Chapter 9
Application of Governance, Risk Management, and Compliance Practices in the Public Service, in Light of the Tam Model:
A Study at the Federal Institute of Bahia

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ABSTRACT

This work's main objective was to study the application of governance, risk management and compliance (GRC) practices at Federal Institute of Bahia (IFBA), based on COSO-ERM, ISO 31000, and PMBOK. The application was carried out from the perspective of the technology acceptance model (TAM) to investigate users' perception of using a GRC system. The study is based on a questionnaire graded

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on a seven-point Likert scale. This model, originating in studies by Davis in 1986, located a fundamental conceptual framework for understanding how people perceive and adopt new technologies. The results demonstrate the applicability of the TAM model to measure perceived usefulness and ease of use in relation to the use of new technologies. It is also concluded that managers perceive greater usefulness and ease of use than subordinates, in relation to the proposed system. Thus, this study contributes to the development of studies on the GRC theme by systematizing practical implementation guided by international models, evaluating the perception of servers using the system in light of the TAM model.

1. INTRODUCTION

1.1 Endorsing the Investigation

The continuous evolution in management strategies has highlighted the importance of Governance, Risk Management and Compliance (GRC), driving debates on the integration of these elements to ensure better organizational performance. When integrated, GRC management encompasses the identification, control, definition, execution and monitoring, allowing the coordination and integration of these activities jointly (Hoeflich et al., 2016). Directing efforts to GRC activities is necessary, considering not only the constantly evolving regulatory demands, such as the fiscal responsibility law and the anti-corruption law, but also the intrinsic need to monitor practices to avoid crises and protect internal and external threats.

The convergence between GRC elements has been explored as a unified and broad approach to ensure compliance with standards and regulations, contributing to the promotion of transparency, ethics and responsibility. According to Winter (2008) GRC is a management model that fosters unification, communication and collaboration among various stakeholders in management, while controlling the organization's operations. GRC's contributions, therefore, are relevant to any organizational environment, whether in the private or public sector. Brazilian government organizations face increasing risks, including corruption, fraud, and embezzlement. Thus, its implementation in public agencies should be treated as a key element in the management strategy, adopting an internal control approach based on risk management. This robust recommendation leads the organization to achieve its objectives, even in an environment of uncertainty related to organizational activities. (OECD, 2011).

The adoption of GRC often requires information systems, since such technological tools must be used as an integral part of government modernization strategies, generating public value (Ministry of Planning, Development and Management,

2016). The evolution of technology and the era of digital transformation open new doors and challenges for leaders, seeking to improve the way entities conduct and deliver public services, becoming an essential factor to be explored by modern organizations. In this sense, the use of technological tools has become a necessity to face contemporary challenges.

This demand for the systematization of public activities drives the investigation of the perception of users in the use of these systems, encouraging the understanding of factors related to their effective use. The Technology Acceptance Model (TAM), originating from Davis' studies in 1989, provides a fundamental basis for understanding how people perceive and adopt new technologies, and is applicable in the analysis of the perception of GRC systems, as proposed in this study.

Previous studies using TAM demonstrate the importance of evaluating the perceived usefulness and ease of use of new technologies. In the study conducted by Da Silva, et al. (2023) entitled The technology acceptance model (TAM) is used as a theoretical framework and a survey is carried out with 110 students of the bachelor's degree course in Physical Education, with the objective of identifying the intention to use technology, based on the influence of the perception of use, perceived usefulness, perception of ease of use and the influence of subjective norms on the intention to use technology. The study points out that the constructs referring to perceived ease of use and perceived usefulness showed positive effects on the intention to use technology, contrary to subjective norms.

Also considering the possible different perceptions between managers and subordinates when evaluating the impact of both on the overall outcome of the evaluation. The study conducted by Melo (2020) compared the perceptions of managers and subordinates in relation to managerial roles and competencies. The study revealed significant differences between managers' and subordinates' perceptions, suggesting that different groups in an organization may have different views on governance.

Aiming to apply GRC in a public agency, the present research aims to evaluate the level of perceived usefulness and ease of use of a system created specifically for the agency under study. We did not find in the literature an empirical study carried out, which applied, developed a web system and evaluated the perception of use, in the combined context between the public service and GRC practices.

To achieve these goals, this investigation, following a quantitative approach, was conducted using a questionnaire answered using a seven-point *Likert* scale. Using graphical analysis, it evaluated the participants' perception of the GRC software developed, now used in the first study. This evaluation was made considering the perceived usefulness and perceived ease of use, parameters that make up the TAM model.

Guided by the aforementioned context, regarding the importance of GRC practices and the existence of norms, models and methods that help in this process, it is verified that there is a need for studies and improvement in relation to the establishment of a standard, especially in the public service.

In view of the most used GRC structures, it is unlikely that a single methodology would be able to encompass all the specificities of each organization and, therefore, each unit needs to develop its own way of applying GRC standards, specifically in managing its risks. According to the studies by Hill and Dinsdale (2003), these obstacles include the absence of an explicit process for decision-making in relation to risks, inadequate management of uncertainty and lack of attention to relevant controls that can result in serious consequences for the institution and society. The ineffectiveness of institutional management structures and systems can hinder this risk management and control process.

1.2 Objectives

The IFBA is a Federal autarchy, linked to the Ministry of Education, whose purpose is to provide educational services. The IFBA consists of 22 campuses covering throughout Bahia, with the campus in the city of Eunápolis being the unit chosen for this study. According to the management report for the 2020 fiscal year, the campus's institutional mission is "to promote the formation of the critical historical citizen, offering teaching, research and extension with socially referenced quality, aiming at the sustainable development of the country". Its academic community is made up of about 90 effective professors, 14 substitute professors, 49 administrative technicians and 1365 enrolled students.

The IFBA Campus Eunápolis unit, so far, has few actions related to GRC activities. This fact is a problem, since the TCU (Tribunal de Contas da União), through Ruling No. 821/2014 – Plenary, highlighted the importance of risk management, emphasizing the need to intensify actions to promote the improvement of risk management and controls in the Public Administration (TCU). Improvements are still needed on how GRC practices are carried out with a focus on risk management in Federal educational institutions in Brazil. Therefore, it is necessary to research the current condition in these institutions and what are the main challenges faced by risk managers in putting GRC activities into practice. Thus, based on the problem discussed above, the present research will be oriented to perceive the levels of perceived usefulness and perceived ease of use in the use of GRC systems, and their hierarchical influences.

The general objective is to evaluate the perception of usefulness and perceived ease of use, and the influence between managers and subordinates in the evaluation of the use of a developed GRC system, using the Technology Acceptance Model

- TAM as a basis. Specifically, it is intended to evaluate the perceived usefulness and perceived ease of use in relation to the use of the GRC system.

1.3 Relevance

In the managerial context of the public service, the issue of risks has recently been incorporated as an internal control procedure, as established by Joint Normative Instruction MP/CGU No. 1/2016. The rule provides information that guides a policy for the implementation, maintenance, monitoring and review of risk management for the agencies of the Federal Executive Branch.

The control bodies have been monitoring this process and issuing regulations that establish procedures to be adopted by federal public institutions. The CGU itself instituted through CGU Ordinance No. 915, of April 12, 2017, a risk management methodology. The structure aims to guide the units to implement it in accordance with their Risk Management Policy (PGR/CGU) and also serves as a reference for the other bodies of the Federal Executive Branch.

The search for the improvement of GRC mechanisms has led to an increase in the number of empirical studies on public governance. In this context, we highlight research conducted by Oliveira and Vieira (2019). The study aimed to analyse the public governance practices adopted by the Brazilian Federal Public Administration. Descriptive and multivariate analyses of secondary data were used for this purpose. It is noteworthy that most bodies created a board of directors. However, the evaluative variables, which reflect the evolution of the management of these councils, are not integrated or have not yet reached a level of maturity that allows effective management, especially in relation to risk management. In addition, some agencies have not yet recognized the need to adopt more advanced governance practices in the public sector. The authors came to the conclusion that, although the agencies have taken the first steps towards the adoption of better corporate governance practices, there is still much to be done.

Another factor to be considered is the growth of public universities, which bring with them more complex operations and, consequently, a potential for exposure to greater risks. The expansion of Federal Universities in Brazil has been a relevant theme in recent governments, with the creation of new units, the internalization of teaching, the increase in staff, and the availability of more vacancies, among other factors (Carvalho et al., 2018). Federal institutions of higher education in Brazil face a dynamic and uncertain environment, resulting from the expansion process, budgetary and financial constraints, and difficulties arising from the COVID-19 crisis, which increases and diversifies the uncertainties and doubts present. Risk management emerges as a primary approach to the management and control of these

institutions (Sedrez and Fernandes, 2011). In this context, this expansion process can bring with it challenges for the governance of these higher education institutions.

Considering the current context in the public service, in which, in an environment of uncertainty, organizations have a certain difficulty in making decisions precisely because of the unpredictability of events (Gordon, Loeb and Tseng, 2009), Gazoulit and Oubal (2022) also highlight the complexity of the scenario in universities. This is especially relevant in the public sector, due to challenges that make it difficult to measure performance, establishing barriers to goal setting, planning, and strategy execution. The plurality of fields of activity, the difficulty in predicting performance and capabilities, as well as the diversity of stakeholders in Higher Education Institutions (HEIs), are factors that intensify these difficulties. This study is justified because it sought to deepen the process of application of GRC practices, focusing on risk management in the public sector, in the midst of the organizational dynamics of a Federal educational institution, aiming to analyse the impact of risks on the strategic, tactical and operational objectives of the organization, evaluating the different hierarchical perceptions in the use of systems, enabling the generation of useful information in the decision-making process, in response to possible negative impacts on the organizational context.

The present study contributes to the development of methodologies, promoting improvements and specific adaptations to the context of the academic public service, systematizing a structure proposal; contributes to the training and awareness of participating actors on the importance of governance, risk management and compliance; the analysis of the results reveals paths for good practices to be implemented by the participants, becoming a valuable resource for sharing and adoption in other academic institutions; based on the SWOT matrix, the survey offers insights to improve strategic decision-making in academic institutions, considering both strengths and challenges; based on the results of the Risk matrix, the survey provides recommendations to respond to the identified risks, promoting a safer and more efficient environment; The results support the formulation or review of institutional policies, promoting alignment with the best governance and compliance practices; improvement of the quality of academic services, reflecting positively on the academic community and society in general.

Since this is a topic that lacks studies that reflect the practical articulation of application techniques, based on international standards and their inherent complexity, the scarcity in the literature highlights the need to investigate this process taking into account particularities of the Brazilian context. Thus, it is interesting to assess the risks that may arise at each stage of the process, such as the lack of an explicit process for decision-making, in addition to the difficulty in dealing with uncertainty or simple ignorance of the risks.

2. GOVERNANCE MODELS ADOPTED IN THE PUBLIC SECTOR

Corporate governance has its roots in the concept of the separation of ownership and control, which became evident in the late nineteenth century with the proliferation of publicly traded companies (Aguilera, et al., 2018). It first emerged in the 1970s and 1980s, as a result of the need to address the issue of separation between ownership and control in organizations. This separation generates the so-called agency costs (Jensen; Meckling, 1976). These factors are associated with the need to monitor agents due to the differences in interest that may arise from the delegation of decision-making authority.

The discussion around governance in the public sector arises in a context marked by the need to deal with the challenges arising from corruption. Public governance integrates the procedures in which social actors interact for the guidelines of social coordination, which are fundamental for cooperation structures to allow the resolution of complex public problems of the State. They are the interactive processes through which society and the economy are directed in favour of common collective goals (Torfing et al., 2012; Torfing, 2016). This encompasses the mechanisms of evaluation, direction and monitoring, aiming to ensure the efficiency and effectiveness of the actions of government practices. This resulted in the establishment of the basic principles that guide good governance practices in public organizations: transparency, integrity and accountability (IFAC, 2001, Brazil, 2014).

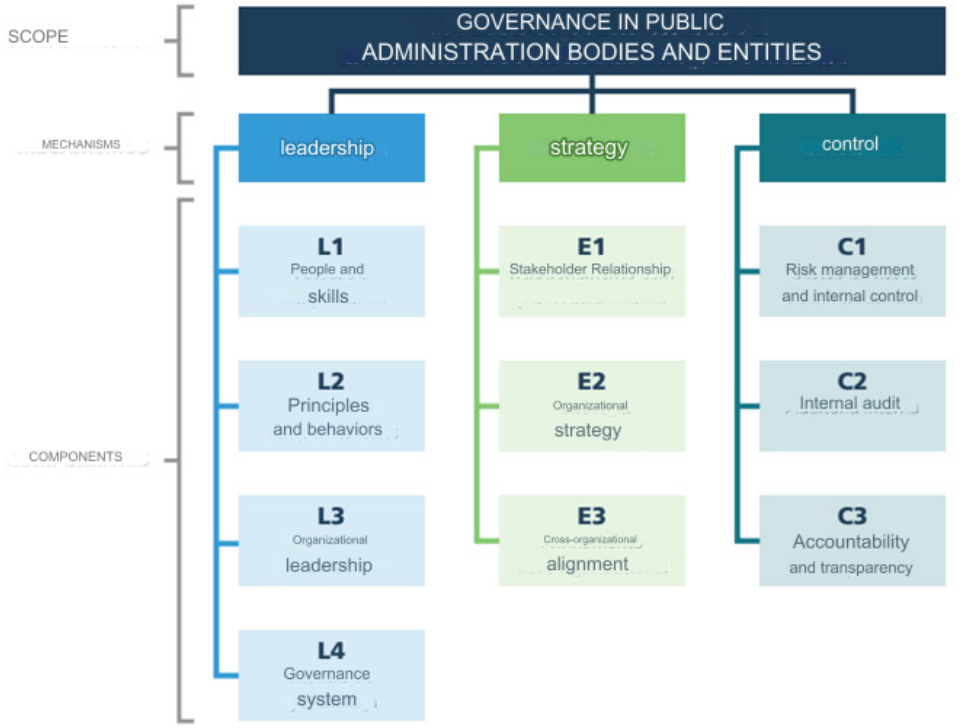
In Brazil, the growing need for governance was driven by the process of redemocratization, due to the expansion of public services resulting from the promulgation of the Federal Constitution in 1988. It was institutionalized in 1995 with the creation of the IBGC, and encouraged by Constitutional Amendment (EC) No. 19, of June 4, 1998, which included in article 37 of the Federal Constitution the principle of efficiency, in order to mitigate the patrimonial and bureaucratic remnants existing in the Brazilian public administration (Brasil, 1988).

The publication of the Fiscal Responsibility Law (LRF) and the implementation of the State reform have encouraged public authorities to adopt practices that are already established in the private sector. This adaptation of methods emphasizes the importance of mechanisms that ensure accountability and responsibility in the management of public resources. However, governance in the public sector presents unique challenges due to the diversity of actors involved. According to Marcelli (2013), the movement of the new Public Management influenced the way public management was carried out, adapting and transferring managerial concepts inherent to the private sector to the public sector. Unlike the private sector, multiple interests and accountability to society pose additional challenges.

Good public governance plays an essential role in risk management and the implementation of internal controls. It seeks to strategically guide, supervise, engage stakeholders, and manage strategic risks. It is important to emphasize that governance initiatives must be guided by the objective of the common good and supported by ethical conduct. Ethical performance, together with principles and best practices, inhibit corruption and lead to good governance, increasing the organization's chances of success (IBGC, 2015).

Travaglia and Sá (2017) emphasize that the implementation of good governance practices can be an effective tool to enable managers to optimize the use of existing resources, resulting in improved quality of public services offered. From their analyses, they concluded that several actions, such as the selection of competent leaders and the evaluation of their performance, the adoption of strategies to combat deviations, the establishment of goals, risk management, the implementation of internal control mechanisms, transparency, the structuring of accountability systems and accountability, contribute significantly to strengthening governance in public organizations. These findings converge with the governance mechanisms of the TCU governance framework as shown in Figure 1.

Figure 1. Governance mechanisms and components (TCU (2014a, p. 39))



Governance has gained worldwide prominence as a means of improving efficiency, reducing risk, and increasing the credibility of companies. However, there is still no consensus regarding the best practices and effectiveness of government regulations. The Covid-19 pandemic has exposed additional challenges. Vassileva (2021) argues that the crisis has increased the importance of corporate governance and the need for companies to respond quickly and effectively to ensure their survival. Governance has advanced significantly in recent years, with the adoption of transparency and accountability practices by public and private companies, but there are still challenges to be faced.

Based on the above, governance is a dynamic topic that evolves with time and circumstances. Its foundations have historical roots in the need to control the separation between ownership and control, but they are also influenced by more recent events, such as the Enron affair. Governance is essential to ensure the sustainability and success of organizations, whether public or private, as it allows them to establish and acquire ethical and legal standards, while protecting the interests of their *stakeholders*. In a broader context, governance is the system by which companies are directed and controlled, with responsibility attributed to senior management, whose actions are regulated by laws and regulations (Cadbury Committee, 1992). In this sense, it is essential to implement efficient governance in the public sector, indicating a high level of maturity in public management, as observed by Santos (2022).

3. RISK MANAGEMENT

3.1 Definition of Organizational Practices

Risk management is a practice that has been gaining prominence in organizations, it manifests itself as the second arm of the GRC structure. It is based on the identification, evaluation, and control of uncertain events that may affect the achievement of the organization's objectives. Lam (2003) describes that the function of risk management would be to generate a reduction in losses, the management of uncertainties and the optimization of the performance of companies. Risk in an organizational context is commonly described as any factor that can impact the achievement of corporate objectives (Hopkin, 2017).

The activities carried out by human beings, since ancient times, are closely linked to potential risks. In the corporate world, the study of risk emerged with the aim of minimizing losses in investments. For many years, the concept of risk was linked to activities in the financial sector (financial risk) and those related to extractivism (environmental risk). However, from the 1990s onwards, when the world economy

expanded and provided an accelerated increase in competitiveness and accessibility to markets, companies began to be more concerned with risk and to seek guidance that incorporated a new vision combined with business management (Galvão et al., 2008).

In organizations, risk management has become a strategic tool that influences the decision-making process. When integrated into routines, it can improve performance, control, quality, reduce waste and rework, in addition to providing better conditions to face uncertainties and achieve results (Dhlamini, 2022). Modern risk management should focus on using data and information analysis tools to make predictions, which implies, according to Hill and Dinsdale (2003), predicting future risks and knowing how to deal proactively with them, thus achieving proactive management instead of reactive management. In this sense, modern risk management must be future-oriented, with the aim of ensuring the organization's strategic objectives. Research indicates that national and international studies on risk management applied to higher education institutions indicate that the more improved the risk management of organizations, the more viable its continuity is (Christopher and Sarens, 2015). Thus, a question arises: are there models that help the development and continuous improvement of a system for risk management?

As previously mentioned, risk management within the scope of the Brazilian Federal Executive Branch was regulated through Joint Normative Instruction MP/CGU No. 1/2016. In its scope, the influence of international risk management models is noticeable, especially the COSO ERM model and the ISO 31000:2009 Standard - Risk Management - principles and guidelines, which have become models of best practices (Sax & Andersen, 2019; Souza et al., 2020). Currently, some risk management models are used as good practices, which are conceptual frameworks that provide guidelines for identifying, assessing, monitoring, and mitigating risks in an organization. They help establish systematic and coherent processes to manage risks and make controlled decisions about how to deal with them. COSO ERM, ISO 31000:2018 - Risk Management - principles and guidelines, in addition to the PMBOK (*Project Management Body of Knowledge*), are used as best practice models.

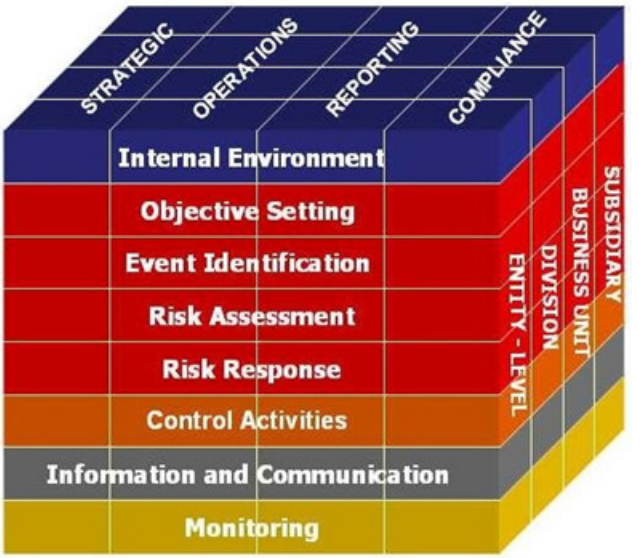
Created in 1985 in the United States, COSO (*Committee of Sponsoring Organizations of the Treadway Commission*) is a private non-profit organization whose objective is to prevent and avoid fraud in internal procedures and processes. It is composed of the American bodies AAA (*American Accounting Association*), AICPA (*American Institute of Certified Public Accountants*), FEI (*Financial Executives International*), IIA (*Institute of Internal Auditors*) and IMA (*Institute of Management Accountants*). The COSO model is the most used model for certification of compliance with Section 404 of SOX (a US law created in 2002 motivated by financial scandals, mainly the Enron case). This model provides the evaluation

criteria through a cube, which exemplifies the evaluation of the control environment and its effectiveness as shown in Figure 2.

Figure 2. Internal control environment (Coso 1992)

COSO ERM defines risk as everything that is outside the company's plan. Risk is an option in the actions taken, which depend on the degree of freedom of choice of the COSO manager (2004). Its dimensions are represented by figure 3 below.

Figure 3. COSO - IC and Coso ERM (COSO - IC 1992 and Coso ERM 2004) adapted to Portuguese



COSO (2004) warns of the need for managers to observe the interrelationship between the company's objectives, its elements (control environments) and its scope. In 2017, the scope of the framework was updated to include strategy and performance.

Figure 4. COSO enterprise risk management framework (Coso 2017 adapted to Portuguese)

According to Souza et al. (2020), adopting COSO ERM can provide organizations with a comprehensive conceptual framework for managing their risks, promoting a better understanding of the risks they are exposed to and helping to identify opportunities for improvement in risk management processes. Additionally, using COSO ERM can provide a more integrated view of risks, allowing organizations to assess and manage risks more efficiently and effectively.

The ISO 31000 standard, published in 2009 (and updated in 2018), establishes a more simplified model than COSO ERM. ISO 31000 is an international standard that establishes the principles and guidelines for risk management in organizations. It is designed to be applicable to any type of organization, regardless of size, industry, or nature of the business (ABNT, 2018). The standard is not certifiable, but

it can be used as a reference for the creation of internal risk management systems. If we use the ISO 31000:2018 guidelines, we will have the definition of risk as the "effect of uncertainty on objectives". Regarding the management of these risks, ISO defines it as the "coordinated process of activities to direct and control an organization with respect to risk" (ABNT, 2018, p. 6). The standard emphasizes that risk management must be integrated into all aspects of the organization and be a continuous and interactive process, with a focus on continuous improvement and increasing organizational resilience (ISO, 2018).

The risk management process, according to ISO, involves a scope of activities that, when carried out together, lead to good practices and, consequently, good results. However, the effectiveness of risk management will depend on its integration into governance and all the organization's activities, including decision-making. This requires the support of stakeholders, in particular the Senior Management (ABNT, 2018, p. 4). This risk management process is commonly carried out based on the generalities that the standard defines, as shown in figure 5 below.

Figure 5. ISO risk management process (ISO 31000:2018)

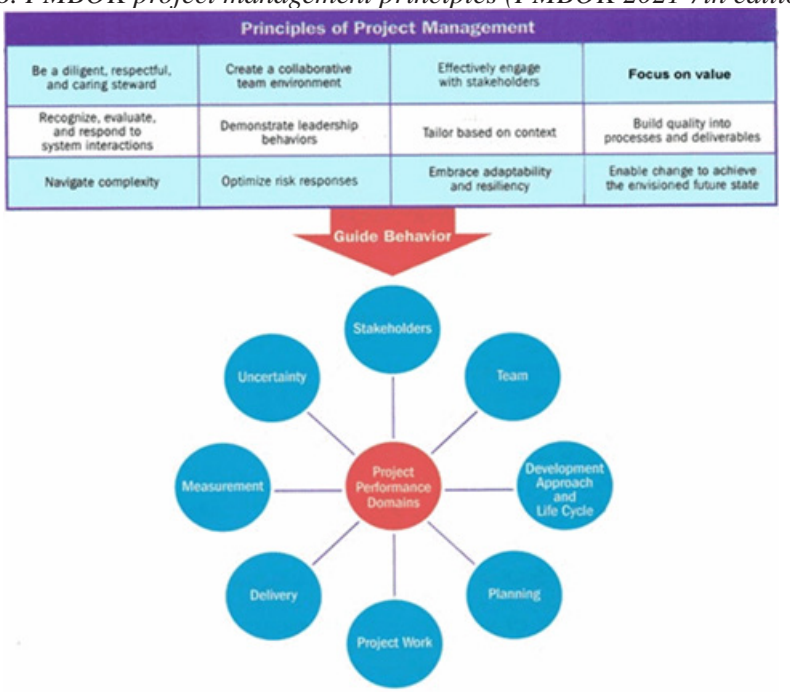
According to several scientific articles, ISO 31000 is widely used around the world as a reference in risk management, regardless of different applications, disciplines or countries. For example, Purdy (2010) points out that, among the main risk management standards, ISO 31000 occupies a prominent role, due to the international recognition of the ISO body. This model is used by organizations around the world to manage their risks. In short, ISO 31000 provides a comprehensive and flexible

framework for risk management in organizations of all types and sizes and is widely used as a benchmark for best practices in risk management around the world. Its systematic and structured approach helps organizations identify and manage risks effectively, bringing confidence to decision-making and sustainable value creation.

As a third tool, we have the Project Management Body of Knowledge (PMBOK), which is a collection of processes and areas of knowledge accepted as best practices for professional project management (Ramlaoui, S. Semma, A, 2014). It is a more comprehensive framework than the previous ones, as it provides a framework of good practices for project management, developed by the Project Management Institute (PMI) in the United States. Considering that the implementation of a GRC framework becomes a complete project management, we can draw several inspirations from this methodology. The PMBOK was initially launched in 1987 as a document containing basic information for project management and was updated in 1996, 2000, 2004, 2008, 2013, 2017 and 2021.

The conceptual framework of the PMBOK 7th edition is composed of twelve principles for value delivery, namely: Integrity, Team, Stakeholders, Value, Systemic Vision, Leadership, Adaptation, Quality, Complexity, Risk, Adaptability and Resilience, Change. Each of these principles includes a set of concepts that form a project management standard. In addition, the scope is composed of eight performance domains, which are groups of activities that relate the results of the project, as shown in Figure 6.

Figure 6. PMBOK project management principles (PMBOK 2021 7th edition)



We realize that risk is constantly present in the processes and, therefore, deserves adequate attention. According to the PMBOK 7th edition, risk is "an uncertain event or condition, which, if it occurs, will cause a positive or negative effect on one or more of the project's objectives". In addition, it brings risk management as the process of identifying, analyzing, and responding to project risks. Its goal is to increase the likelihood and impact of positive events and reduce the likelihood and impact of adverse events on the project. Then, strategies are developed to deal with these risks, such as avoiding, transferring or mitigating them.

According to the arguments of (Ramlaoui, S. Semma, A, 2014), the tool provides project managers with fundamental practices necessary to achieve organizational results and excellence in the practice of project management. The use of the PMBOK to control risk management brings several benefits, such as: standardization, which helps to ensure that all risks are identified; improving communication between project stakeholders; mitigating project risks, which can help avoid delays, additional costs, and other issues; in addition to an improvement in decision-making.

In view of the arguments exposed, we note the importance of risk management for organizations, especially for public agencies, which are the objects of this study. The establishment of a continuous and intelligent risk management system tends

to stimulate innovations. To this end, it is necessary to adopt control structures and techniques aimed at reducing risks and increasing confidence in the achievement of the organization's strategic objectives. The reason for integrated risk management is the “continuous, proactive, and systematic process of understanding, managing, and communicating risks from the perspective of the organization as a whole. Its goal is to enable strategic decision-making that contributes to the achievement of the organization's overall corporate objectives” (TBS, 2001).

3.2 Compliance

Compliance, also referred to as compliance, appears as the third pillar of the GRC framework. The term expresses a concept that acts within organizations with the objective of guiding management on rules and regulations, being considered a critical topic for business management. For the Brazilian Federation of Banks (Febraban), the term transcends the idea of “being in compliance” with laws, regulations, covering aspects of governance, conduct, transparency, and topics such as ethics and integrity (Febraban, 2018). Thus, although there is no equivalent translation into Portuguese, it is understood that the expression represents strict compliance with the rules and agreement with what is legal.

For Manzi (2008) The meaning of norms is linked to the fact that they are concretions and materializations of ethical, legal and democratic principles. The rule of law is a set of rules that give meaning to fundamental values, set limits on power, and provide guarantees to individual rights. In this sense, it is perceived as a consequence and even a demand of the democratic rule of law (Manzi, 2008; Singh and Bussen, 2015).

In the Brazilian system, after the Federal Constitution of 1988, there was a promotion of a series of laws to combat corruption and promote integrity in public and private organizations.

- the Bidding and Administrative Contracts Law (Law No. 8,666/1992);
- the Administrative Improbity Law (Law No. 8,429/1992);
- the Competition Law (Law No. 12,529/2011);
- the Money Laundering Law (Law No. 9,613/1998 and Law No. 12,683/2012);
- the Conflict of Interest Law (Law No. 12,813/2013);
- the Anti-Corruption Law (Law No. 12,846/2013).

With the implementation of these laws, a clear evolution is observed in line with the New Public Management (NPM). Public sector organizations underwent a managerial reform that introduced concepts such as efficiency, efficacy and effectiveness, along with the logic of results, relating them to the search for improvements in the

performance of public entities, as occurs in the private sector (Cavalcante, 2018; Palermo, 2014). In addition, there was an improvement in corporate and government practices to prevent and combat corruption, aiming to promote the integrity of the State.

Good governance practices indicate that organizations must implement an integrity program, aiming to establish the promotion of transparency, participation, accountability, and integrity itself. In the case of public agencies, this will bring more credibility to the organization, being able to attract investors and, consequently, adding value. There are numerous reasons that justify the adoption of an integrity program in public agencies, linked to compliance with different rules and regulations, the prevention of corruption and other illicit acts (conflict of interest, money laundering and other frauds), in addition to the strengthening of corporate governance, which acts as a way to reinforce the image and reputation of organizations (Veríssimo, 2017).

The integrity program seeks to ensure the articulation of auditing, compliance, internal controls, business ethics, crisis management, risk management, corporate security and sustainability activities. This ecosystem collaborates with management by providing indicators and points of attention, acting as red flags in relation to all activities integrated by the system, through the provision of reports and guidelines that support the indicators. Coimbra and Manzi (2010) corroborate this system, arguing that the integrity system monitors key indicators and prudential limits, activating devices that interrupt and mitigate crises, whenever activities to prevent deviations fail.

The integrity plan should be seen as a tool for sustainability and organizational competitiveness, as the market and society increasingly demand that public and business decisions be guided by values such as transparency, ethics, and responsibility. According to the OECD, integrity is a cornerstone of good governance, being a condition for all other government activities not only to have trust and legitimacy, but also to be effective (OECD, 2018).

Therefore, in addition to the requirements of the legislation, compliance must ensure that the organization is operating in line with the standards established by governance. Due to the alignment of risks with strategic, tactical, and operational objectives, the risk prioritization developed by ERM helps to achieve the objectives set. It is important to note that the effectiveness of compliance and its effectiveness as a pillar of GRC depend not only on the adoption of clear policies and procedures with goals, but also on the commitment of senior management and the engagement of all organizational levels in promoting an ethical culture and compliance with applicable rules and regulations.

3.3 Techniques Applicable to GRC Practices

3.3.1 SWOT Analysis

To identify risks and overcome threats or prepare for them, management can create strategic actions in response to risks by understanding their conjuncture in relation to their weaknesses. To achieve this goal, SWOT analysis is particularly suitable because, when used correctly, it can provide insights and help the organization identify significant opportunities to explore. In short, it is an evaluation model that measures an organization's capabilities and limitations, as well as its potential risk areas. This tool is essential for assessing the organization's competitive position and identifying its strengths, weaknesses, opportunities, and threats. The SWOT analysis, according to Appio et al. (2009), is a tool that, by identifying the positive and negative aspects of the institution and correlating them, allows a holistic, complete and real knowledge of the context of action and of the institution itself, collaborating in decision-making to improve the company's performance.

The tool studies the competitiveness of an organization from the perspective of four variables: Strengths, Weaknesses, Opportunities and Threats. The fundamental objective of the SWOT analysis is to facilitate the choice of a specific strategy to achieve specific objectives through a critical evaluation of the internal and external environments. It is worth noting that, at the time of collecting information related to the factors of analysis, Chiavenato & Sapiro (2009) explain that they must be based on the strategic intention of the organization, taking into account the mission, vision, values and organizational objectives.

In relation to the internal environment, according to Rezende (2008), organizational strengths or strengths are internal and controllable variables that provide the organization with advantages in relation to its environment. These are attributes or characteristics of the organization that can positively impact its performance. Therefore, strengths should be widely exploited by the organization. Weaknesses, on the other hand, are considered deficiencies that inhibit the organization's ability to perform and must be overcome to avoid bankruptcy (Matos et al., 2007).

As for the external environment, opportunities are the external and non-controllable variables that can create favourable conditions for the organization, as long as it has the conditions or interest in using them, as exposed by Rezende (2008). According to Oliveira (2010), threats are external conditions that have an influence on the institution and can bring certain difficulties. Next, we have the visual arrangement of the SWOT Analysis through Figure 7.

Figure 7. SWOT analysis (Adapted from Silva (2009))

Studies point to the benefits of the tool. In an exploratory case study, published in 2018 in the Strategy & Development Magazine and entitled "SWOT Analysis: Case Study in a Higher Education Institution", the authors conclude that the impact of SWOT analysis on the company's strategy is like a kind of rudder, which guides to the best path to be followed. However, it is necessary to have the ability to understand what really needs to be done to obtain positive results.

A second study, entitled "Institutional Diagnosis of the Federal University of Paraíba from SWOT Analysis", published in the journal Meta: Evaluation in 2019, aimed to carry out an institutional diagnosis of the Federal University of Paraíba (UFPB) using SWOT analysis as a strategic management tool. The study highlights that the tool was useful for the composition of UFPB's institutional diagnosis, allowing the identification of relevant aspects for the university's strategic management. It is recommended to continue using this tool to improve the management of the institution and ensure its long-term sustainability.

In summary, studies indicate that SWOT analysis can be a useful tool for Brazilian educational institutions in identifying their internal strengths and weaknesses, as well as external opportunities and threats. However, it is necessary to adapt the tool to the specific context of the institution and integrate it with other management and planning processes to obtain better results.

3.3.2 Brainstorming

Brainstorming is an idea generation technique. The technique is composed of four basic rules: (1) Criticism should be banned - the evaluation of ideas should be saved for later moments; (2) The free generation of ideas should be encouraged; (3) Focus on quantity, the greater the number of ideas, the greater the chances of having valid ideas; (4) Combining and refining ideas generated by the group (PMBOK - PMI, 2004). Electronic "Brainstorming" aims to generate ideas via the web, where participants will have faster access to the ideas generated and will be able to develop new ideas (Aiken et al., 1994). This technique corresponds to an improved approach to traditional "Brainstorming", ensuring anonymity among participants and a similarity to the work team, since there will be no influence or monopoly of a participant in relation to the group, contributing to overcoming the problems generated due to the differences in hierarchy, experience and knowledge of some in relation to other team members. This enables parallel communication, allowing participants to enter comments simultaneously and contribute new ideas. The greater the number of information generated, the larger the participating group can be. There is also the automation of records, allowing all comments and ideas generated by the participating team to be stored (Morano, 2003).

According to ISO 31010:2012, which deals with risk management identification and assessment techniques, Brainstorming is classified as strongly applicable in this risk identification process, it is very useful where there is no data or where innovative solutions to problems are needed (ISO 31010, 2012).

After the information gathering stage, the ideas that emerged must be documented and organized, performing a critical analysis and weighing the advantages and disadvantages of each one. Therefore, online brainstorming can be highly effective, generate radical ideas, and include the shyest team members in the discussion, as well as automatically record all ideas in one place. However, care must be taken to overcome the aforementioned weaknesses.

3.3.3 Cause and Effect Analysis

Cause and effect analysis has the function of helping to detect the roots of a problem, and what effects or consequences these events may cause if they occur. For Werkema (1995), the cause and effect diagram is configured in using information to demonstrate the relationship between a result of a process, referring to the effect and the factors that may have changed the result of the process.

This technique is also known as the Ishikawa diagram or fishbone. Created in 1943 by Kaoru Ishikawa, a chemical engineer at the University of Tokyo, the Ishikawa diagram helps to identify the root cause of a problem and analyze all the factors

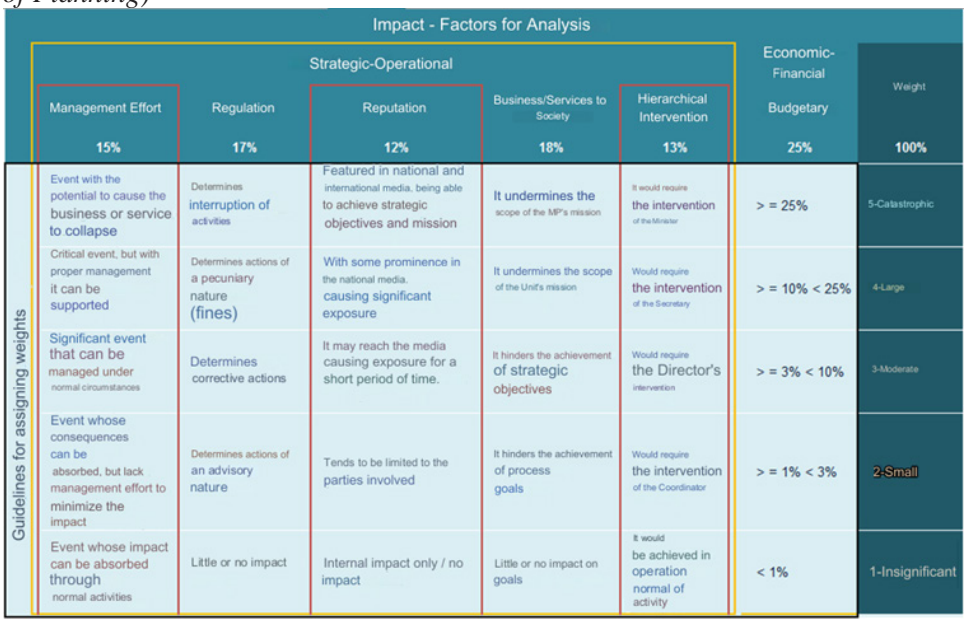
involved in executing a process. One of the strengths of this tool is its ability to employ systems thinking, as the diagram takes into account all the data and aspects that may have caused the problem. In this way, using a cause and effect diagram, the chance of any influencing factor being forgotten or neglected is greatly reduced.

ISO 31010, 2012 treats the technique as an analysis that provides a structured graphical visualization of a list of causes for a specific effect. The effect can be positive (a goal) or negative (a problem), depending on the context.

3.3.4 Risk Matrix

The Risk Matrix is a visual arrangement, which establishes an individual comparison of risks based on impacts and probabilities of occurrence, in order to prioritize and manage them (ISO 31010, 2012). With the emergence of emerging risk events, the risk matrix must be promptly updated. In addition, it is essential to update it at least once a year, during the review of the organization's strategic planning, being a document in constant evolution. It is a 5 by 5 Matrix, calculated from the product of two scales ranging from 1 to 5, in a qualitative-quantitative way, in which the perceptions of those involved are essential for the evaluation. For the scope of this study, a five-point scale was chosen, according to the methodology of the Ministry of Planning, which has its scope based on the guidelines of COSO. For the impact, 5 analysis factors are used, each with its respective weight, as shown in Figure 8.

Figure 8. Strategic-operational and economic-financial aspects (Risk Matrix - Management of Integrity, Risks, and Internal Controls of Management - Ministry of Planning)



Impact - Factors for Analysis							
	Strategic-Operational					Economic-Financial	Weight
Guidelines for assigning weights	Management Effort 15%	Regulation 17%	Reputation 12%	Business/Services to Society 18%	Hierarchical Intervention 13%	Budgetary 25%	100%
	Event with the potential to cause the business or service to collapse	Determines interruption of activities	Featured in national and international media, being able to achieve strategic objectives and mission	It undermines the scope of the MP's mission	It would require the intervention of the Minister	> = 25%	5-Catastrophic
	Critical event, but with proper management it can be supported	Determines actions of a pecuniary nature (fines)	With some prominence in the national media, causing significant exposure	It undermines the scope of the Unit's mission	Would require the intervention of the Secretary	> = 10% < 25%	4-Large
	Significant event that can be managed under normal circumstances	Determines corrective actions	It may reach the media causing exposure for a short period of time.	It hinders the achievement of strategic objectives	Would require the Director's intervention	> = 3% < 10%	3-Moderate
	Event whose consequences can be absorbed, but lack management effort to minimize the impact	Determines actions of an advisory nature	Tends to be limited to the parties involved	It hinders the achievement of process goals	Would require the intervention of the Coordinator	> = 1% < 3%	2-Small
	Event whose impact can be absorbed through normal activities	Little or no impact	Internal impact only / no impact	Little or no impact on goals	It would be achieved in operation normal of activity	< 1%	1-Insignificant

Regarding probability, each point indicates a chance of occurrence, and a relative description is assigned to its score.

Figure 9. Observed/expected frequencies and their respective orientations (Risk Matrix - Management of Integrity, Risks, and Internal Controls of Management - Ministry of Planning)

Probability		
Scale	Observed/Expected Frequency	Scale Description
5 - Very high	> = 90%	Event expected to occur under most circumstances
4 - High	> = 50% < 90%	Event likely to occur under most circumstances
3 - Possible	> = 30% < 50%	Event must occur at some point
2 - Low	> = 10% < 30%	Event may occur at some point
1- Very low	< 10%	Event may only occur in exceptional circumstances

This process is carried out in order to calculate the inherent risk, which is a score obtained by multiplying the probability and impact of a risk event, without taking into account any control mechanisms. This multiplication results in a numerical value ranging from 1 to 25, representing the level of the risk event. The inherent risk can be classified as follows.

Figure 10. Levels of risks and respective cutoff points (Risk Matrix - Management of Integrity, Risks and Internal Controls of Management - Ministry of Planning)

The matrix is able to provide 14 values that indicate the level of risk, calculated by the inherent risk. For example, if an event is classified as having a small impact with a score of 2, and the probability of occurrence is assessed with a score of 4, then the risk level will be considered High, as the product of these two factors will be equal to 8, as shown in Figure 11 as follows:

Figure 11. 5x5 risk matrix – Risk levels (Risk Matrix - Management of Integrity, Risks and Internal Controls of Management - Ministry of Planning)

According to COSO ERM, the risk management process allows for a detailed analysis of the risks faced by the organization, identifying both operational risks and strategic and compliance risks. This helps to prioritize the areas of greatest impact and likelihood, allowing the organization to focus its resources and efforts on the most critical areas. Based on risk assessments, the organization can adopt appropriate preventive or corrective measures, making managers and other stakeholders aware of the existing risks and the measures adopted to mitigate them. Villanueva, Nuñez, and Martins (2022) highlight the importance of a risk management framework integrated into the business culture. This integration allows you to manage risk-related activities, assign responsibilities, and strengthen the integration and commitment of employees in the development of the process. Therefore, the preparation of the Risk Matrix provides benefits related to governance, risk management, decision-making, and regulatory compliance.

4. ANALYSIS OF THE PERCEPTION OF A GOVERNANCE, RISK MANAGEMENT AND COMPLIANCE SYSTEM USING THE TECHNOLOGY ACCEPTANCE MODEL (TAM)

4.1 Origin and Evolution of the TAM Model and Its Dimensions

The growing need for improvement in Governance, Risk Management and Compliance (GRC) is becoming one of the main requirements for organizations, driven by several factors. This includes the need to adhere to new regulations, such as fiscal responsibility, anti-corruption law, the ability to monitor these practices to reduce financial scandals, as well as the analysis of internal and external threats. As noted by Menzies (2006), the number, complexity, and importance of GRC requirements are constantly growing as organizations seek to meet international standards and expectations. This requires additional efforts to address risks and ensure compliance with laws, provisions, and voluntary obligations in order to improve its market position by promoting efficiency and effectiveness. When it comes to governance, Smet and Mayer (2016) state that information technology is no longer just a technical issue and, currently, its complexity and relevance in companies require essential attention. This drives modern organizations to equip themselves with technological tools that contribute to this process.

The demand for GRC from the business market in the private sector and from control and inspection agencies in the public sector has boosted the understanding of individuals' perception of these systems. This research aims to evaluate the use of a specific GRC system, investigating the influence of perception between managers and subordinates on the overall result, using the Technology Acceptance

Model (TAM) as a basis. This model, originated in Davis' studies in 1989, located a fundamental conceptual framework for understanding how people perceive and adopt new technologies. Its dimensions, perceived utility (PU) and perceived ease of use (FUP), have been extensively applied to understand the ease of information systems and technology in various contexts.

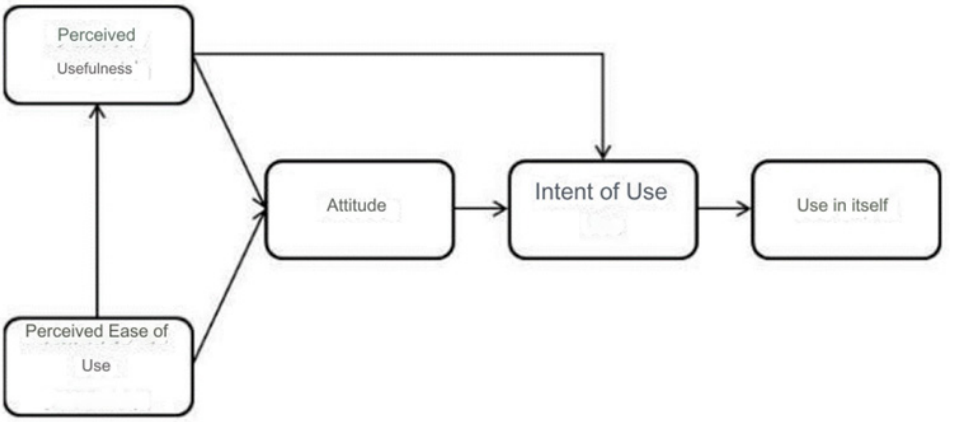
The general perception of the application of governance practices is a crucial element for the performance of organizations. Understanding the relationships between individuals' perceptions of the usability and ease of use of GRC systems and their management is essential for improving organizational performance.

Previous studies have explored the application of the TAM Model in different contexts, providing important data on the adoption of technological systems. However, there is a gap to be filled in the specific understanding of the hierarchical perception of systems in the public service intended for the application of GRC practices. In this study, a specific GRC software was used as an object of investigation, in the administrative area of the Federal Institute of Bahia (IFBA), Campus Eunápolis-BA.

The research is expected to evaluate the perceived usefulness and perceived ease of use, and from this verify if there are differences in perception between managers and subordinates in relation to the system. From this introduction, the literature review in section two, containing previous studies, presentation of the software; in section three, the methodology applied in the research, data collection; in section four, the presentation and discussion of the results, and finally in the fifth section, the final considerations. This framework aims to provide a comprehensive analysis of users' perceptions of the GRC system, exploring its dimensions, application contexts, and implications of governance strategies in the organization.

The Technology Acceptance Model (TAM), proposed by Davis in 1989, is a model derived from the Theory of Rational Action (ART) that seeks to explain the behaviour of technology use (Davis, 1989). ART is a general theory, which seeks to explain possibly any human behaviour. However, Davis realized the need for a more specific model for technology adoption and thus developed TAM, which is a methodology based on the idea that there are two key factors that influence how an innovation is accepted and how it is acted upon: Perceived Utility and Perceived Ease of Use (Davis, 1989). Perceived utility (PU) is defined as the user's perception that using a specific system will increase its performance. On the other hand, perceived ease of use (FUP) refers to the user's perception that using a system will not require effort. These two dimensions are considered the main determinants of a user's intention to adopt and use a technology. By considering these dimensions, researchers can gain interesting findings on how to improve the uptake and use of specific technologies. See Figure 12:

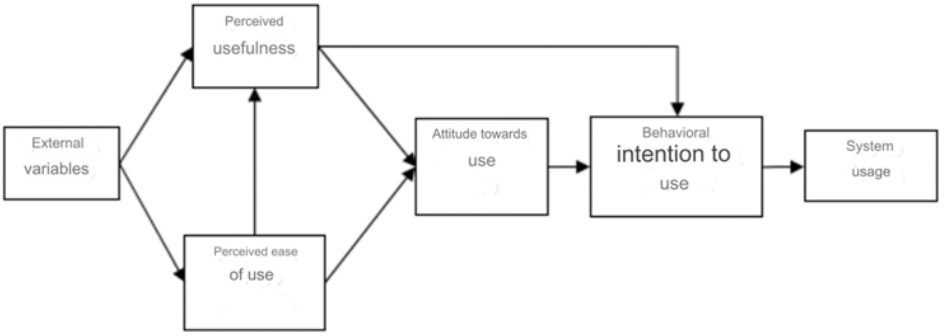
Figure 12. TAM model (Adapted from Davis, Bagozzi, and Wrshaw (1989) and Davis (1989))



Over time, TAM has evolved and adapted, maintaining its relevance in predicting and explaining technological acceptance. Its applicability in various contexts and its ability to explain variations in the intent or actual use of technology have contributed to its prominence. It has been an influential model in technology acceptance research, with many subsequent studies expanding or modifying the original model to suit different contexts or to incorporate new variables. For example, TAM II, proposed by Venkatesh and Davis, added additional variables to explain the acceptance of technology in an organizational context. Similarly, TAM III, also proposed by Venkatesh and other scholars, incorporated even more variables to explain the technology's acceptance, including peer influence and previous experience with the technology.

By considering the external variables that affect technology adoption, TAM proposes a comprehensive understanding, including users' behavioural, and contextual characteristics (Davis, 1989). This is reflected in the representation of the model, seeking to capture the causal relationship between external factors and the acceptance of the technology by users, according to the flow of the TAM model, Figure 13.

Figure 13. List of constructs of the TAM model (Adapted from Davis; Bagozzi; Warshaw (1989))



In summary, the TAM and its dimensions provide a good framework for understanding and predicting the acceptance and use of technology. Through the relationship between PU and FUP, the model provides a fundamental basis for tracking the impact of external variables on the behavioural intention to use (or not use) technology. The main result is that its structure provides a basis for the investigation of the behaviour of external variables. According to Davis (1989, p. 21), "external variables encompass all variables not explicitly represented in the model" (i.e., perceived ease of use, perceived utility, and use variables), including "demographic or personality characteristics of the actor, the nature of the particular behaviour under consideration, and the characteristics of the referents."

In this study, the TAM was applied to understand the acceptance of a governance, risk management and compliance system, based on the mediating role of PU and FUP in the relationship between system characteristics, with the application of the influence of perceptions in different groups of users.

4.2 Perception of Governance, Management, and Performance

Governance and management are two fundamental concepts in public and private administration. Governance, as defined by the World Bank, refers to organizational structures, functions, processes, and traditions that aim to ensure that planned actions are executed in such a way that they achieve goals and results in a transparent manner (World Bank, 2013).

Governance functions include setting the strategic direction, overseeing management, engaging stakeholders, managing strategic risks, managing internal conflicts, auditing and evaluating the management and control system, and promoting accountability and transparency. On the other hand, management refers to the day-to-day functioning of programs and organizations in the context of strategies,

policies, processes and procedures that have been defined by the agency (World Bank, 2013). Management functions include implementing programs, ensuring compliance with regulations, reviewing and reporting on the progress of actions, ensuring administrative efficiency, maintaining communication with stakeholders, and evaluating performance and learning.

The relationship between governance and management is a two-way street. Governance provides the strategic direction and oversees management, while management implements the strategies and policies set by governance. Both concepts are essential for the effective functioning of any organization.

Figure 14. Relationship between governance and management (TCU Basic Governance Framework, 2014)

The basic framework of the TCU (2014) integrates governance practices related to organizational leadership, through evaluation, direction, and monitoring, especially regarding the achievement of organizational goals. This implies that the management defines guidelines for the fulfilment of such actions. In addition, senior management is presumed to evaluate, guide and monitor the performance of the organization's management, as well as its compliance with external standards and internal guidelines.

The search for organizational performance is a key element in the evaluation and success of organizations, this constant pursuit of good results is typified as a management attribution, which occupies a significant role in this evaluation. According to Otley (1999), performance is intrinsically linked to the achievement of organizational objectives and is a direct result of the interconnection between planning, decision, action and results obtained. This broader understanding of performance, as argued by Micheli and Mari (2014), transcends the merely economic

aspect. Measurement should provide relevant information for decision-making and can be viewed through different lenses, as Oyadomari (2008) points out.

The use of systems for performance improvement, as defended by Otley (1999), is not limited only to the managerial aspect, but also has social, behaviour al and economic implications, considering the organizational context. Speklé and Verbeeten (2014) highlight the use of these systems to influence and facilitate managerial decisions in various operational and exploratory aspects. In this context, the experience in the use of integrated systems such as Kaplan and Norton's Balanced Scorecard (BSC), Simons' control levers, and Ferreira & Otley's performance control and management framework, as reported by Berry et al. (2009), provide models for organizational performance improvement and are frequently used by managers.

Improved performance, according to Abernethy; Bouwens and Van Lent (2013) involve attributing value to elements considered crucial by the organization, aligned with its strategic objectives. Thus, understanding and promoting organizational performance is a characteristic management activity, in addition, it is vital to guide objectives, strategies, and decisions, sustain competitiveness, and ensure the survival and growth of organizations.

Therefore, it is important to assess whether there are differences when assessing the perception of governance systems between different hierarchical groups in an organization. Understanding whether these perceptions influence the evaluation of GRC systems is an important challenge for researchers and practitioners in the field. Thus, this methodology provides a useful framework for understanding how (UP) and (FUP) influence a user's intention to adopt and use a technology (Davis, 1989), this time, including governance systems.

4.3. Review of Previous Studies Related to the Application of TAM

The model applied in this research has been the subject of several studies since it was proposed by Davis in 1989. Initially, the TAM was subjected to testing and validation in two different groups of users. One group was made up of 112 IBM users from Canada and the other was made up of 40 MBA students from Boston University, USA. Each group used two different systems, with acceptance tests applied to these groups. The results of these tests revealed different nuances regarding the perception and intention of use of these collaborators (Davis, Bagozzi and Warshaw, 1989).

Adam et al. (1992) replicated the TAM construct, demonstrating its internal consistency and reliability at two scales. These studies provided theoretical and empirical support for TAM, reinforcing its relevance and applicability in various contexts. Silva and Dias (2006) reinforced the need for empirical support for the model, both by researchers and professionals. They indicated that TAM's value proposition is

based on the predictability of whether or not the new system is acceptable to users. In addition, TAM can help diagnose reasons for users' dissatisfaction with a system and suggest corrections to reverse this situation, thus increasing the acceptance of the adopted information system.

In Brazil, there are some studies that demonstrate how it can be explored in the most diverse sectors and market situations. The study by Farias and Borges (2012), investigated the acceptance of technology in the perception of restaurant managers and waiters, categorizing stimulus or resistance factors. The main factors of resistance to technology adoption by the waiters interviewed were the lack of adequate training, the complexity of the system, and the perception that technology could replace their jobs. The managers interviewed evaluated the impact of technology on the service efficiency of their restaurants as positive but emphasized the need for billing and control mechanisms to ensure proper use by employees. The study suggests that technology adoption in restaurants can be improved through proper training, clear communication, and incentives for employees.

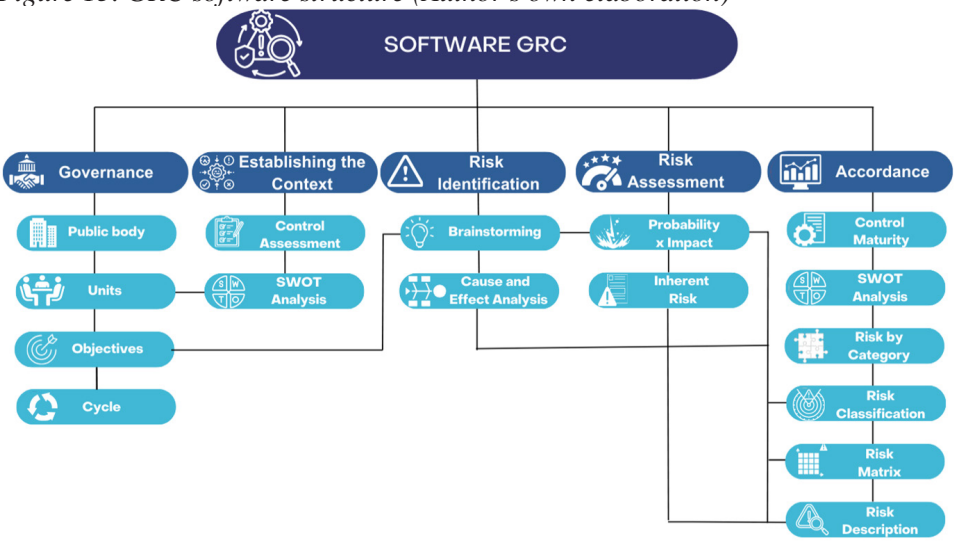
The study conducted by Souza and Medeiros (2020), addresses the intention of managers of tourist enterprises to use cryptocurrencies as a form of payment. To better understand this intention, the authors use TAM, a model that seeks to explain how people adopt new technologies. The results indicate that managers consider it easy and have a positive attitude towards the use of cryptocurrencies, but the perception of usefulness does not directly interfere in the decision to use them. The TAM can serve to identify the factors that influence the adoption of cryptocurrencies in the tourism sector.

Finally, the study by Vasconcelos et al. (2023), presents an evaluation of the usability and acceptance of the Project Management Information System (SIGProj) in a Brazilian university. The study used an empirical approach, including usability tests, questionnaires, and interviews with SIGProj users. The results indicated that the current SIGProj presents usability problems and that users have a low perception of acceptance and intention to use. In addition, the study proposes a new system to improve the usability and design of SIGProj, which was positively evaluated by users. However, the sample size and other limitations of the survey may affect the validity of the results. As future studies, the authors suggest conducting a comparative study between the two versions of the SIGProj and evaluating engagement attributes. The theoretical model has been applied in several tourism and technology studies, including the use of cryptocurrencies by tourism development managers (Silva and Marques, 2022). These studies relate the implementation of the use of technology to managers, but there is still a gap for more research in the public service. Thus, the research proposes to study these perceptions in a Brazilian federal educational institution in the context of public service.

4.4 Governance, Risk Management, and Compliance Software Used in the Study

The GRC software is a project developed from the model proposed in the study by Oliveira and Miranda, (2024). The study sought to implement the practices of Governance, Risk Management and Compliance, materialized through the application of techniques directed by the international methodologies, COSO, ISO31000 and PMBOK, aimed at mapping existing risks and controls, identifying potential risks that may harm the strategic, tactical and operational objectives of the IFBA. The software developed on a web platform, with JavaScript programming language, contemplated with the following functionalities, as shown in Figure 15.

Figure 15. GRC software structure (Author's own elaboration)



The system has the first Governance section, where information about the participating agency, units, objectives and process cycle is recorded. The next sections are designated the governance strategy, and the second section is intended to establish the context: in this phase, the institution answers a questionnaire to assess the organization's level of maturity in relation to internal control. Soon after, it evaluates the internal and external environment with the application of SWOT analysis, to obtain internal knowledge of the organization.

The third section is the identification of risks: in this stage, the organization's risk events are identified, through the online *Brainstorming* technique. The starting point is to discover and define the risks in detail, investigating their causes and

effects. The fourth section is the risk assessment: risks are evaluated through the dimension of their Impacts and their probabilities of occurrence, where the inherent risk is calculated, and through their classification, a Risk Matrix is prepared. In the fifth section, the software provides compliance reports for managerial analysis and decision-making. The model aims to systematize the application of GRC practices, using information technology as a strategy, contributing to the efficiency and optimization of management in the public service.

5. METHODOLOGY

For the evaluation of the (PU) and (FUP) in the perception of managers and subordinates about the proposed GRC system, it is indicated to achieve the main objective of the research, to adopt an exploratory and descriptive approach with the application of questionnaires. This type of research, as highlighted by Gil (2002), aims to explain the characteristics of observed phenomena, providing a new view of the problem.

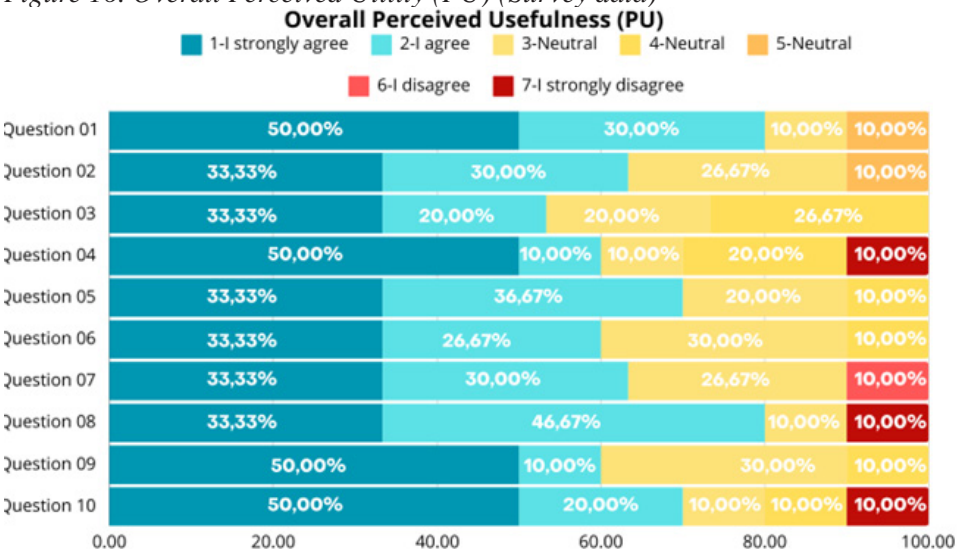
Data collection was carried out in a virtual environment, with questions based on the study by Davies (1989) "user acceptance of information systems: the technology acceptance model (TAM)", with objective answers considering the *Likert scale*, to evaluate the questions between extremes, varying, for example, from "Strongly Agree" to "Strongly Disagree", with seven levels of agreement, twenty of which were questions aimed at analysing the TAM variables. The actors who responded to the survey were 8 administrative technicians, from the sectors linked to the administrative board of the IFBA, 1 Master's, 1 Master's student, 3 Postgraduates, 3 Graduates, in different areas of training, namely: Accounting Sciences, Administration, Law, Economics, Systems Analyst and Letters. The participants were chosen because they are active civil servants and allocated in that area, in addition to all of them obtaining more than 5 years of experience in public service. It is worth mentioning that those mentioned participated in the study that implemented a process of application of GRC practices at the IFBA, and had interaction with software, being divided into two hierarchical groups of managers and subordinates.

After data collection, the analysis was used to evaluate possible influences of a certain group among managers and subordinates regarding PU and FUP on the overall result of the evaluation, the information was analysed through the percentage analysis of the answers obtained.

6. RESULTS AND DISCUSSION

In this section, the results of the research are presented, discussed based on the data collected. Initially, the study aimed to evaluate the level of acceptance of the system in relation to the TAM parameters of UP and FUP. Graphical analysis suggests a positive evaluation between TAM variables in relation to the GRC system. The percentages of (PU) can be analyzed through Figure 16.

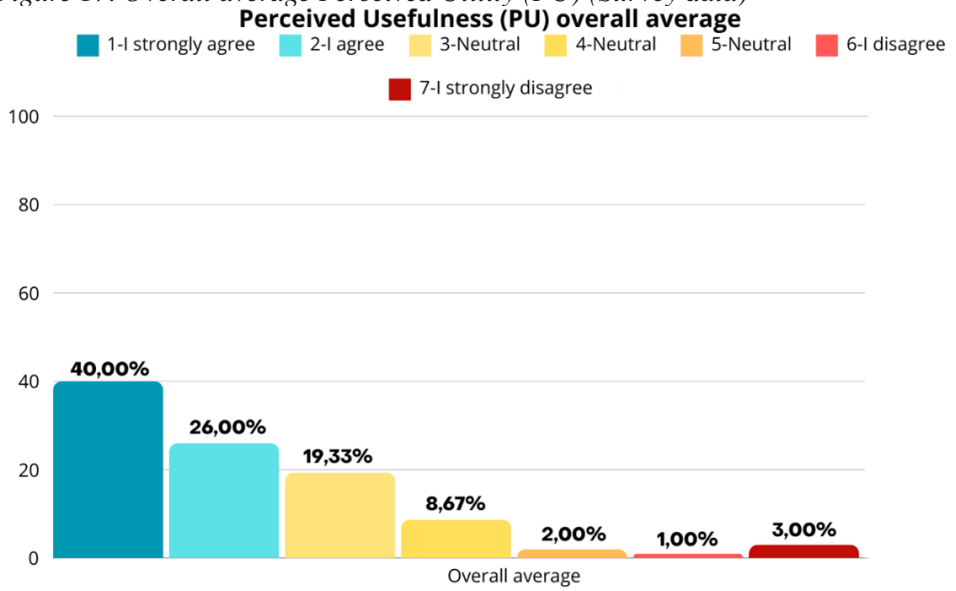
Figure 16. Overall Perceived Utility (PU) (Survey data)



The questions that had the highest percentages of strong agreement and UP agreement were: 1, 5, 8 and 10, with more than (70.00%) of agreement each. This suggests that users place a higher value on the quality, productivity, effectiveness, and overall usefulness aspects of the system for their work. These issues are related to the benefit that the GRC system brings to the performance of users and to the performance of their tasks.

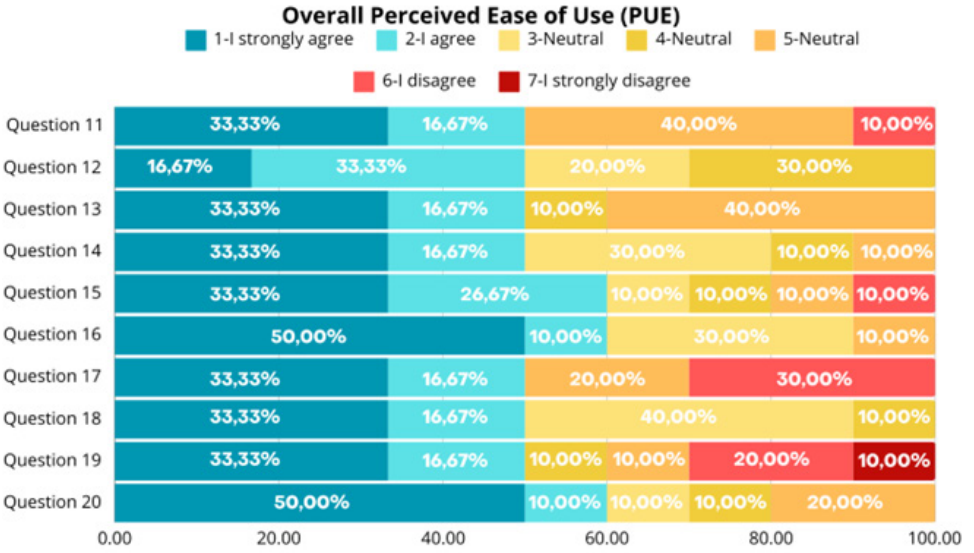
The question that had the lowest PU agreement evaluation was question 3, with (46.67%) neutrality. This suggests that some users do not have a definite opinion or do not perceive the GRC system as a factor that increases their speed or their performance at work. These issues are related to the efficiency that the GRC system provides for users and for the execution of their tasks. Figure 17 shows the overall mean PU per level of agreement.

Figure 17. Overall average Perceived Utility (PU) (Survey data)



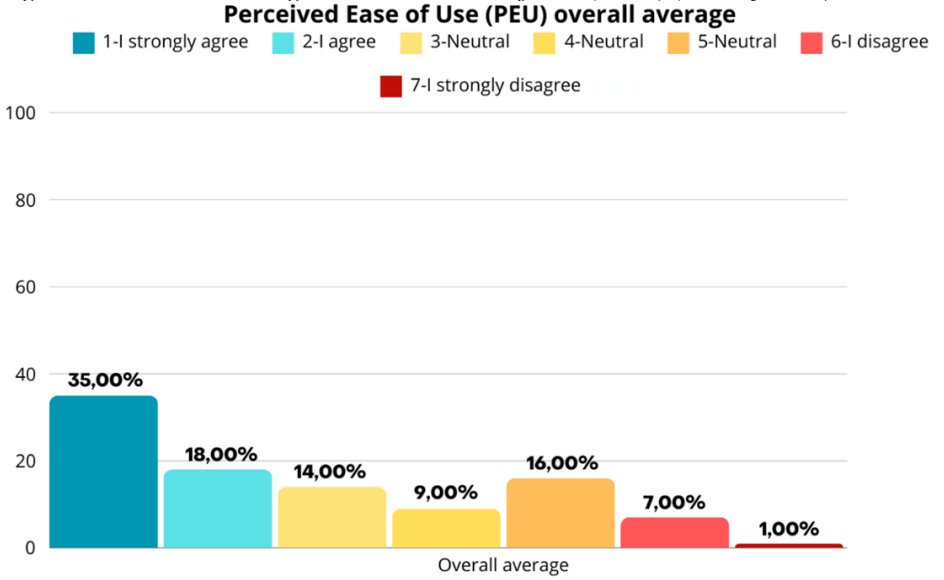
The overall mean PU was (66.00%) agreement, (30.00%) neutrality, and (4.00%) disagreement. This indicates that most users perceive the GRC system as useful for their work, but there is a significant portion of users who do not have a defined opinion and only (4.00%) disagree with this perception. Therefore, the percentages of FUP can be analyzed through Figure 18.

Figure 18. Overall Perceived Ease of Use (FUP) (Survey data)



The questions that had the highest FUP averages were: 15, 16 and 20, with (60.00%) of agreement each. This suggests that most users consider the GRC system to be not rigid and inflexible and understand it as a facilitator of their work. These issues are related to the ease of learning and memorization of the system, and to its clarity and comprehensibility. On the other hand, the questions that had the highest disagreements of FUP were: 17 and 19, with (30.00%) of disagreement each. This suggests that some users understand that to use the system requires a certain skillful and mental effort. These issues are related to the complexity of the system. Figure 19 shows the overall mean FUP per level of agreement.

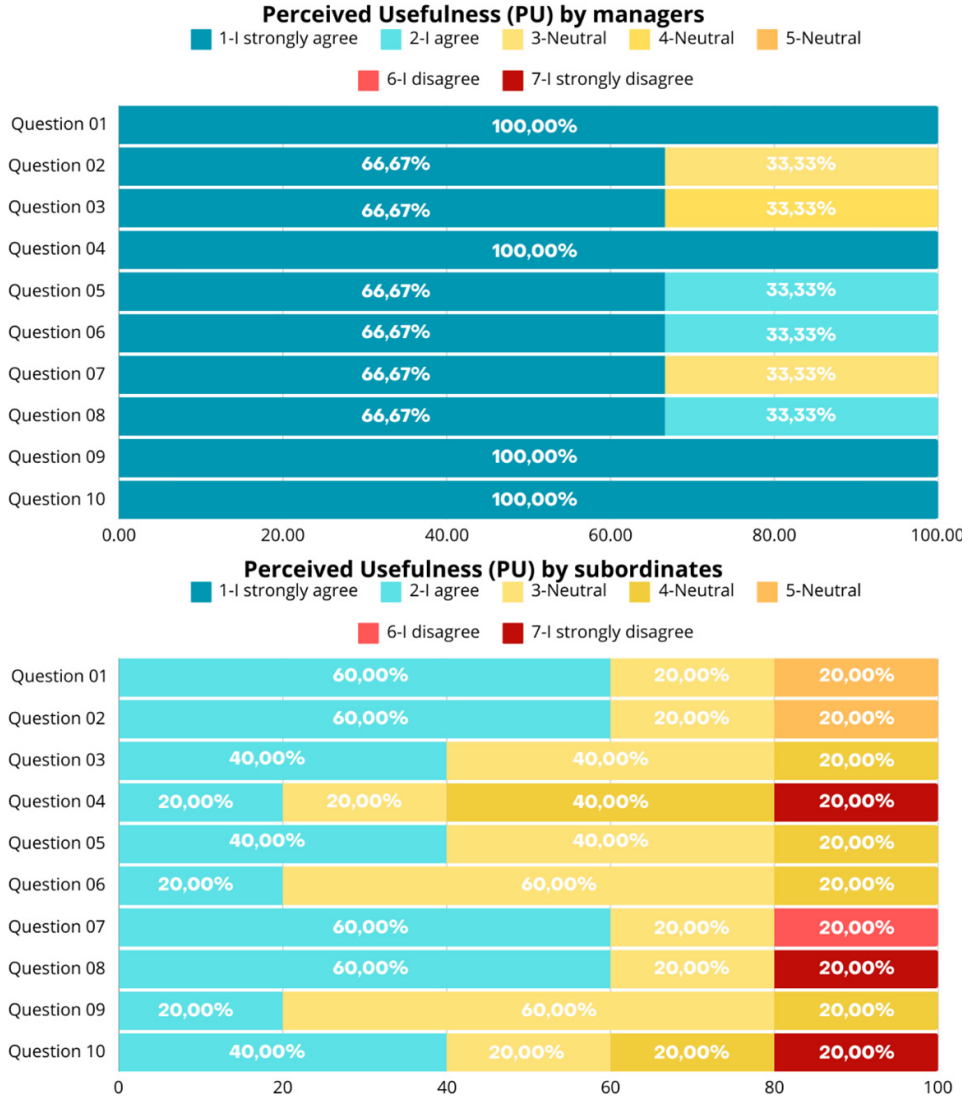
Figure 19. Overall average Perceived Ease of Use (FUP) (Survey data)



The overall mean FUP shows an overall agreement of (53.00%), a neutrality of (39.00%), and (8.00%) of disagreement. This indicates that users have a more diverse opinion on the ease of use of the system, with most users rating it as easy, others indifferent, and few finding it difficult. In view of the data, it is possible to affirm that the proposed GRC system obtained good levels of perception of PU and FUP (65.00%) and (53.00%) respectively, considering that public governance is a complex activity that involves the 'government' of complex social networks in the political sectors (Kickert, 1997).

To verify possible influences on the overall result, segregated analysis by hierarchical groups was performed. The graphic analysis indicates that there is a positive influence of strong agreement on the part of managers and divided between agreement and neutral on the perception of subordinates, on the perception of perceived usefulness in relation to the system. The result points out that perceptions differ between the two groups. This can be understood through Figure 20.

Figure 20. Comparison of Perceived Utility (PU) between managers and subordinates (Survey Data)

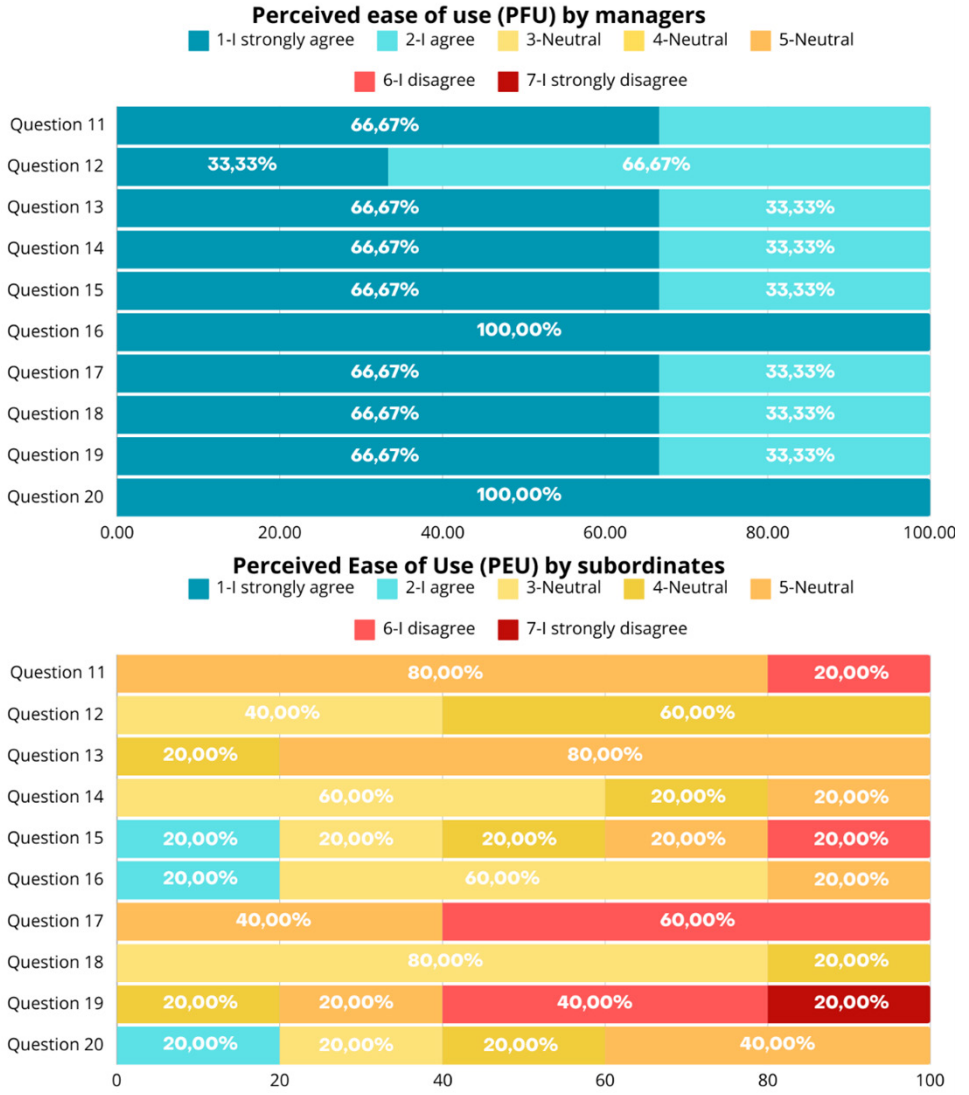


The results of the analysis of the perception of usefulness show, as shown in Figure 20, that managers express a higher acceptance of the proposed GRC system. The average percentages of agreement across all statements are higher among managers, indicating a more positive perception of how the system contributes to improving work quality, increasing productivity, and supporting critical aspects of job performance compared to subordinates. The highlights are that (100.00%) managers

strongly agree that using the system improves the quality of work, supports critical aspects, can facilitate work and indicates great usefulness. However, the subordinates (60.00%) understand that the system improves quality, gives greater control, improves productivity and increases efficiency. However, due to the high degree of neutrality and strong disagreement (80.00%) believe that the system does not improve critical aspects, does not improve performance and does not facilitate work.

In the second case, it again points to a relevant difference in the perception of ease of use perceived between managers and subordinates in relation to the GRC system. The managers present agreement and strong unanimous agreement. However, subordinates have a high level of neutrality and some perceptions of disagreement. This indicates differences in these perceptions between the groups. It can also be demonstrated by analyzing Figure 21.

Figure 21. Comparison of Perceived Ease of Use (FUP) between managers and subordinates (Survey data)



The results of the analysis of the perception of ease of use indicate, as shown in figure 21, that, as in the first factor, managers also express a higher acceptance of the proposed GRC system. It is interesting to note that subordinates have a tendency to disagree more with the ease of use of the GRC system than managers. This is especially evident in statements related to ease of learning, non-frustrating interaction, and clear interaction with the system, where subordinates have higher rates

of disagreement or neutrality. The most relevant facts are that (100.00%) managers strongly agree that it is easy to remember the tasks they perform in the system, they generally consider the system easy to use. Furthermore, they strongly agree and agree with all the other issues investigated. However, the subordinates (60.00%) understand that to use the system requires a lot of mental effort and that it takes a lot of effort to become skilled. It is noted that there is a very strong neutrality in most of the questions answered by subordinates.

There are several reasons to investigate why managers perceive more usefulness and ease in the GRC system than subordinates. Managers often take a broader view of the organization and understand how different parts fit together. Managers are often responsible for ensuring that the organization is compliant with various regulations, the GRC system can be a tool to help them fulfill these responsibilities, thereby increasing their perception of usefulness. In addition, managers face pressures to improve organizational performance, which makes tools such as the one in this study more useful for achieving these goals. As for perceived ease, managers generally have more experience and training, this can make them more comfortable with the technology and therefore realize that it is easier to use. Also, they are often involved in the process of selecting and implementing the systems, this can give them a better understanding of how the system works and how it can be used to benefit the organization.

These results corroborate aspects studied in the TAM model by demonstrating the positive relationship between the perception of usefulness and perceived ease of use with the general perception of the GRC system. This strengthens the theoretical understanding of how individual perceptions can influence the intentions of using technological systems in an organizational environment. The results also show the relevance of management in the promotion of organizational governance, with the vision of improving organizational performance being a crucial mechanism for the idea of action to achieve objectives, measurable in terms of adequacy, efficiency and effectiveness (Abbad, 1999). Callahan and Soileau (2017) noted that the level of maturity of enterprise risk management can positively influence the company's performance, influencing its comparative position with others in the same sector that have lower ERM levels.

These indications also reinforce the use of managerial competencies, studied by Ferreira Amorim (2016), who emphasizes that such competencies are determinant, since the attitudes and actions of managers are guiding elements of organizational competitiveness and sustainability. Cardoso (2009) emphasizes the importance of managerial competencies within the set of competencies of an organization, highlighting the fundamental role of managers in the implementation of organizational strategies. These ideas reinforce the report of the TCU's basic governance framework, which states that “management is inherent and integrated into organizational

processes, being responsible for planning, execution, control, action, in short, for the management of resources and powers made available to bodies and entities to achieve their objectives" (TCU, 2014, p. 32).

7. CONCLUSION

The study verified the level of acceptance of a system by measuring the perceived usefulness and perceived ease of use, in the general and hierarchical evaluation between managers and subordinates in relation to a Governance, Risk Management and Compliance system, using the TAM model as an evaluation parameter. The results highlighted differences in this perception, managers showed greater perceived utility and perceived ease of use in favor of the GRC system, compared to subordinates. This result suggests an influence of hierarchical position, search for organizational performance and management responsibility in promoting governance, influencing the perception of the system and its potential contributions to the organization.

Thus, one of the contributions of this study is the finding that the model conceived by Davis (1986) is still efficient for evaluation in relation to the usefulness and ease of use of new technologies. It broadens the understanding of the TAM model by applying the specific context of public service, using information technology through the use of a GRC system, highlighting the importance of the perception of usefulness and ease of use in the accessibility and adoption of governance systems in organizations, in addition to the relevance of management in promoting organizational governance.

Managers, potentially due to their broad view of the organization, responsibilities, can perceive greater usefulness and ease of use of the GRC system, which influences its ease and effective use. These results reinforce the relationship between individual perceptions and as an objective of using technological systems in organizational environments, they provided important information to improve the implementation and adoption of GRC systems improving organizational performance. However, the identification of differences in the perception of usefulness and ease of use between managers and subordinates indicates the importance of specific training programs. These programs aim not only at familiarization with the systems but can also explain how such systems can be more useful and simple to use for each group, improving their ease and overall adoption. Considering that the use of information systems is useful to boost managerial processes. This perspective, according to Bracci et al. (2021), facilitates the risk control process through the use of specialized software.

Among the limitations of this study, we can mention the sample size, which was restricted to a specific context of an institution, with eight participating civil servants, which may limit the generalization of the results. In addition, the survey focused

on the perception of usefulness and ease of use, without considering other possible factors influencing the adoption of the GRC system. This study demonstrates that the results are promising for future research in this area.

It is recommended to carry out longitudinal studies in different organizational contexts, using statistical tests to validate and expand the results obtained. In addition, explore other external variables, such as cultural influences and organizational aspects, considering the influence of implementation and training strategies on users' perception of the usefulness and ease of use of the systems inherent to the GRC area, which can enrich the understanding of the adoption of these technologies.

Finally, in terms of managerial implications in the implementation, the study may support the management strategy aimed at changing the presented framework, with the objective of obtaining general adherence to the GRC system, allowing the advancement of knowledge in the field of acceptance of Governance, Risk Management and Compliance practices.

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APPENDIX I

Questionnaire of Usefulness and Perceived Ease in the Use of Electronic Space Technologies GRC System

Please answer the questions by assigning each of the twenty questions scores ranging from 01 to 07 following the concepts as shown in the table below.

Table 1.-

Perceived usefulness of the risk management system	**I strongly agree**	**Agree**	**Neutral**			**Disagree**	**I strongly disagree**
	1	**2**	**3**	**4**	**5**	**6**	**7**
1. Using the GRC system improves the quality of the work I do.							
2. Using the GRC system gives me greater control over my work.							
3. The GRC risk management system allows me to get things done faster.							
4. The GRC system supports critical aspects of my work.							
5. Using GRC system increases my productivity.							
6. Using the GRC system improves my performance at work.							
7. Using GRC system allows me to accomplish more work than would otherwise be possible.							
8. The use of the GRC system increases my effectiveness at work.							
9. The use of the GRC system makes my job easier.							
10. Overall, I find the GRC system useful in my work.							
Perceived ease of risk management system							

continued on following page

Table 1. Continued

Perceived usefulness of the risk management system	I strongly agree	Agree	Neutral			Disagree	I strongly disagree
	1	2	3	4	5	6	7
11. I don't find the GRC system complicated to use.							
12. Learning how to operate the GRC system is easy for me.							
13. Interacting with the GRC system is not usually frustrating.							
14. I find it easy to get the GRC system to do what I want it to do.							
15. The GRC system is not rigid and inflexible to interact.							
16. It's easy for me to remember how to accomplish tasks using the GRC system.							
17. Interacting with the GRC system does not require much mental effort.							
18. My interaction with the GRC system is clear and understandable.							
19. I think it doesn't take much effort to become skilled in using electronics.							
20. Overall, I find the GRC system easy to use.							