives, metrics, and scorecards are fully compatible with the mechanisms and approaches used to manage IT (Weill, 2004; Wu et al., 2015; Zhang, Zhao, & Kumar, 2016). However, IT management and ITG are not what IT professionals think (Van Grembergen & De Haes, 2005; 2009). There are authors who argue that IT management is a component of ITG. However, these authors relate ITG to IT management at the strategic level, rather than the operational and tactical levels (see ISO and IEC, 2008, and Alves et al., 2013), as perceived by IT professionals. Thus, academia should delve into this topic, researching and clearly defining the real differences between IT management and IT governance, which, until now, has been a source of confusion.

Another academic contribution of this article refers to the use of social representation theory in the area of ITG – a recent field of knowledge whose conceptualization still lacks consensus in the academic world (Silva, Silveira, Dornelas, & Ferreira, 2020; Webb et al., 2006). Therefore, using SRT to investigate the social representation of ITG according to IT professionals can add value to the existing body of knowledge on how this expression is effectively understood and applied in practice.

In addition, another academic contribution of this work is the proposition of a monosemic definition for the ITG construct, based on the categories located in the central nucleus of the social representation of ITG according to IT professionals, namely: ITG is an integrated IT 'control,' 'planning,' and 'management' system implemented in an organization, in order to allow the 'alignment' of IT with its 'strategy' – where in italics one highlights the categories located in the central nucleus of the social representation of ITG. Thus, both academia and practitioners highlight the importance of the categories in italics for a successful ITG implementation, this being an organizational context where the proposed definition may be worthwhile.

Regarding managerial contributions, this article reveals cognitive dissonance between the components of the IT governance construct as described in the extant literature and those perceived by IT professionals, which may lead IT governance projects to fail or fall behind their objectives, as the benefits promised in the literature and good practices frameworks are based on a construct whose definition has not been fully understood by IT professionals. As an example, it was noted that while academia highlights the importance of IT-related decision-making and management processes (Alves et al., 2013; Peterson, 2004; Lunardi, 2008; Weill & Ross, 2004; Simonsson & Johnson, 2006) for a company to achieve an adequate business-IT alignment, IT professionals underestimate them. Thus, capacity-building initiatives must be developed by companies, aiming to give their IT professionals an understanding of the importance of these processes.

Moreover, it was also realized that for IT professionals the use of ITG good practices frameworks (such as COBIT, ITIL, etc.) is not mandatory for ITG to be successfully deployed in their organizations, since the Standard category ended up being in the peripheral system of the Vergès quadrant, which let it not to be considered in the proposed ITG definition. In other words, this finding influenced the herein proposed definition of ITG from the perspective of IT professionals. However, most research emphasizes the value of complying with these frameworks for successful ITG implementation in organizations (Alreemy et al., 2016; Nfuka & Rusu, 2011;

Urbach, Buchwald, & Ahlemann, 2013). As such, senior management must be aware of the importance of establishing an organizational context in which IT personnel are conscious of the relevance of following established ITG standards for a successful implementation of IT governance in their organizations. That way, senior management and IT leadership should jointly develop capacity-building programs on the importance of implementing and applying world-class ITG frameworks in their companies so that they can institutionalize ITG good practices and thus compare their ITG maturity levels with those of your competitors.

Finally, it was noticed from the depositions that, most of the time, the IT area has not been responsible for the business-IT alignment in organizations — one of the most important facets of ITG —, being only responsible for decisions related to the operation of the area. Therefore, organizations must hold the IT department accountable for achieving proper IT strategic alignment.

Research limitations

As with all research, this article reveals some limitations. First, the external validity of the results obtained cannot be guaranteed, as the survey involved a specific group of IT professionals. Moreover, the categorization of semantic categories, although conducted according to what is prescribed in the scientific literature and with the support of EVOC, may have been influenced by some bias on the part of the authors. Besides, although Vergès' structure has been widely applied in studies on the identification of social representation, auxiliary techniques were not used, such as implicative statistical analysis (Gras, Suzuki, Guillet, & Spagnolo, 2008), which might have shown how the elements of the central nucleus relate to each other. Finally, the words evocation technique was originally developed to be conducted face to face (interviewer/interviewee) (Moscovici, 1961). However, this fact makes it very difficult to reach an adequate number of respondents, especially in continental countries. Several authors have applied online word evocation tests in their research on social representation (Joia & Correia, 2018; Joia & Marchisotti, 2020; Joia & Melon 2020, to name just a few). In addition, there are authors that analyzed the differences between online and offline data collection, pointing out that the internet can be a reliable substitute for filling out paper questionnaires (Riva, Teruzzi, & Anolli, 2003). Other authors explicitly support the adequacy of online applications of the word evocation technique (Jung et al., 2009). Thus, although there are several articles that applied the word evocation technique as used in this research and studies that support the adequacy of this procedure, it was decided to raise this issue as another limitation of the study.

Based on the conclusions of this work, a set of further studies on the social representation of IT governance can be proposed to better define this construct. In this respect, a longitudinal analysis could be performed to identify the evolution of the IT governance construct definition for IT professionals over time. Besides, it would also be interesting to enlarge the IT professional sample to foster the external validity of the findings herein presented.

In the final analysis, when dealing with such a recent theme, whose concept is polysemic, it is to be hoped that this work has contributed to better define the ITG construct, which is paramount for advancing the research on this subject.

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ANNEX A

QUESTIONNAIRE FILLED OUT BY THE RESPONDENTS

Are you acquainted with the term Information Technology Governance?
Yes
No

Average professional experience (years):_____

Gender:_____

Academic degree:
1. No undergraduate degree
2. Undergraduate degree
3. Post-graduate/MBA degree
4. Attending a master's program/Holding a master's degree

Academic background: _____

IT area of work:
1. IT project management
2. IT services management
3. IT financial planning
4. Internal customer relationship
5. Software development
6. Other

Professional status:
1. Manager
2. Technical function
3. Other

INSTRUCTIONS

Write down the five expressions that come to your mind when the expression Information Technology Governance is evoked (from the first expression that comes to your mind — #1 to the last expression that comes to your mind — #5):

Expression #1:
Expression #2:
Expression #3:
Expression #4:
Expression #5:

Of the aforementioned expressions, which one do you consider the most important?

Why did you choose that expression?

What do YOU mean by IT Governance?

Thanks for your participation!