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IT governance, culture, and individual behavior.

Keywords: IT Governance, Organizational Citizenship Behavior, Organizational Culture, Systematic Literature Review.

Abstract: Information technology (IT) has become vital to organizations' success. For this reason, IT Governance (ITG) is necessary to control better solutions, sustainable development, and better decision-making. Since an organization's advantage lies in its employees' behavior, this study analyses the impact of ITG institutionalization on the key dimensions of Organizational Citizenship Behavior (OCB). OCB describes individuals' voluntary commitment to an organization. Plus, to moderate this relationship, Organizational Culture (OC) is recognized as an essential asset that affects OCB behaviors and attitudes and ITG performance. In summary, the findings of this study contribute to the development of a conceptual model that considers different OC types to explain how the institutionalization of ITG affects individuals' behavior.

1 INTRODUCTION

Information technology (IT) has become essential to sustainable business growth, and organizations must govern it effectively (De Haes et al., 2020). IT Governance (ITG) is how organizations strategically align IT with business, including leadership, organizational arrangements, patterns, and processes (Hardy, 2006; Jacobson, 2009).

Organizations can pragmatically deploy ITG using a mixture of structure, process, and relational mechanisms (Smits & Van Hillegersberg, 2015). These mechanisms can be adopted by following two principles (Wiedenhöft et al., 2017, 2019). Firstly, the regulatory aspects of ITG, which pertain to the processes and legal aspects of ITG. Second, the normative side of ITG focuses on individuals dealing with IT-related decisions and activities (Fernandes, Pereira, & Wiedenhöft, 2021). It is known as the behavioral side of ITG and is the focus of this study.

Depending on the individual behavior dealing with IT, the success of an ITG implementation depends heavily on the prevailing organizational culture (OC) (Aasi et al., 2014). The implementation process can generate noise without considering it, causing employees not to adopt the desired IT usage practices and behaviors (Sousa et al., 2019). For example, an OC that enhances communication, innovation, and creativity positively influences ITG performance and outcomes (Aasi et al., 2016).

A clear incentive for desirable behavior is essential for effective governance. A good business-IT relationship is enabled by good behavior. In contrast, inappropriate behaviors undermine it (Juiz & Toomey, 2015). The concept used to understand individuals' behavior is Organizational Citizenship

Behavior (OCB). OCB is defined as individuals' behavior that benefits the organization voluntarily without being rewarded (Organ, 1988, 2015).

Many authors tried to redefine OCB's ideas and outcomes (Dekas et al., 2013; Organ, 2018). In 2013, Dekas et al. acknowledged the importance of IT and suggested that it may predict future trends in the broader workforce and OCB. The study between OCB and ITG was pioneered years later, with authors arguing that ITG promotes OCB by encouraging desired behavior in using IT (Fernandes, Pereira, & Wiedenhöft, 2021; Wiedenhöft et al., 2017, 2019).

This study works with Dekas et al.'s (2013) motivation but with OC as a primary vector, which we assume influences both ITG and OCB concepts as a relationship and individually. The institutional theory also supports this study based on how individuals perceive ITG implementation in their organizations (Scott, 2008). Thus, Figure 1 synthesizes this study's problem: *Does the perception of ITG institutionalization positively affect individuals' behavior over the lens of the OCB concept, and how do the organizational cultures influence it?*

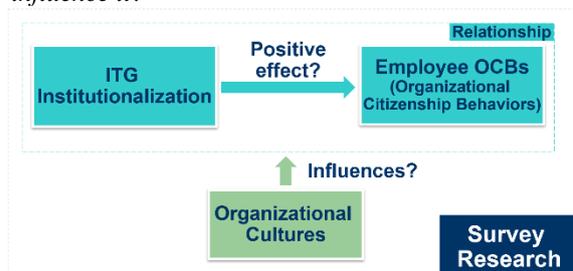


Figure 1: Research problem.

As exposed in figure 1, there is a need for in-depth research to answer this question. As a result, this study aims to synthesize and clarify the literature related to ITG, OCB, and OC and understand their relationships. The literature review was conducted using a systematic literature review (SLR). Fifty-three articles from respected journals, conferences, and books were analyzed.

2 RESEARCH METHOD

Following the standard guidelines and recommended steps, an SLR was carried out to study the works related to this one (Kitchenham, 2007). Thus, all the English language articles, from any date, available online and that relate at least two of the three main concepts of the study were included. After that, the filtration process comprises four filters: 1 – Article title, abstract, or keywords; 2 – Duplicates; 3 – Unranked or lower-ranking articles (Scimago and conference ranks); 4 – irrelevant articles.

The search strategy also included leading electronic databases in the Information Systems area (AIS eLibrary, EBSCO, SpringerLink, Scopus, Taylor & Francis Online, Web of Science, Wiley Online Library). Additionally, a search string was defined to search across all repositories.

Search string: *("Information Technology Governance" OR "IT Governance" OR "ITG" OR "ITG formalization" OR "ITG mechanisms") AND ("Organizational Citizenship Behavior" OR "OCB") OR ("Information Technology Governance" OR "IT Governance" OR "ITG" OR "ITG formalization" OR "ITG mechanisms") AND ("Organizational culture") OR ("Organizational culture") AND ("Organizational Citizenship Behavior" OR "OCB")*

Initially, fifty articles were found. Then, two literature reviews on OC and ITG were found (Aasi et al., 2014; Sousa et al., 2019). Thus, the snowballing process was carried out (Wohlin, 2014). Fifty-three articles compose our final selection.

The predominance is on the relation between OC and OCB with thirty-two articles. In second with eighteen articles, the relation between ITG and OC. Also, three articles on OCB and ITG. Finally, the three concepts have never been studied, opening a wide door for hypotheses.

3 CONCEPTUAL BASIS

3.1 IT Governance

For a long time, ITG was linked with the individuals' behavior in using IT. Nowadays, researchers define it more broadly, relating ITG to corporate governance and business (De Haes et al., 2020; Weill & Ross, 2004). ITG is an integrative and essential asset of more comprehensive corporate governance that focuses on IT's role in the organization (Rowlands et al., 2014). As a result, it applies corporate governance concepts to create and protect IT value and defines IT roles and responsibilities to minimize risks related to IT (Hardy, 2006).

3.2 Organizational Citizenship Behavior

OCB is defined as individuals' behavior that benefits the organization voluntarily without being rewarded (Organ, 1988). These behaviors are characterized by spontaneous and innovative actions essential for effective organizations, sustainable business growth, and better job performance (Organ, 2015). This study uses OCB with the premise that ITG acts on its antecedents, considering that by institutionalizing ITG, organizations are encouraging the desired behavior in the use of IT, which will enhance these behaviors in individuals (Fernandes, Pereira, & Wiedenhöft, 2021; Wiedenhöft et al., 2017, 2019).

3.3 Organizational Culture

OC is composed of values, norms, objectives, and expectations commonly shared by the organization's members (Quinn & Rohrbaugh, 1983). Personifying the concept, OC is the organization's personality (Rowlands et al., 2014). A well-defined OC plays a vital role in the organization, improving its members' commitment and enhancing performance (Sharoni et al., 2012). OC can have many types of profiles, diverging in their combination of values (Cameron & Quinn, 2011). Despite having a prevailing culture type, no organization matches perfectly into a single one, reflecting their emphasis on various values (Quinn & Rohrbaugh, 1983; Wijesinghe et al., 2019).

4 THEORETICAL MODEL

4.1 ITG and OC

The literature inter-playing the relation between ITG and OC refers to the importance of OC for a smooth implementation and how it can be the primary concern when something goes wrong (McCoy et al.,

2009; Wiedenhöft et al., 2015). Satidularn et al. (2011) argue that OC plays a significant role in creating a deeper understanding of ITG implementation among employees. Nevertheless, it is difficult for organizations to make these changes, and there is a lack of clear understanding of "how," "what," and "why" culture influences ITG (McCoy et al., 2009). There is only knowledge that when managing ITG mechanisms, creating a culture around ITG is critical to achieving alignment between business and IT, ultimately leading to more IT-enabled value creation (ISACA, 2012).

According to these findings, it is verifiable that OC can influence the implementation of an ITG model differently and, therefore, affect its performance. Therefore, this section's general hypothesis is **H1**: *The predominant organizational culture affects how individuals perceive the institutionalization of ITG in the organization.* As shown in figure 2, three hypotheses were created that will allow us to validate how different types of OC influence the Wiedenhöft et al. (2017, 2019) ITG's institutionalization dimensions and validate the central hypothesis of this section.

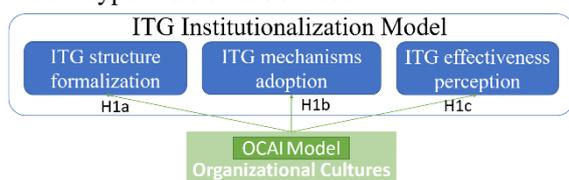
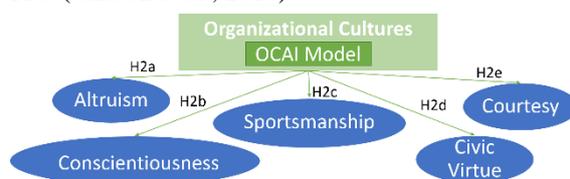


Figure 2: OC & ITG research model.

H1a: *Organizations with a dominant hierarchy culture higher tend to have a more robust perception by the individuals of its ITG structure formalization.* It is recognized that the ITG's structure represents the organization's formal position toward technology, is part of ITG's normative institutionalization, and is characterized by social action empowerment (Davison & Ou, 2017; Scott, 2008). In addition, employees' perception of formal ITG structure can encourage them to share a goal, respect and appreciate organizational processes, and communicate with each other (Wiedenhöft et al., 2019). To avoid a formal unperceived ITG structure, the IT must be aligned with their business needs and guarantee stakeholders' interests (Chin et al., 2004; Sousa et al., 2019). According to El-Mekawy et al. (2014), an organization that potentiates a hierarchy culture will enhance the individual's perception of formalized structures and processes, increasing efficiency, consistency, and effectiveness.

H1b: *Organizations with a dominant hierarchical culture tend to have a more robust perception of*

individuals adopting ITG mechanisms. From Scott's (2008) model perspective, the ITG regulatory's institutionalization results from its adopted mechanisms, reflecting organizational compliance with rules and laws. Understanding the importance of adopting the mechanisms can help IT employees accept their roles and responsibilities, leading ITG to run smoothly (Aasi et al., 2014; Arikan & Borgman, 2020). Thus, OC can determine how top management can structure and use the ITG mechanisms to achieve a higher performance of ITG (Wijesinghe et al., 2019; Willson & Pollard, 2009). Janssen et al. (2013) argue that if an organization has a culture oriented towards patterns, policies, and procedures, it will easily adapt and legitimize those defined by ITG mechanisms, avoiding unplanned events that are against policies and laws. Adopting ITG mechanisms comprised of formal rules and policies might benefit organizations with hierarchy cultures since it requires organizational processes and a formal and structured ITG (Janssen et al., 2013).



H1c: *Organizations with an adhocracy-oriented or a clan-oriented culture tend to have a more robust individual perception of ITG's institutionalization effectiveness.* The ITG Structure's legitimacy comes from the individual perception of ITG's Effectiveness, which, by fulfilling a standard definition, a recognizable role, or a structural model, creates a reference structure that is not only inspiring but also copied by other organizations (Scott, 2008; Wiedenhöft et al., 2019). By interacting with ITG mechanisms, individuals can perceive the effectiveness of ITG, thereby respecting the principles and objectives of ITG (Satidularn et al., 2011). Thus, organizations with a culture that improves communication styles and enhances attitudes towards innovation and creativity positively influence the performance and outcomes of ITG (Aasi et al., 2016; Aasi & Rusu, 2017). Since adhocracy-oriented cultures are very innovative, they provide higher IT effectiveness (Aasi et al., 2016). The clan-oriented culture also works well in this context since communication dominates its values (Cameron & Quinn, 2011).

4.2 OC and the OCB

Researchers have interpreted how OC affects OCBs in diverse ways. There are references to OC as an antecedent (Biswas & Varma, 2012; Park et al., 2013; Tagliabue et al., 2020), a potential moderator (Erkutlu, 2011; Marcos et al., 2020; Sharoni et al., 2012), a predictor (Teh et al., 2012), an effective tool for performing it (Alsheikh & Sobihah, 2019; Jeong et al., 2019; Susita et al., 2020), and with OCB as part of and one of the many OC's measures (Desselle et al., 2017, 2018; Desselle & Semsick, 2016; Jafarpanah & Rezaei, 2020; Setyaningrum, 2017; Yuliusdharma et al., 2019). Nevertheless, there is a consensus that OC impacts how employees perform citizenship behaviors (Jo & Joo, 2011; Todd et al., 2009). Organizations state how things are done through their culture, which influences their employees' behavior, resulting in how they manifest different OCBs, which can be beneficial or detrimental to the organization (Setyaningrum, 2017; Susita et al., 2020). According to Song et al. (2009), different OC types can cause different reactions based on the relationships perceived by employees. The literature reports that in cultures where people are more identified with their profession and organization, they feel more satisfied and perform more OCBs oriented towards their organization (Conscientiousness, sportsmanship, Civic Virtue) (Lopez-Martin & Topa, 2019; Tagliabue et al., 2020). In contrast, in team-oriented cultures where employees identify more with the workgroup, increasing employees' beliefs that they have a trust-based bond with all employees, they are more likely to perform individual OCBs (Altruism, Courtesy) (Limpanitgul et al., 2013; Yin Yin Lau et al., 2020).

Organizations always try to adjust their own culture to enhance the OCBs that best fit their employees, consequently impacting their and the organizations' performance (Appelbaum et al., 2004; Huang et al., 2020). Thus, this section's general hypothesis is **H2: The predominant organizational culture affects the level and kind of OCBs individuals demonstrate.** Figure 3 shows the five hypotheses created to validate the influence of different OC types on the five most-used OCB dimensions (Fernandes, Pereira, Wiedenhöft, et al., 2021) created by Organ (1988) and validate this section's central hypothesis.

Figure 3: OC & OCB research model.

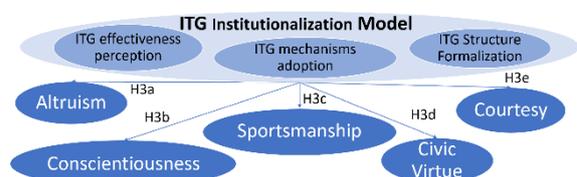
H2a: *Individuals in an organization with a dominant adhocracy-oriented or a clan-oriented culture demonstrate higher altruism levels.* Altruistic behaviors represent an employee's philosophy about helping others (Goodman & Svyantek, 1999; Liu &

Fellows, 2008). Thus, the perceptions of what happens in the organization may have less impact on this variable's performance than on a group and team-based culture (Goodman & Svyantek, 1999). The orientation towards innovation also favors these attitudes and behaviors (Lopez-Martin & Topa, 2019). A clan culture emphasizes the importance of human resource development by rewarding teamwork, participation, and consensus. In an adhocracy culture, the organization encourages innovation, individual initiative, and freedom (Cameron & Quinn, 2011).

H2b: *Individuals in an organization with a dominant market-oriented or a hierarchy-oriented culture demonstrate higher conscientiousness levels.* Conscientiousness is characterized as citizenship behavior toward the organization (Organ, 1988). Represents employee actions which go beyond the organization's minimum requirements (i.e. attendance, punctuality, etc. (Liu & Fellows, 2008). Conscientiousness is more likely to be demonstrated in an organization with well-defined norms and processes (Jeong et al., 2019; Lopez-Martin & Topa, 2019; Park et al., 2013). Thus, the market or hierarchical cultures show how organizations use formal rules and policies to remain united, care for the safety of their employees, and highlight external relations that drive competitiveness to achieve results (Cameron & Quinn, 2011).

H2c: *Individuals in an organization with a dominant clan-oriented culture demonstrate higher sportsmanship levels.* Organ (1988) defined sportsmanship as the free will to accept and tolerate work's inevitable inconveniences. An employee with high sportsmanship will not complain when others bother him. He maintains a positive attitude even when things do not go his way and does not offend others when his suggestions and ideas are not followed (Liu & Fellows, 2008; Podsakoff et al., 2000). Thus, clan cultures will affect sportsmanship, where the task interdependence of the teams is high (Ehrhart et al., 2015; Yuliusdharma et al., 2019).

H2d: *Individuals in an organization with a dominant market-oriented culture demonstrate*



higher civic virtues levels. Civic virtue represents an interest or commitment to the organization, and it is shown by a willingness to participate in its governance and pursue its best interests even at a high personal cost (Liu & Fellows, 2008; Organ, 1988;

Podsakoff et al., 2000). This kind of behavior and attitude are usually linked to a market culture, where the quest is to achieve high levels of organizational effectiveness and productivity in the long term (Jeong et al., 2019; Park et al., 2013). An organization's market culture is based on long-term goals and objectives, inspiring individual participation, developing commitment, and emphasizing winning (Cameron & Quinn, 2011).

H2e: *Individuals in an organization with a dominant clan-oriented or a hierarchy-oriented culture demonstrate higher courtesy levels.* Courteous behaviors present a kind of gesture toward others, helping them prevent work-related problems, for example, notifying them before acting in a way that may affect them (Liu & Fellows, 2008). Some points favor this type of behavior (Park et al., 2013). First, team interdependence creates a proper environment for providing extra help to co-workers in a clan-based culture. In a hierarchical culture, the emphasis on rules and regulations will enhance the demand and help create control and stability (Cameron & Quinn, 2011).

4.3 ITG and the OCB

ITG is the decision-making structure that determines IT responsibilities and defines the necessary mechanisms to stimulate the desired behaviors concerning IT resources, aiming to meet its objectives and respect its principles (Weill & Ross, 2004). ITG institutionalization perceptions suggest that ITG encourages OCB mainly through the use of IT by promoting desired behavior (Fernandes, Pereira, & Wiedenhöft, 2021; Wiedenhöft et al., 2017, 2019).

OCB is essential for enhancing organizational effectiveness, and its absence may lead to adverse outcomes. We believe that perception of ITG adoption is one of the many factors that influence OCB, as it can affect employees' ability to share a purpose, goodwill about organizational processes, and the ability to communicate, which helps the organization to be more efficient (Teh et al., 2012; Wiedenhöft et al., 2019). Therefore, this section's general hypothesis is **H3:** *ITG institutionalization positively affects individuals' behavior over the OCB concept lens.* Figure 4 shows five hypotheses that will allow us to validate the influence of the individuals' perception of ITG's adoption on the five most-used OCB dimensions created by Organ (1988) and then validate the central hypothesis in this section.

Figure 4: ITG & OCB research model.

H3a: *The ITG institutionalization positively affects altruism behavior.* Altruism can be positively

affected by promoting knowledge exchange practices, such as fostering collaborative networks and knowledge sharing, enhancing employees' ability to help others (Wiedenhöft et al., 2017).

H3b: *The ITG institutionalization positively affects conscientiousness behavior.* Conscientious behaviors can be enhanced by promoting greater compliance with the organizations' rules, making individuals aware of the importance of effective and optimized use of the organization's resources (Janssen et al., 2013; Scott, 2008; Weill & Ross, 2004).

H3c: *The ITG institutionalization positively affects sportsmanship behavior.* Sportsmanship can be positively affected by the involvement of individuals in the ITG process as an organizational phenomenon that, by understanding their roles, can guarantee the integrity and responsible behaviors required by ITG's processes, enhancing the perception of organizational support and helping the employee to deal with the work displeasures without complaining (Wiedenhöft et al., 2019).

H3d: *The ITG institutionalization positively affects civic virtue behavior.* Civic virtue can be enhanced if individuals perceive getting feedback and organizational reciprocity, contributing to employees adopting pro-organizational behaviors and attitudes, such as constructive suggestions for improvement, even at a high personal cost (Wiedenhöft et al., 2019).

H3e: *The ITG institutionalization positively affects courtesy behavior.* Courtesy can be affected by promoting greater compliance with the organizations' rules and, second, by providing collaborative and communication tools. This way, the individuals can help their colleagues prevent work-related problems, such as notifying them before taking inappropriate actions (Liu & Fellows, 2008).

4.4 Conceptual Model

The conceptual model presented in Figure 5 tests the influence of ITG institutionalization on OCB and then examines OC's role as a potential moderator of the relationship by assuming that OC can affect the elements individually. First, by understanding that, managing the mechanisms and the culture around ITG, it is possible to achieve alignment between business and IT and enable more IT value creation (ISACA, 2012). Secondly, by performing its culture, organizations state the 'way things are done here,' influencing their employees' behavior, and consequently, how they manifest different OCBs (Sharoni et al., 2012; Stamper & Dyne, 2001). Finally, the last hypothesis of this study emerges:

H4: The organizational culture will moderate the relationship between ITG and OCB.

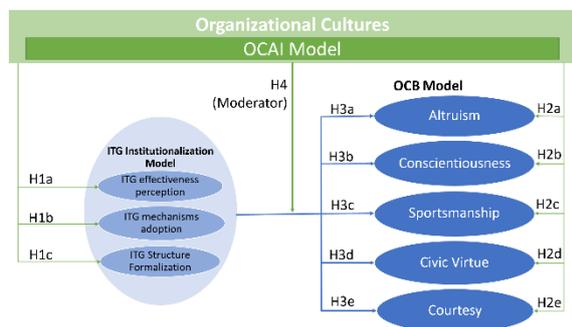


Figure 5: Conceptual model.

5 CONCLUSIONS

This research aims to understand how ITG institutionalization affects individuals' behavior under the lens of different organizational culture types, ending with the development of a conceptual model previously presented. Resolving its hypothesis will enable several theoretical and practical contributions that allow organizations to understand the role ITG institutionalization plays in OCB, checking if, by implementing their ITG Mechanisms, they are increasing their employees' OCBs consequently, organizational effectiveness (Rego & Pina e Cunha, 2008). Organizations will also identify the existing and desired type of OC from their employees' views (Cameron & Quinn, 2011). They will understand how culture affects the ITG institutionalization and employees' OCBs, both individually and in the power of its relationship, and compare results with other culture types.

Overall, this study will be completed in a descriptive-confirmative ex post facto, materialized in a survey to be answered by workers from a vast number of organizations worldwide. As a test of the overall model and hypotheses, we will use validated instruments from previous research studies, followed by a factor analysis using Partial Least Square (PLS)-Structural Equation Modeling (SEM) (PLS-SEM).

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