Information Technology Governance Practices Adoption through an Institutional Perspective: the Perception of Brazilian and American CIOs

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Abstract

Information Technology Governance (ITG) has gained prominence in the organizational scenario specially because the need better management of IT assets. This article searched to understand how the incorporation of certain practices takes place using the institutional lens for structuring and analysis. The objective is to identify the influence of institutional factors in the adoption of ITG practices. A semi-structured interview guide with qualitative objective was administered to Brazilian and American CIOs. The answers from the IT executives in Brazil and the U.S. made it possible to identify the presence/absence of isomorphic mechanisms in the adoption of the practices. The results indicate that the Brazilian and the American CIOs have similar perceptions about the adoption of ITG practices. Both believe that the pressures are usually derived from the external environment, and may come from institutionalized practices, from professionalization of the field, and from models to be followed.

1. Introduction

Information Technology (IT) within organizations has become an essential tool for managing information, knowledge, and transactions in order to support social and economic activities. Due to the importance of IT, many organizations see it as an essential tool to manage their activities, and this implies a corporate management strategy focused on cost savings since "the real means to gaining competitive edge is IT" [21, p.247].

In the current context characterized by fierce competition, companies face many challenges to meet the expectations of all their stakeholders and to do what they need to produce accurate and timely information. However, it is necessary to ensure accuracy, protection, and security of this information because it deals with organizational assets that support the reputation of a company [11]. For organizations to achieve these objectives, they require good management with increasing levels of Corporate Governance and Information Technology Governance (ITG), meeting organization and all stakeholder expectations.

The institutions needed to adopt certain standards in search of its legitimacy due to the instability present in the organizational field. However, most studies regarding adopting ITG practices use a rational view of the factors that influence ITG. Based on the supposition that organizations share the same aspirations, survival in the same organizational field can be related to the use of isomorphic mechanisms in the quest of legitimacy. The purpose of this article is to understand how the incorporation of certain practices occurs in this environment.

To do so, and in order to highlight the external influences from the organizational context, Scott and DiMaggio and Powell was used for theoretical support [18, 6]. It was assumed that the institutional perspective goes beyond presuppositions such as rationality and efficiency for the incorporation of norms, rules, and socially constructed beliefs and their impacts on the behavior of organizations. The organizations adopt socially institutionalized structures without the objective of adopting an efficient structure, but the search of legitimacy in its organizational field [14]. So, once ITG is understood as present in an expanded context, researchers can use the Institutional Theory to analyze the organization's responses to institutional pressures, whether formal or informal, and by examining the institutional pressures and contexts they can better clarify how ITG is actually done [10]. Thus, the institutional perspective considers the irrationalities of the organizational context and the way in which organizations are influenced by this context.

Teo et al. [19] believe that the adoption of ICT may be related with the institutional environment in which a company is situated and may be influenced by the need for legitimacy in the environment in

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which they are. Liang et al. [12] extend the previous arguments by stating that the impact of institutional forces on adopting ICT is mediated by high-level management, which serves as an interface of an organization with the external environment.

The objective of this paper is to identify the influence of institutional factors in adopting ITG practices. This paper is exploratory in nature in order to identify possible relationships between variables. After the main ITG variables are identified, the main institutional factors that influence the adoption of their practices were selected based on an extensive theoretical framework along with their possible relationships. An instrument to collect data was then developed, validated, and subsequently CIOs in Brazil and the U.S. were invited to answer it, which made it possible to reach some conclusions on the subject.

2. Theoretical Background

In this section the theoretical aspects that serve as the basis for this research are addressed.

2.1. Corporate Governance and IT Governance

ITG is part of Corporate Governance in the same way IT is an integral part of the business. Corporate Governance is a set of practices and responsibilities exercised by top management [8] in order to ensure reaching strategic objectives while still adequately managing the company's risks and resources. ITG, on the other hand, is the set of practices and responsibilities with regard to IT decisions in order to ensure that objectives are achieved while providing alignment between IT and the business.

In the last decade a need has arisen for changing the way organizations are understood and managed because of scandals involving global corporations, up until then respected in the environment, which affected the credibility of organizations [22]. These scandals led to a crisis of legitimacy in the market resulting in an increased concern to protect those involved and the need for organizations to have good Corporate Governance. According to Weill and Ross, various associations have published guidelines for organizations to reach good Corporate Governance, such as the principles published in 1999 by the Organization for Economic Cooperation and Development (OECD) [22].

One of the external reasons that influenced the awakening of Corporate Governance was the institutional reviews produced by reactions to the corporate scandals by institutional investors as well as regulatory authorities and capital market institutions [22]. According to the authors, these reviews gave rise to more comprehensive and more severe legal regulations.

Some aspects of Corporate Governance can be analyzed under the institutional approach, such as regulatory, normative, and cognitive aspects in adopting Corporate Governance practices in organizations. One of the main regulatory reactions of governance was the Sarbanes-Oxley (SOX) act passed in 2002 in the U.S. that promoted extensive regulation of corporate life based on good governance practices. This law focuses on Corporate Governance values and brings a large impact and changes on the laws of other countries [22].

There is an association between Corporate Governance and IT [22]. Corporate Governance covers the relationship between the board and the senior executive team of an organization that carries out strategies and desirable behaviors to meet the stipulations of the board. According to these authors, desirable behaviors vary depending on the company, and they incorporate the beliefs and culture of the organization as defined and practiced not only by strategy, but also through statements of corporate value, institutional missions, business principles, rituals, and structures, which are essential for effective governance.

Companies have six core assets by which they carry out their strategies: human assets, financial assets, physical assets, Intellectual Property assets, information and IT assets, and relationship assets. The governance of these assets occurs through organizational mechanisms that include structures, processes, committees, procedures, and audits. Information and IT assets have specific practices and mechanisms, which are the ITG mechanisms [22].

Several factors motivate companies to implement ITG. Some of them are as follows: the growing dependence of companies in relation to IT, the increasing complexity of IT, the need for integration of systems and solutions, the pressure to reduce costs and generate value from IT investments, and the need for transparency required by the stakeholders [15].

In the same view, according to Marrone, Homann, and Kolbe, ITG processes have generated attention from the organizations because of the fact that the role of IT is changing to become a strategic partner of the organization and, therefore, the business has become increasingly more dependent on technology [13]. ITG, therefore, helps organizations to ensure IT is aligned with the business.

Regarding the concept of ITG, Sambamurthy and Zmud argue that "refers to the patterns of authority for key IT activities in business firms, including IT infrastructure, IT use, and project management" [16, p.261]. The IT Governance Institute (ITGI) defines

ITG as an agent that is part of Corporate Governance "and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategies and objectives" [9].

In a complementary way, Verhoef says that ITG is a structure of relationships and processes for controlling the IT role in the organization in order to achieve its business goals and add value to the organization [21]. According to Weill and Ross, ITG is the specification of decision rights and responsibilities in the use of IT [22]. In this sense, governance defines who should make decisions and who is responsible for them within the organization in relation to IT. The vision of governance adopted in this paper is consistent with that of Bowen, Cheung, and Rohde, who understand ITG as decisions to define frameworks and methodologies to plan, organize, and control IT activities [5].

ITG has a behavioral side and a normative side in line with the precepts of the Institutional Theory in which symbolic and normative elements make legitimate the organizational structures and practices [22]. The behavioral side defines the relationships and decision rights along with the behavioral standards of the different stakeholders in the organization who interact with each other. The normative side, on the other hand, defines mechanisms, rules, and procedures to ensure that the objectives are met and it regulates the relationships and behaviors of individuals. These mechanisms, which may be the company rules or regulations, allow organizations to make decisions with respect to IT by addressing issues that define what decisions need to be made, who should make them, and how these decisions should be made [22].

2.2. Institutional Theory

The Institutional Theory studies aspects of the social structure considering the processes by which these structures, including plans, rules, norms, and routines, are established as guidelines for social behavior [17]. Avgerou suggests that the central argument of the Institutional Theory in the organizations is that the structures of a formal process are maintained because they are supported by assumptions shared as for their functionality as a need, turning it into a myth [1]. Therefore, the spreading of IT is sustained because it won over the hopes and fears of people in their professional roles, as well as in their personal lives, thus becoming a rational myth [2, 3].

The institutional studies address the homogeneity of organizations in the environmental context in which they are, [14, 4] and there may be a similarity in their ITG structures as they adopt legitimized standards. This way, as they internalize these routines as proper for their organizational field, they become an integral part of the field and the institutionalization process is in place.

Tolbert and Zucker define that the institutionalization process involves three stages that occur sequentially: habitualization, objectification, and sedimentation [20]. In the initial process of habitualization, or according to the authors pre-institutionalization, organizations tend to create new institutional arrangements in order to produce answers for the organizational problems detected, or it can also be through the formalization of these arrangements into policies or standards to be adopted by the organization. The objectification process, on the other hand, is committed to developing acquiescence among the decision makers in the organization in relation to the value of structure [20].

The adherence of other institutions by means of pre-used structures is more convenient because this adherence occurs by observing other organizations that have already incorporated this structure. Finally, the sedimentation process is the continuity of the structure and its perpetuation for several generations of members within the organization, and it relies on the historical continuity of the structure.

Scott proposes a definition of institutions based on three pillars: regulative, normative, and cognitive. The regulative pillar is useful as a basis for compliance and makes use of mandatory mechanisms, has an instrumental logic, is indicated by the presence of rules, laws, and penalties, and it is legally sanctioned in relation to its basis for legitimacy. The normative pillar has social obligation as the basis for compliance, adequacy as logic, and certification and acceptance as indicators, pointing to a morally regulated legitimacy. The third pillar, the cognitive one, is based on the acceptance of presuppositions and has a mimetic mechanism. It has an orthodox logic, its indicators are predominance and isomorphism, and it points to a basis of legitimacy that is supported culturally [18].

DiMaggio and Powell also identified some aspects of the model earlier proposed. They propose three mechanisms through which institutional isomorphic changes occur: coercive isomorphism, mimetic isomorphism, and normative isomorphism [6]. There is a tendency toward similarity in this process of adopting ITG practices in the organizations through the different isomorphism.

3. Theoretical Model

The model shown in Figure 1 is proposed based on literature review.

The model presents the following propositions:

P1a Regulatory compliance, which means that ITG practices institutionalized in the organizational environment are adopted by coercive pressures in order to obtain legitimacy by the organizations.

P1 The organizations that need legitimacy adopt ITG practices institutionalized by coercive pressures.

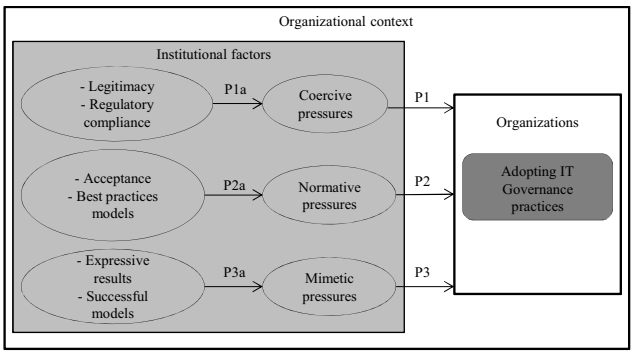

Figure 1. Theoretical Model

P2a Best practices models and certifications, meaning ITG practices semi-institutionalized in the organizational environment, are adopted by the organizations because of normative pressures.

P2 The organizations that need acceptance adopt ITG practices semi-institutionalized by normative pressures.

P3a Successful models and common beliefs, that is, ITG practices pre-institutionalized in the organizational environment, are adopted by mimetic pressures in order to obtain better results by the organizations.

P3 The organizations that need expressive results adopt ITG practices pre-institutionalized by mimetic pressures.

4. Research Approach

This research uses qualitative method for data collection. Researchers have assumed that reality is socially constructed through daily practices and everyday knowledge about the study [7]. It also adopted an exploratory perspective, as it does not want to make generalizations of the results reached so far. The possible relationships between the variables of influence of institutional factors in adopting ITG practices were understood and identified through the perception of IT Executives (CIOs) in Brazil and the U.S.

To do so, a structure of dimensions and variables was elaborated based on the theoretical model that enabled the production of a data collect instrument. The three dimensions defined were as follows: institutionalization processes that tried to identify aspects that influenced the decision making on the adoption of IT Governance practices; isomorphic mechanisms, that tried to identify the influence of mimetic mechanisms; and institutionalization stages that tried to identify the degree of institutionalization of practices considering the habitualization, objectification and sedimentation stages.

The data collection instrument consists of six open-ended question, in which the CIO was asked about the decision making process regarding the adoption of mechanisms for ITG. The CIO was invited to comment and justify his or her answers. The instrument was complemented with closed-ended question questions that helped check the consistency of the answers, and this is one of the exclusion criteria for responses. The open-ended question asked the reasons and the aspects considered during the prioritization in adopting ITG practices. Moreover, it was necessary to justify the influence of different factors considered in the decision process to adopt the practices and their use in the organizational environment. Some social demographic issues were requested at the end.

Before being submitted to the CIOs, the data collection instrument underwent a validation process with three researchers and one CIO. Some necessary adjustments were made in order to improve the instrument. Qualtrics Software was used for data collection. The instrument is available on the web address https://pucrs.qualtrics.com/SE/?SID=SV_bqDzmXiXAioP57n. Answers were received from 12 CIOs in Brazil and 28 CIOs in the U.S. from large and medium-sized companies. Nine answers from Brazil and 17 from the U.S. were considered for the study. The researchers were interested in obtaining qualitative responses that made it possible to make some inferences about the theme and identify possible relationships between the research variables.

Therefore no statistical treatments were performed. The content analysis was the method selected to perform the data analysis. The organization of data analysis occurred in stages, as proposed by Bardin [4], namely pre-analysis, exploration and processing and interpretation of results. The categories defined for the data analysis were based on the structure of dimensions and variables derived from the theoretical research.

5. Results

This section outlines the results from this research, resulting more specifically from the perception of CIOs in Brazil and the U.S.

5.1. Brazilian CIOs' perception

Adopting ITG practices: coercive isomorphism

Considering the regulative pillar [18] proposed by Scott, several coercive factors were identified that had an influence on the decision making process of the IT managers for adopting ITG practices. Considering that in the final stages of institutionalization the adoption of practices is driven by legitimacy, the coercive mechanism was analyzed as one of the propagators of an institutionalized practice through the process of sedimentation of the practices [20] as suggested by Tolbert and Zucker.

One of the factors analyzed is the fact that the practices or mechanisms adopted contribute to the achievement of regulatory compliance, as more than half of the respondents consider this an influential factor in the decision. According to respondent 7, "most companies seek these standards out for legal reasons." In relation to legitimacy from institutionalized practices, respondent 2 states that "to implement processes that help to obtain certifications and compliance such as SOX will help in the company's credibility in the consumer market."

Still, half of the respondents consider that a decision is influenced by the fact that adopting the practices contributes to obtaining certifications that are mandatory for the organization. However, for some respondents, there is still a greater focus on the results for the company than on obtaining legitimacy in the environment in which the organization operates. According to respondent 1, "the decisions about whether to use these practices or not were taken because of their importance for the company and not necessarily for business, legal issues."

Considering the stage of institutionalization of practices, it was noted that the adoption occurs also because they are propagated and perpetuated in the market where the organizations operate. Thus its diffusion occurs through the process of sedimentation, being in a stage of total institutionalization as suggested by Tolbert and Zucker. Legitimate practices begin to exist in this scenario dependent on the low resistance by opposition groups, the continued support from defending groups, and a positive correlation with the desired results [20].

Considering these aspects, the large majority of respondents agree that there is a consensus in the market about the importance of adopting the practices considered. Thus, it can be noticed that those who adopt such practices considered important have a certain level of recognition in the market segment, achieving legitimacy among other organizations as well as suppliers and clients. According to respondent 1, a factor that motivated the adoption of practices was "the existence of models with guidance about its implementation as well as its use and knowledge in the market."

Likewise, several respondents agreed that the market in general already uses or is in the process of adopting practices considered by the organization. Respondent 8 believes that specific moments in the market were taken into consideration to prioritize the practices adopted. Corroborating this point, according to respondent 5, "the standardization and use of good practices lead to better results, but what happens is that the mentality of immediate results makes it so that the adoption of these practices are only effective when enforced by law or imposed by the market. What I have noticed is that the adoption of the practices is widespread, very slow in its implementation, making it bureaucratic and increasing the organization's distrust in them."

Adopting ITG practices: normative isomorphism

The data analysis shows that normative factors influence the decision-making process to adopt ITG practices. According to Tolbert and Zucker, the spread of a practice occurs through regulatory mechanisms as it passes from the pre-institutionalization stage to higher stages [20]. For this reason, the analysis of the regulatory mechanism considered the adoption of the practices from a process of objectification [20].

With regard to the regulatory aspects in the adoption of ITG practices, respondents believe that certain factors may influence their decision. The main factor identified is the compliance of the market in which the organization operates with the regulations, in which the majority of respondents say that this factor contributes to the adoption of the practices. According to the respondent 3, "some are decisions taken for historic reasons, such as the use of MSF (Microsoft Solution Framework) and PMI (Project Management Institute) in the development area. The adoption of ITIL (Information Technology Infrastructure Library) is more recent and was defined by the compliance with the company's practices." In other words, the adoption of the practices in question are aligned with the business and, consequently, with the market in which the company operates.

As to obtaining the certifications targeted by the organization through to the adoption of ITG practices, half of the respondents agreed that this factor influenced the adoption of these practices. According to the respondent 7, "many companies are realizing the benefits of using best practices and have adopted these processes in their organizations. This

shows a greater concern for standards by organizations, as they see the results in adopting these practices." In addition, the respondent 3 said that because the organization has business expectations for the company's solutions, "it is important to adopt market practices."

With regard to the institutionalization stage of the practices, it was noticed a trend of adoption given that they have a more permanent and pervasive status. In other words, their diffusion occurs through the process of objectification, as they are in a state of semi-institutionalization. In this scenario, a social consensus on practices is formed, and the adoption risks can be analyzed along with the adoption performance by other organizations through the dissemination of the practices [20].

The vast majority of respondents agree that there is a proliferation of publications in this regard, given the books and articles on ITG practices on the market, which influences the use the practices themselves. However, one respondent feels that the publications focus on models and not necessarily the elementary concepts of ITG. Similarly, most respondents agree that there is a series of events and training programs for the dissemination of ITG practices, which facilitates the adoption of these practices. According to the respondent 3, "the adoption of the practices is facilitated by the organizations that support them. Thus, training, certification and best practices are already available, thus speeding up the adoption process." This statement confirms the points made earlier that the greater the dissemination of the practices through publications, events and training, the greater the tendency to adopt ITG practices.

Another aspect that influenced the adoption of ITG practices, according to most of the respondents, is the fact that it is possible to see the impressive results from the adoption of the practices by organizations. It is here that the social consensus proposed by Tolbert and Zucker occurs through the pursuit of evidence from different sources for assessing the risks, and monitoring other organizations for the adoption of "pre-tested" practices [20]. In the same view, an aspect considered in adopting ITG practices, according to respondent 7, is the fact that it be a "consolidated and tested market standard." Respondent 1 concurs, "the practices adopted are more general and commonly used on the market." In other words, a main consideration for the adoption of a practice is that it is considered a standard in the market in which the company works.

Adopting ITG practices: mimetic isomorphism

It was found that several mimetic factors influence the managerial decision to adopt ITG practices. Whereas mimicry is the impetus for the diffusion of a practice that is in the pre-institutionalization stage, the analysis considered its adoption from a process of habitualization of the practices [20].

One of the factors considered is the use of the practices by stakeholders, the most relevant, according to the respondents, being the competitors and suppliers. Most respondents agreed that the fact that major competitors, customers and suppliers using or in the process of adopting the ITG practices considered, influences the decision to adopt these practices by the organization. According to the respondent 4, "the best governance practices are disseminated to a large extent through the customer companies."

Another aspect analyzed is the success obtained with the use of ITG practices. For most of the respondents, the fact that the organizations using the practices considered are achieving good results influences the decision to adopt them by the organization itself. According to the majority of the respondents, the main aspect that motivated the adoption of the practices in their organizations is the expectation for improved performance, both in respect to the returns for the business and the improvements in processes and support for the organizational requirements, in addition to greater control of IT assets. According to respondent 2, the aspects considered in deciding whether the practice is adopted or not were "which practices would add value to the business and increase the potential performance of the company." Respondent 9 believes that what motivated the adoption of ITG practices was the fact that the organization is seeking "to improve decision-making in IT to ensure better utilization of IT assets." That is, an improvement in results influences the decision to adopt ITG practices, corroborating Tolbert and Zucker's statement that in the early stages of the institutionalization process, the adoption of the practices is driven by efficiency [20].

In relation to the two aspects discussed above, respondent 9 states that "our key largest customers, suppliers and competitors have already implemented, or are implementing, ITG best practices. From the experience of our organization, we believe they also had good results." Mimetic factors such as the decision to adopt ITG practices by other organizations and getting good results from their use have therefore influenced the decision of the organization to adopt such practices.

With regard to the institutionalization stage of the practices, it was noticed a trend of adoption as they assist in improving the results of the organization. In

other words, the diffusion of the practices occurs through the process of habitualization, in the pre-institutionalization stage. In this sense, the vast majority of respondents agree that the adoption of these practices assists in resolving problems or challenges in organizations. According to the respondent 2, "IT must seek to implement practices that benefit the business."

Furthermore, a number of respondents agree that the practices are adopted in a limited number of organizations, suggesting a homogeneous feature in the organizations that are adopting the practices [20].

According to the respondent 6, "we are seeing the adoption of the practices in similar organizations." The homogeneity of the organizations that adopt a practice suggests limited knowledge of the practices on the part of non-adopting organizations [20]. This is corroborated by some of the respondents, such as respondent 4, who states that "although a basic knowledge of governance practices are easily accessible, more in-depth knowledge still does not appear to be widespread. There are few advanced discussion forums or articles with more advanced practical questions." In other words, it could be observed the pre-institutionalization stage of some practices, given that they are adopted and disseminated among similar organizations.

According to the respondents, ITG practices should be better disseminated throughout the market, enabling improved knowledge and access. Respondent 7 feels that "there is still lack of studies, articles, and books on ITG. There could be more events on the subject. The market sees it as something important, but many companies that do not understand its importance or that lack maturity do not invest in best practices. "

5.2. American CIO's perception

Adopting ITG practices: coercive isomorphism

As regards coercive mechanisms, they tend to occur in institutionalized practices, in which their adoption is driven by legitimacy. One of the factors considered is the fact that the practices adopted contribute to achieving regulatory compliance, and the vast majority of respondents considers this an influential factor in the decision. In considering the adoption of SOX, respondent 22 says that it is "needed to comply to ensure being in business" and goes on to say that "all in the IT business need to adhere to this new rule." These statements therefore show a tendency on the part of organizations to adhere to institutionalized ITG practices. Moreover, most respondents consider that the fact that adopting these practices contributes to obtaining the certifications required by the organization influences the decision. According to the respondent 17, one of the aspects considered for adopting the practices are "board discussions and policy adoption," which delineate the practices to be adopted by the organization. In the opinion of respondent 22, the motivation for adopting practices such as SOX, was the need for "Quality Control for audit purposes", highlighting the need for regulatory compliance.

As regards the institutionalization stage of the practices, it was analyzed the existence of legitimate practices, dependent on the low resistance of opposition groups, the continued support by groups in favor and a positive correlation with the desired results. Considering these aspects, the majority of respondents agreed that there is a consensus in the market about the importance of adopting the practices in question and that the market, in general, has been already using or is in process of adopting practices considered by the organization. Respondent 7 feels that prioritization in choosing the ITG practices adopted is "based on the market needs".

Adopting ITG practices: normative isomorphism

With regard to the regulatory aspects in the adoption of ITG practices, respondents believe that certain factors may influence the decision. One of the factors identified are the compliance of the market in which the organization operates with the regulations. The majority of respondents say that this factor contributes to the adoption of the practices. They hold the view that there are standards on the market that end up being adopted by some organizations to obtain acceptance. Respondent 9 feels that “everyone uses the same standards but it is how you adapt them to your business that matters”. In other words, the adoption of the practices considered must be aligned with the business and, consequently, with the market in which the company operates, as it was also identified in the Brazilian scenario.

As to obtaining the certifications targeted by the organization through the adoption of ITG practices, there was consensus of the majority of respondents, unlike the scenario in Brazil, that this factor influenced the adoption of the practices. According to respondent 22, one of the considered aspects for adopting of SOX as an ITG practice in the organization was that it is a "(new) Business Standard." Respondent 24 said that “good business practices were considered in general” in the decision-making process for the adoption of ITG practices.

As regards the semi-institutionalization stage of the practices, the adoption risks and adoption performance by other organizations were analyzed, aside from the formation of a consensus on best

practices. Another aspect that has influenced the adoption of ITG practices, according to most of the respondents, is the fact that it is possible to see the impressive results from the adoption of the practices by organizations. According to the respondent 13, the prioritization of the practices occurred "through their performance appraisal", possibly with other organizations. Respondent 4 stated that the aspects considered for adopting he practices were "white papers with technology performance and TCO with ROI."

The vast majority of respondents agree that there is a proliferation of publications on ITG practices which influences their use. Similarly, most respondents agree that there is a series of events and training programs for the dissemination of ITG practices, which facilitates its adoption according to respondent 11 “one cannot implement policy without training and more training”. In other words, the respondent reiterates the importance of disseminating the practices to be adopted by organizations. Respondent 24 said that “these practices are gaining a lot of importance so there is a lot of literature available online”.

Adopting ITG practices: mimetic isomorphism

Compared to the study in Brazil, the U.S. scenario also identified mimetic factors that influence the managerial decision to adopt ITG practices. One of the factors considered is the fact that *stakeholders* are already using the practices in question. Most respondents agreed that the fact that major competitors, customers and suppliers using or in the process of adopting the ITG practices considered, influences the decision to adopt these practices by the organization. According to the respondent 12, it is important “not lag behind its competitors and obtain the customer's understanding” on the adoption of ITG practices. Similarly, respondent 7 agrees that the factors that motivated the adoption of the practices were the fact that “more competitors adopt the latest technology, competition”. For respondent 17, one of the aspects that influence the adoption is that “competitors are already using" ITG practices. According to respondent 27, the influence of competitors is more relevant than the others. He agrees with adopting the practices that “the main competitors are already using or are in process of adopting those practices”.

With regard to the success achieved, the majority of respondents wholly, or partly agree, with the fact that organizations, which use the considered practices, have obtained good results. This influences the decision to adopt these practices by the organization. According to several respondents, the main aspect that motivated the adoption of the practices in their organizations is the expectation for improved organizational performance. According to respondent 4, what motivated the decision was the "need for higher productivity and sales." As for the respondents 5, 18, 19 and 20, the key factor that motivated the adoption of the practices was the improvement in work efficiency and for the last 2, also a reduction in costs. Respondent 26 feels that the fact that “organizations that are using those practices obtained meaningful results” influences their adoption by the organization.

In analyzing the institutionalization stage of the practices, it was noticed a trend of adoption as they assist in improving the results of the organization. As in the case of Brazil, the vast majority of respondents agree that the adoption of these practices assists in resolving problems or challenges in organizations. According to respondent 11, any organization implementing ITG principles could see better results. Respondent 4 stated that with the adoption of ITG practices “the results have been positive and our organization has improved”, not to mention respondent 12 who adopted the practices to "improve operational efficiency."

Furthermore, the majority of respondents agree that the practices are adopted in a limited number of organizations, suggesting a homogeneous nature in the organizations adopting the practices. This similarity in organizational structure in the adoption of ITG practices is addressed by respondent 10, who say “it seems that most people are on the same level of features and service”. Another factor considered by respondent 24 is the fact that not all organizations have knowledge of the practices, for him "not all suppliers and customers are aware of these good governance practices,” demonstrating that they are not fully institutionalized.

6 Discussion and Implications

It was observed that the practices tend toward full institutionalization, as they are disseminated in heterogeneous organizations and have aspects such as low resistance from opposition groups, continued support by groups in favor and a positive correlation with desired results, originating from the sedimentation process in practice. In this case, the impetus for the adoption of the practices is primarily down to normative and coercive factors. They assist in the legitimacy and credibility of the company for its market, whilst remaining important to the improvement of the organization.

Although the focus of most respondents is on the pursuit for efficiency rather than legitimacy in the

marketplace, this characterizes a pre-institutionalization stage of the practices. In addition, other issues have been identified that tend to indicate more institutionalized practices were identified in the analyzed scenarios. As regards the need for efficiency, this will be included in the fact that in order for a practice to stay institutionalized, it will have to play a role in achieving the results desired by the organizations, a factor that proved decisive for the majority of survey respondents.

In relation to the homogeneity of organizations adopting the practices, it was noticed that some respondents felt that this factor was considered because, apparently, they limited themselves to an analysis of organizations active in the same market. However, as the research sample encompasses heterogeneous organizations, it found that the adoption of ITG practices occurs in different types of market (among those analyzed), tending to the semi or full institutionalization stages of the practices.

In analyzing the coercive mechanisms of adopting ITG practices, it was concluded that they can be considered one of the impetuses for disseminating the practices, through legal aspects and compliance regulations such as SOX, in order to obtain legitimacy for organizations. Other practices also have a normative character, obtaining certification and market acceptance for example, or a mimetic character, in the need for results similar to the pioneering organizations in the adoption of the practices under survey.

The comparative analysis between Brazil and the U.S. demonstrated to be very similar with regard to the influence of institutional factors in the decision to adopt ITG practices in the organizations studied. It was possible to see that some practices are adopted with the expectation of increased efficiency, as they are practices that are at the pre-institutionalization stage. This occurs in homogeneous organizations (competitors, customers and suppliers) due to the proximity and accessibility of use of the practices. The dissemination of these practices occurs in homogeneous environments through mimetic mechanisms based on the practices adopted mainly by competing organizations, in order to obtain similar results and to remain competitive in the market.

Among the possible explanations for the similarity of responses among American and Brazilian CIOs, some can be mentioned: a) the internationalization of Brazilian companies, which leads to greater use of standards used worldwide (the respondents are from multinational companies that are headquartered in the U.S., Europe or Brazil); b) Corporate Governance, widely discussed in Brazil and in the process of adoption in a large number of companies. Based on principles of Corporate Governance, organizations are trying to adopt the best practices adopted worldwide. A consequence of this is that expressions such as stakeholders in Brazil were unknown a decade ago, and are now part of the vocabulary and agenda of most Brazilians; c) the institutionalization process can lead companies to use practices which are very similar to each other in order to seek this homogenization as a way to feel more included in the business context.

Other practices seem to be in a more advanced stage of institutionalization, with dissemination in heterogeneous environments through a social consensus on their importance. In this scenario, there is analysis available of evidence of improvement in business results from the adoption of ITG practices by other organizations. This highlights the concern with competitors and other stakeholders, although seeking references on the performance benefits of these organizations with the adoption of certain practices. The market begins to have importance in the credibility of organizations in comparison to the others.

Finally, it was identified practices in the stages of full institutionalization, in which the focus of organizations is on achieving increased legitimacy and credibility with the target market. The adoption of practices occurs in heterogeneous environments through normative or coercive mechanisms, usually to adjust the rules and laws and to meet the market demands. This scenario occurs both in Brazil and the U.S. with regulations such as SOX for publicly traded companies that has a knock-on influence on companies worldwide to adopt ITG practices.

It was therefore identified a relationship between the stages of institutionalization of ITG practices, the needs of the organization with the adoption of the practices and the institutional mechanisms that operate in the decision-making process. When the organization needs legitimacy in the target market (customers, suppliers and competitors) it adopts institutionalized ITG practices (legal aspects, regulatory compliance), due to coercive pressures, in order to gain credibility and recognition by others, as suggested by the propositions 1 and 1a. When there is need for acceptance by other organizations, it ends up adopting standardized ITG practices in the environment in which it operates as best practices models for achieving certification, and it does so through regulatory mechanisms, as these practices are semi-institutionalized, as discussed in propositions 2 and 2a. As far as the need for efficiency and improved business results is concerned, organizations tend to adopt pre-institutionalized practices through mimetic mechanisms, based on the adoption of ITG

practices in similar organizations (usually competitors), also to stay competitive, as suggested by the propositions 1 and 1a. Therefore, this analysis agrees with the conceptual model proposed in the research, corroborating the propositions suggested.

7. Conclusions

This paper presented a comparison of the perceptions of Brazilian and American CIOs on the influence of institutional factors in the adoption of ITG practices and presented various propositions regarding the isomorphic factors that influence the adoption of such practices. To this end, it was proposed a conceptual model that guided the data analysis.

Therefore, attempt to identify the processes that influence the adoption of ITG practices, considering the influence of the business sector, in particular the pressures that organizations suffer. For this purpose it was looked to Institutional Theory to seek out a theoretical support for this focus for the analysis.

The analysis of the collected data indicates that both Brazilian and American CIOs, to a certain extent, share the same view regarding the reasons how IT managers decide to adopt ITG practices. Based on considerations of these executives, it is possible to see that there are pressures from the external environment that influence the adoption of such practices. These pressures usually come from the environment external to the organization and may also come from government policies, rules and institutionalized laws (i.e. SOX), the professionalization of the field (i.e. certification) and also the uncertainties that lead to a process of "imitation" of the pioneer companies in relation to any type of innovation (i.e. ITIL), in order to minimize the uncertainty facing the governance processes, not necessarily because they were the most suitable models for the organization.

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