

## The Influence of Organizational Culture on IT Governance: Perception of a Group of IT Managers from Latin American Companies

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### Abstract

*The IT Governance changes the form that companies make their decisions, organize their processes and define their organizational structures in order to obtain better decision-making in IT. Different factors contribute to the success or failure of the IT Governance model adopted by the organizations, among which the organizational culture. However, much research addresses this subject following a generic approach, not identifying the relationship with IT Governance. This empirical-exploratory study attempts to identify how the pillars of IT Governance are influenced by the variables that form the organizational culture. Based on a proposed conceptual model, 14 CIOs of Latin American companies, selected for convenience, were interviewed using a semi-structured instrument. The results demonstrated that, according to the perception of these managers, there is a strong influence of organizational culture in the IT Governance model, especially with regard to processes and structure.*

### 1. Introduction

In the literature, several studies show a relationship between IT Governance with the organizational culture. According to Schein [21], there is a direct and significant relationship between the organizational relationships and the respective organizational culture. In this sense, Weill and Ross [31] point out that all organizations have IT Governance implemented by the internal mechanisms (for example, committees and authorization and approval processes) that encourage behavior consistent with the mission, strategy, values, rules and the respective culture of the organization. The authors point out that companies have different forms of IT Governance to the detriment of their organizational culture, and the relationships of IT and the cultural organizational questions have impact in

the definition of the IT Governance model to be adopted. Such an approach allows inferring that there is a direct and significant relationship between IT Governance and the organizational culture through its relationships. However, what is the perception of the elements of organizational culture influencing the pillars of IT Governance?

In this research, the five elements of organizational culture (results orientation, orientation toward individualism, long-term orientation, orientation by gender and orientation by rules and patterns) that influence the pillars of IT Governance (structure, processes and relationships, according to [30]) were examined in a set of companies from Latin America. The research was based on the perception of a group of IT Managers, selected for convenience.

This study contributes with a gap encountered in the literature, identified through previous research. To develop the discussion proposed, this article is structured in the following manner: initially a theoretical foundation is introduced regarding the relationships between IT Governance and the factors of organizational culture, as presented in the theoretical model proposed; next the methodological aspects of the research are described and an analysis of the data is discussed; in the end, the final considerations are presented.

### 2. Background, Theoretical model and Proposal

#### 2.1 Information Technology Governance

According to Weill [30], IT Governance specifies the rights of decision and the responsibilities to provide incentives for desirable behaviors in the use of IT. IT Governance encourages the IT structure to better understand and support the organizational strategies and objectives, ensuring that its processes are directed to better organizational performance [29].

Prasad et al. [18] mention that IT Governance must consider all the interested parties and guarantee that the processes provide results, especially with the development of the entire organization. Thus, IT Governance has broad organizational impact, in which the organizational aspects directly or indirectly influence its success.

Weill and Ross [31] describe IT Governance as formed by three main pillars: structure, processes and relationships.

According to Weill and Ross [31], structural arrangements are formed by the business units and the functions and responsibilities for proper IT decision making. The process arrangements are directed to implementation of the management and definition of procedures according to the strategies and policies defined for IT. The relationships guarantee that the arrangements defined and the process of IT Governance are of IT, allowing taking advantage of the opportunities executed to ensure the effectiveness of the active use and directing greater value to the business [30, 2].

Another approach is presented by Van Grembergen et al. [28], making reference to the relationship of cultural influences within the alignment between IT and business, emphasizing the relevance of the culture for IT executives. Van Grembergen et al. [28] analyzing IT Governance, present the division of six principles divided by responsibility, strategy, acquisition, performance, conformity and human behavior, relating these principles with aspects of organizational culture. Hunter and Westerman [12] affirm that the value that IT generates for the business is related to the way in which IT Governance is implemented and its relationship with the other agents of the organization. The authors mention that this relationship depends on the culture in which the organization is set.

The pillars of IT Governance formed by the structure, processes and relationships are influenced by the internal and external contingencies of the organization. According to Sambamurthy and Zmud [20], IT Governance is influenced by its geography, segment, market, structure, strategy, role and also its culture, among other factors. Furthermore, Nfuka and Rusu [16] analyzed critical success factors in the implementation of the IT Governance, suggesting that the success of the managing communication of the directives and goals depends on organizational culture. Thus, implementation of the IT Governance in an organization involves a process of interaction with an organization at different levels and with interested parties, respecting organizational values and practices, which are factors related to the organizational culture.

Some studies on IT Governance are focused on structure and configuration, also called arrangements. According to Sambamurthy and Zmud [20], the suitable arrangement for each organization will depend on different factors and may be classified as centralized, decentralized or federative. Weill and Ross [31] expand this approach, classifying the structures in six possible archetypes, defined as business monarchy, IT monarchy, duopoly, federalism, feudalism and anarchy. This allows analysis of IT decision-making regarding the aspects of the principles of IT, IT architecture, infrastructure, need for applications and investments in IT.

This idea takes note of the decision-making characteristics of each organization, classifying them in a unique and monolithic manner. Meanwhile, Bowen et al. [2] disagree with this view, arguing that this approach ignores the IT activities and processes that occur internally. Additionally, it does not consider other dimensions of IT decision-making, such as strategic alliances and outsourcing of IT processes. The authors state that, in their research, the establishment, execution or assessment of the company structure for IT decision-making was not of primary concern for the IT executives. Instead, the executives were concerned with the definition of the roles and processes of decision-making, as well as the aspects of internal communication, organizational policies, and aspects related the organizational culture. Successful IT Governance requires an effective process of communication between the agents involved at different levels based on constructive relationships through a common language and according to the policies of each company and respecting its cultural aspects [13].

Another aspect to be considered when addressing IT Governance is its maturity within the organization. Simonsson et al. [22] affirm that in companies with higher maturity in IT Governance, there is a greater alignment of IT with the business and consequently, a greater contribution to organizational performance.

## 2.2 Organizational Culture

The term “culture” used in the literature is focused on the unit of analysis, such as a community, a nation, a company, a professional class or other type of group of individuals that share common characteristics and thoughts [17]. A culture is classified as a national culture, organizational culture, professional culture, functional culture or a group culture [23].

Due to its relevance in various aspects of the organizations, the organizational culture was a variable considered in various studies of the area of

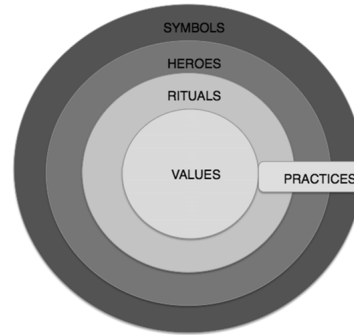
IS as the acceptance of technology [24] and the use of technology and of its conception [4]. Overall, there is a consensus that the concept of organizational culture is rather difficult to exactly define, measure and analyze, since there are various visions and organizational culture, it is necessary to adopt a systematic approach that allows the researchers to identify the passive dimensions and variables of empirical measurements and tests of hypotheses. Meanwhile, for any determination of the parameters of organizational culture, it is necessary to start with a realistic acceptance of conceptual limitations and divergences [15].

Schein [21] mention that the organizational culture is formed by the experiences of the individuals that originate from a society or different organizational cultures but that are not molded by the leaders, explaining, for example, the case of the multinational companies that establish themselves in a specific country and preserve the culture of their origins. However, the same author emphasizes that there is a strong influence by the leaders in the formation of organizational culture, especially in the decision-making in the entire organization. Tsui et al. [25] established an extended review of the literature, analyzing and reviewing the models of the configuration of organizational culture, suggesting a greater validation of the construction of culture in the organizations and emphasizing the lack of a definition of the formative elements of organizational culture.

Most research establishes culture as a construct of first order. However, some authors use a two-dimensional approach, as in the study of Etzioni [7], considering the development and participation. Cameron and Quinn [3] used the dimensions of flexibility, stability and focus (internal or external) to classify organizations in four types: clan, adhocracy, hierarchy, and market. One of the studies referenced in the research of Tsui et al. [25] that better presents the elements of organizational culture is by Hofstede [10].

Hofstede [10] refers to the symbols, heroes, rituals and values that collectively define a culture. The Figure 1 shows this elements and relations. Symbols are the terms expressed through specific words, gestures, and status symbols that carry a special significance for the people of the same culture. Heroes are people, real or imaginary, living or dead, who have the ability to influence behavior based on their status, abilities or charisma. Rituals are activities that in themselves are apparently unnecessary, but are considered essential for the culture. Symbols, heroes and rituals are expressed through the practices of a culture. They are visible

and observable outside of the organization by external members and perceived as its identity. In the nucleus of a culture are found the values, which are "general tendencies to prefer certain states of things over others" [10]. The cultures of different companies may distinguish themselves from each other by their practices, as national cultures may be differentiated by their values.



**Figure 1: Evidence of the culture at different levels of depth**

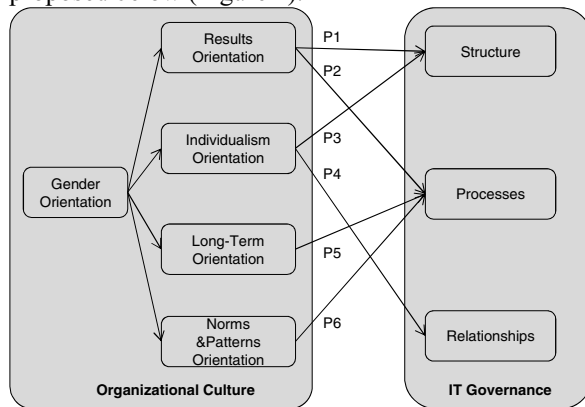
These divisions proposed by Hofstede [10] were used in values and practices, considering the elements as an opening of second order to define a conceptual model of the relationship of organizational culture and IT Governance.

### 2.3 Conceptual model

In the sections above, it was provided a justification for a study on the relationship of the factors of organizational culture and the pillars of IT Governance. In this section, the model used to evaluate this relationship is presented. For the organizational culture, the following factors were used, according to the work of Hofstede [10]: **results orientation**, defined as the degree to which the organization provides incentives, recognizes or rewards its members for efforts or results intended for quality, development, attaining goals, excellence and performance; **orientation toward individualism**, defined as the degree to which an organization emphasizes, reinforces, or compensates actions based on the individuality of the people or the groups to which they belong, with individual interests being prevalent, with respect for each, independent of who they are, in the recognition of the person as a unique being, with his or her virtues and defects; **long-term orientation**, related to the beliefs and practices of the organization that value behaviors of the individuals involving long-term planning, personal preparation for tomorrow, focus on the

future, and continuous updating; **orientation by gender**, regarding the degree that an organization encourages and rewards behaviors characterized by masculine or feminine adjectives and divisions of roles by gender, and; **orientation by rules and patterns**, indicating respect for the existence of rules, beliefs and practices in the organization to avoid the occurrence of unfamiliar, new, or unknown situations, that may generate threats to the normal functioning of the organization.

Based on the elements of organizational culture, according to Hofstede [10], the theoretical model is proposed below (Figure 2).



**Figure 2: Theoretical model proposed - relationship between the factors of organizational culture and the pillars of IT Governance**

The dimensions of Hofstede [10] were related to those of IT Governance [30] in order to exploit the relationships arising generating a set of propositions to be examined in the study.

Dasgupta et al. [5] present gender orientation in their study as a mediator of other factors of organizational culture, since organizational cultures where masculinity prevails are more focused on results, with a thought for the individual and with a greater degree of standardization, along with a long-term view. Because this, gender orientation appear in the model influencing the other four dimensions (results orientation, orientation toward individualism, long-term orientation and orientation by rules and patterns).

The second step was the relationship between these four dimensions and the IT Governance dimensions.

According to Schein [21], results orientation involves the incentives, recognitions and rewards for members for efforts aiming better results. According to Weill and Ross [31], IT Governance encourages the IT structure to better understand and support the organizational strategies and objectives, ensuring that its processes are directed to better organizational

performance. Certain structure is necessary to get better results, allowing the members to put focus in the efforts seeking quality, excellence and performance. In the same way, the process arrangement is necessary to create an environment of efficiency and effectiveness, with a fast implementation involving IT, allowing putting energy in the better results. Based on this, structure and process were considered as related to results orientations.

To Hofstede [10], orientation toward individualism consist of some levels of emphasis or reinforcement about actions involving the individuality of the people or the groups, with individual interests being prevalent, with respect for each, independent of who they are, in the recognition of the person as a unique being, with his or her virtues and defects. The structure is important to offer an environment where this kind of situation is possible, for example, with less control based on IT, or with some different kinds of control. In the same way, the relationship will guarantee that the arrangements defined and the process of IT Governance will be followed, allowing preserving, in practical terms, orientation toward individualism. Based on this, structure and relationships were considered as related to orientation toward individualism.

Long-term orientation is related to the beliefs and practices of the organization that value behaviors of the individuals involving long-term planning [10]. Long-term planning involves focus on the future, continuous updating and personal preparation for tomorrow. This involves the process arrangements because the implementation of plans previously defined and the necessity to include this kind of planning in the policies and procedures about IT. Based on this, long-term orientation was considered as related to process.

The orientation by rules and patterns involves an indication about respect with rules, beliefs and practices in the organization to avoid the occurrence of unfamiliar, new, or unknown situation [10; 15]. This is aligned with process orientation, which involves the definition of procedures according to the strategies and policies defined for IT. In this case, these dimensions are directly oriented by rules, policies and procedures. Based on this, orientation by rules and patterns were considered as related to process.

Thus the following theoretical proposals are presented:

*P1: orientation by results influences the structure of IT Governance.*

*P2: orientation toward individualism influences the structure of IT Governance.*

In a results-oriented organization, the organizational structures will be affected and the model adopted for each company will be defined according to the strategic objectives proposed [9]. According to Weill and Ross [31] the duopoly is a flexible structural arrangement for decision-making, while business monarchies will be more focused on collective participation, with a view to greater sharing of decisions. When a company has a greater recognition of the individual than of collective work, there is a tendency for the structural IT decision-making arrangements to be cut and dry and with few participants [30].

*P3: orientation by results influences in the processes of IT Governance.*

In a company focused on results, there is a tendency to have simple and flexible organizational processes reflected in the decision-making processes of IT Governance [28, 30].

*P4: orientation to individualism influences in the relationships of IT Governance.*

When there is a cultural organizational orientation in which the individual prevails, the internal relationships have an inclination to look for individual decisions with recognition of individual effort, sometimes with a negative influence on human relationships [21].

*P5: long-term orientation influences the processes of IT Governance.*

*P6: orientation by rules and patterns influences the processes of IT Governance.*

There is a perception that the organizational culture with a long-term view influences the decision-making processes, since these processes do not require flexibility, as they deal with organizational uncertainty. Additionally, when a company has a culture oriented toward patterns and rules, it sometimes requires more strict and disciplined processes.

### **3. Research method**

This study examines the perception of Information Technology Managers from Latin American companies regarding the influence of organizational culture in the definition and adoption of the model of IT Governance. To achieve this objective, a qualitative research of empirical-exploratory nature was conducted, following in particular the recommendations of Flick [8].

For convenience, fourteen IT Managers were selected from fourteen different companies from various business segments (industry, commerce, services, finance), all being companies with presence in more than one country and among the 250 largest companies of Latin America, with annual billing higher than US\$ 2 billion in 2010 [1]. One person per company was interviewed, namely the IT Manager, the CIO or a person in a similar position.

The data collection was conducted through face-to-face interviews, using a semi-structured interview protocol based on literature. The script was composed by 12 questions, based on Hofstede et al. [10]. The questions were adapted from the original instrument to reflect the relation with IT Governance. The semi-structured interview protocol allowed the interviewers to clarify specific issues and follow up with questions.

The interview protocol served as a tool to enable consistency in the data collection to enhance reliability of the results. The interviews were to solicit the following details: a) a description of the IT Governance in their companies, including its processes, relationships and structure; b) how is the organizational culture in each company; c) how are the influence between each element of the organizational culture included in the model proposed to the IT Governance pillars. Appendix A contains the questions included in the survey instrument.

The interviews were recorded and transcribed by the researchers, with express consent of the parties interviewed, who were identified as E1 to E14. The interviews were conducted individually at the 2012 CIO Latin America Summit and were of approximate individual duration of 40 minutes. Field notes were taken by the interviewers, attempting to complete the data provided in the interviews. Participants were encouraged to discuss issues they felt were most important for the Organizational Culture and IT Governance. Where possible, they also made reference to cases that further clarified the relation between the Organizational Culture factors and each IT Governance pillars. However, due to reasons of confidentiality, the participants did not reveal their organizations.

For analysis of the data, a content analysis technique was used [8], in which the relevant factors were identified and later grouped in view of better interpretation. With the objective of assisting in the analysis of the data, MaxQDA version 10 was used for the content analysis stage.

Analysis of the data was performed through the reading of the transcriptions, using a technique of open coding, classification of the data and later

refinements of the factors that emerged from the data collected with a certain degree of diversity. The following procedures were performed: loading the interviews in the software; reading the transcribed interviews; creation of a list of perceptions originating from the reading through the interpretation of the researchers; annotations of evidence; loading the field notes and, finally, analysis of inferences from the field notes with regard to the factors.

After finalizing the phase of classifying the perceptions, the factors that emerge from the perceptions were classified and grouped in categories in axial coding. These perceptions were individually classified and analyzed compared with the model offered, considering the pillars of IT Governance referenced in the literature: processes, structure and relationships.

#### 4. Results

Through analysis of the interviews, it may be inferred that the companies present different models of IT Governance and in consequence adopt different criteria for the identification of decisive factors, confirming the findings of the research of Ribbers et al. [19], Weill and Ross [31] and Van Grembergen et al. [28]. A differentiation is perceived in the level of maturity and understanding of the elementary concepts of IT Governance. In the companies of the industrial segment, the use of Information Technology is not seen as a differential of business; this presents greater difficulty in understanding and inferring its IT Governance model and, consequently, relating to the implementation of its model of IT Governance, confirming the studies of Simonsson et al. [22].

There is a consensus among all the parties interviewed that the organizational culture influences the decision and implementation of the model of IT Governance. The respondents understand that the organizational culture is present in all the activities of their companies and thus are related in some way to IT Governance.

The executives perceive that the companies construct their models of IT Governance adapted to the cultural reality of each organization. Sometimes, an IT executive of a family company mentions that a culture of organizational leadership directs a form of the other dimensions of Governance (structure and processes). This view of the influence of the leader of family companies in the definition of organizational culture and, in consequence, in the definition of its structure and its processes, is confirmed by Vallejo

[26].

The most part of respondents understand that a manifestation of the influences of organizational culture is shown by the practices, directed by the central values of each organization. For example, two IT executives of two companies in the gas and petroleum sector, the first of family origin, another company of public semi-state nature, despite acting in the same segment of business, present divergent visions on the model of IT Governance. The parties interviewed in these two companies, however, converge in the perception that there is a strong culture in each of them, clarifying that the rules and patterns and orientation by organizational results are what direct the model adopted. According to the parties interviewed:

*"... the regulations and rules of our company determine how we make decisions in IT and in what way we organize them internally." [E3]*

*"All of our decisions IT are made collectively and by the way we are organized. Nothing is decided without the participation of the business areas. This is an internal regulation, because we have a culture of sharing." [E8]*

In the understanding of the executives, the organizational culture is directly related to the organizational processes and "how things happen" [E11], including in the models of IT Governance adopted. It may be inferred, thus, that there is a significant influence of organizational origin and that this will define the cultural aspects, resulting in different models of IT Governance [30, 28].

Another relevant aspect identified in the research refers to the fact of the strong influences of the relationships of the IT executives in conducting the model of Governance adopted for each organization. A culture of IT leadership for definition of the model of IT Governance to be adopted is identified by the majority of the parties interviewed:

*"The IT structure Governance and how relationships of IT happen with other areas and even internally in IT depend on me (CIO). I define the way we perform IT Governance, since the managers of the other areas participate but do not develop the IT Governance model" [E6].*

This may lead to different interpretations: first that there is not an alignment and in consequence an interest by the organization in IT matters; i.e., the lack of alignment between IT and the business areas [28]. The IT leader exercises strong influence in the organization and thus, decision-making and

conducting the model of Governance are characterized by IT monarchy or duopoly models [30].

A point is emphasized by some IT executives regarding a national culture and a segmented culture; i.e., company groups that have different segments of business (for example, a company conglomerate with new different business segments), which may be directed toward different models of IT Governance, keep in mind that they have different organizational cultures within the same group. This is addressed by the parties interviewed as a challenge for the IT area, which must act differently for different interested parties.

Another aspect derived from the research refers to the type of culture existing in the organizations and its relationship with IT Governance. The companies in market expansion, perceived by the IT executives as having a culture focused on results, less regulated and focused on collectivism (in opposition to individualism), tend to implement models of IT Governance with simple decision-making processes and with simple structures. A greater participation of the areas of business in IT Governance is perceived for these organizations. In contrast, semi-state companies are rigid in their controls with a closed culture, or have formal and slow bureaucratic decision-making structures (following the organizational culture), or presenting complex structures and with a lack of the participation of the business executives in the IT Governance model.

Analyzing the proposals, it may be perceived, according to the executives interviewed, that the factors of individualism and orientation by results (P1 and P2) get probable influences on the structure of the IT Governance:

*“Our model of IT Governance is made by a group of people of different areas of the company. We have a strong directive to track results for the company and IT is organized to assist the areas of businesses to attain these results. We work as a team, without individualism, since this way we obtain better results for our company.” [E7]*

Regarding proposal P3, the respondents have no perception of an influence of orientation by results on the organizational processes.

In the analysis of proposal P4, the parties interviewed perceive it to be a relevant factor, since according to them there is a strong influence of individualistic culture on the relationships of IT Governance:

*“When a company values each individual and not*

*team work, we do not interact between the areas and consequently have greater difficulty in making decisions. They are made in isolation and may generate many problems for a company. We must think of everyone, award and value all. With an individualistic culture we cannot make good decisions.” [E9]*

For the majority of the parties interviewed, a proposal regarding a long-term cultural orientation does not directly influence the IT Governance process, but rather the organizational strategy. However, a party interviewed states that

*“... in an organization where there is a collective idea that an organization must think of its future and not of the present, decision-making in IT and, consequently the processes, will be adjusted for higher criteria decisions, and thus more assertive.” [E7]*

In proposal P6 regarding the influence of cultural factor grounded in rules and patterns in the IT Governance processes, there is unanimity among the parties interviewed. They all affirm that, according to their perceptions, this relationship is very significant to the extent that the formality and strict regulations require organizational processes and formal and structured ITG.

Finally, it may be inferred that the companies with intense use of IT in business (such as companies in the financial and technology segment) perceive the organizational culture as a force for the success of the model of IT Governance adopted, in contrast to others, where the organizational culture may impede the progress of good results of IT Governance and consequently their organizational implementation.

## **5. Conclusions and Implications**

This research of exploratory nature attempted to identify the perceptions of the IT executives of Latin American companies on the influence of factors of the organizational culture on IT Governance. The results of the interviews indicate a relationship in many aspects between the cultural organization and model of IT Governance adopted. There are various points in common, in the perception of the executives interviewed, indicating the processes and structure of IT Governance, with the rules, patterns, and results.

Among the limitations of this study, low maturity may be noted in the IT executives in Latin America in their understanding of the barriers to the success of IT Governance. It is a fact that the organizational

culture is an agent directing the success of IT Governance. Another limit refers to the breadth of the research in Latin America, in a region with cultural differences that influence the organizational culture. In the same way, the results represent the perception of IT Managers from a group of companies, selected for convenience.

Although this research has been developed with a relatively small number of respondents, these IT Managers' companies have significant importance in the context of Latin America, considering presence (more than one country), position (among the 250 largest companies in Latin America) and profit (annual billing higher than US\$ 2 billion in 2010). So, in spite of the number of respondents and the fact that they were selected for convenience, the results represent, to a certain extent, a relevant part of the broad picture of Latin American companies.

The authors suggest verifying this model of the determining factors of organizational culture and its relationship with the pillars of IT Governance by applying an in-depth survey with a bigger number of companies, attempting to better understand this phenomenon. It is a fact that there are latent research opportunities that will contribute to the studies in this area. The authors also suggest conducting study cases in the same companies (or part of them) to verify the perceptions of other stakeholders, following the recommendations of Eisenhardt [6].

Finally, this work suggests that IT executives should better understand the orientations that form the organizational cultures of their organizations and involve or adapt their IT Governance models in line with the formative factors of the organizational culture in order to obtain better results in their processes, structures and relationships.

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## **Appendix A. Interview protocol**

### **IT Governance – General context**

1. Does your organization have an IT Governance model in place?
2. IT Governance is defined as the IT related decision making structure, IT processes and relationships. Within this organization, what are the areas where IT Governance works best? Why?
3. How the IT Governance is organized in terms of structure?
4. What are the main responsibilities of the IT Governance structure?
5. How does the IT Governance process are organized?
6. How the IT Governance relationship occurs?
7. In relation to IT Governance, is there anything else you consider important to mention?

### **Organizational Culture – General context**

1. Does your organization have a strong organizational culture? Could you explain?
2. Organizational Culture is expressed by organizational practices. What is your perception about organizational culture in your company? Why?
3. In relation to Organizational Culture in your company, is there anything else you consider important to mention?

### **Organizational Culture and IT Governance**

1. The Organizational Culture oriented by results could influence the IT Governance structure. What is your perception about it considering your company? Why?
2. The Organizational Culture oriented toward individualism could influence the IT Governance structure. What is your perception about it considering your company? Why?
3. The Organizational Culture oriented by results could influences the IT Governance processes. What is your perception about it considering your company? Why?
4. The Organizational Culture oriented to

individualism could influences the relationships of IT Governance. What is your perception about it considering your company? Why?

5. The Organizational Culture oriented to long-term could influence the IT Governance processes. What is your perception about it considering your company? Why?
6. The Organizational Culture oriented by rules and patterns could influences the IT Governance processes. What is your perception about it considering your company? Why?