



RISK MANAGEMENT: CASE STUDY ON IMPLEMENTATION AND EFFECTUATION

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Abstract

Objective: The Public Administration faces the influence of internal and external factors that bring uncertainty regarding the achievement of its objectives. These uncertainties can be called organizational risks, which can be analyzed by the Implementation and its processes. However, these phases have been approached as synonymous, making it difficult to measure the results desired by Risk Management. Thus, this article aims to highlight the difference in implementation and implementation in risk management, as well as to elucidate the challenges faced by the Federal Institute of Santa Catarina in the Risk Management process.

Methodology/Approach: This research is classified as a qualitative case study, with information analysis through interviews with the organization's employees and participant observation over three years.

Originality/Relevance: The study provides empirical evidence on the distinction between the implementation and implementation stages, as well as their challenges, to improve the studies and execution of Risk Management.

Main results: The implementation and its phases were identified, with challenges occurring in both, especially regarding the difficulty of public servants in understanding risk management and its context, the preparation of risk maps, the assignment of roles outside the committee, and the creation of indicators concise.

Theoretical-methodological contributions: Institutions need to go beyond standardization and regulation, completing all the steps established in the implementation of Risk Management, subsequently introducing implementation, and institutionalizing their practices in the management processes.

Keywords: Risk management. Deploy. Implement. Challenges.

GESTÃO DE RISCO: ESTUDO DE CASO SOBRE OS DESAFIOS NA IMPLANTAÇÃO E IMPLEMENTAÇÃO

Resumo

Objetivo: A Administração Pública enfrenta influências de fatores internos e externos que trazem incertezas quanto ao alcance de seus objetivos. Essas incertezas podem ser denominadas de riscos organizacionais, podendo estes serem analisados pelos processos de Implantação e de Implementação. Contudo, essas fases vêm sendo abordadas como sinônimas, dificultando a mensuração dos resultados almejados pela Gestão de Risco. Destarte, este artigo tem como objetivo evidenciar a diferença de implantação e de implementação na gestão de risco, assim como elucidar os desafios enfrentados no Instituto Federal Catarinense no processo de Gestão de Risco.

Metodologia/Abordagem: Esta pesquisa classifica-se como um estudo de caso de cunho qualitativo, com análise de informações por meio de entrevistas com servidores da organização e da observação participante em um período de três anos.

Originalidade/Relevância: O estudo fornece evidências empíricas sobre a distinção entre as etapas de implantação e de implementação, bem como seus desafios, com a finalidade de aprimorar os estudos e a execução da Gestão de Risco.

Principais resultados: Foram identificadas as fases de implantação e de implementação, ocorrendo desafios em ambas, sobretudo quanto à dificuldade dos servidores em compreender a gestão de risco e seu contexto, a elaboração de mapas de risco, a atribuição de papéis fora do comitê e a criação de indicadores concisos.

Contribuições teórico-metodológicas: As Instituições precisam ir além da normatização e da regulamentação, concluindo todas as etapas estabelecidas na implantação da Gestão de Risco, introduzindo na sequência a implementação, e institucionalizando suas práticas nos processos de gestão.

Palavras-chave: Gestão de risco. Implantar. Implementar. Desafios.

GESTIÓN DE RIESGOS: ESTUDIO DE CASO SOBRE LOS DESAFÍOS EN LA IMPLEMENTACIÓN Y EJECUCIÓN

Resumen

Objetivo: La Administración Pública enfrenta influencias de factores internos y externos que generan incertidumbre acerca el logro de sus objetivos. Estas incertidumbres pueden denominarse riesgos organizacionales, que pueden ser analizados por sus procesos de Implementación e Ejecución. Sin embargo, estas dos fases están siendo abordados como sinónimos, hecho que dificulta la medición de los resultados buscados por la Gestión de Riesgos. Así, este artículo tiene como objetivo resaltar la diferencia en la implementación e ejecución en la gestión de riesgos, igualmente busca dilucidar los desafíos que enfrenta el Instituto Federal Catarinense en el proceso de Gestión de Riesgos.

Metodología/Enfoque: Esta investigación se puede clasificar como un estudio de caso cualitativo, con análisis de información, a través de entrevistas a empleados de la organización y observación participante en un período de 3 años.

Originalidad/Relevancia: El estudio aporta evidencia empírica sobre la distinción entre las etapas de implementación y ejecución, así como sus desafíos, con el fin de mejorar los estudios y la practica de la Gestión de Riesgos.

Resultados principales: Se identificaron las fases de implementación e ejecución, con desafíos ocurriendo en ambas, especialmente en cuanto a la dificultad de los servidores para comprender la gestión de riesgos y su contexto, elaboración de mapas de riesgos, asignación de roles fuera del comité y la creación de indicadores concisos.

Aportes teóricos y metodológicos: Las Instituciones necesitan ir más allá de la estandarización y la regulación, concluyendo todas las etapas establecidas en la implementación de la Gestión de Riesgos, concretizando su implementación e institucionalizando sus prácticas en los procesos de gestión

Palabras clave: Gestión de riesgos. Implementación. Ejecución. Desafíos.

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1 Introduction

In the Constitution of the Federative Republic of Brazil, article 3 states that the fundamental objectives of the Federative Republic of Brazil are to build a free, fair, and solidary society; ensure national development; eradicate poverty and marginalization, reduce social and regional inequalities; and promote the good of all, without prejudice of origin, race, sex, color, age and any other forms of discrimination (Brazil, 1988).

Based on the premise that Public Administration is financed through public resources, from contributions from society in general, it is assumed that those who finance it aspire to a Public Administration equipped with modern management practices, capable of generating a better return on the taxes collected. Thus, the Public Administration seeks to generate value for this society, using resources efficiently, economically, and effectively, as well as ensuring the prevalence of the interest of general welfare over private interests (Brasil & Souza, 2017).

Similarly, the *caput* of article 37 of the Constitution of the Federative Republic of Brazil establishes that the Public Administration "shall obey the principles of legality, impersonality, morality, publicity, and efficiency" (Brazil, 1988), determining that good administration, in addition, to comply with laws and regulations, must achieve goals with quality and at the lowest possible cost.

Therefore, in 2016, the Ministry of Planning, Development, and Management (MP) and the Comptroller General of the Union (CGU) instituted the Joint Normative Instruction (INC) no. 01/2016, providing for internal controls, risk management, and governance within the scope of the Federal Executive Branch, determining a maximum period of 12 months for the bodies and entities of the Federal Executive Branch to prepare the Risk Management Policy, and, in the next, the Governance, Risks and Controls Committee (Official Federal Gazette [DOU], 2016a).

The Federal Institute of Santa Catarina (IFC), as a public organization subject to the rules of the Federal Executive Branch, had to adapt its management practices to implement a program of governance, risks, and control in its actions, adapting to the determination.

In this situation, this case study deals with the challenges that need to be overcome to structure the implementation phase and incorporate the implementation of risk management, in the understanding of IFC servers - Rectory and Campus Camboriú.

To achieve this purpose, this investigation is divided into two main objectives: i) to highlight the difference in implementation and implementation in risk management, and ii) to elucidate the challenges faced at IFC in the Risk Management process.

The contributions of this work lie in the survey and analysis of these challenges, from the perspective of the non-equivalence between the terms implement and implemented. The elucidation of adversities and responses to problems can help other public and private organizations to more effectively embody risk management practices.

2 Theoretical reference

This section is intended to present the Risk Management and the structure adopted in the Federal Public Administration, addressing, in sequence, the implementation and implementation considerations.

2.1 Risk and risk management methods

There are records that practices related to risk mitigation already existed in ancient Babylon, such as compensation in case of losses due to theft and flooding (Hubbard, 2009 as cited in the Federal Court of Accounts [TCU, 2018, p. 12]). However, it was after 1975 that the theme of risk was expanded from a corporate perspective, attributing responsibilities for risk policies to senior management (Fraser & Simkins, 2010 as cited in TCU, 2018, p. 12).

With the consolidation of corporate risk management practices at the beginning of the 21st century, the publications that have become international references on the subject are:

- a) **The Orange Book** – Management of Risk – Principles and Concepts: a benchmark of the UK government's risk management program, started in 2001. Its advantage is that it can introduce risk management simply and comprehensively (TCU, 2018).
- b) **The Sarbanes-Oxley Act** – Law passed in the United States after the collapse of a company due to concealment, manipulation of accounting data, and failures in audits, seeking to mitigate risks, prevent the occurrence of fraud, and protect investors (TCU, 2018).
- c) **COSO-ERM** – reference model that extended COSO I, focusing on corporate risk management. COSO stands for Committee of Sponsoring Organizations of the National Commission on Fraudulent Financial Reporting. Developed the work ERM – "Enterprise Risk Management" in 2004, translated into Portuguese in 2007 – "Corporate Risk Management", to provide a more extensive approach to the structure of corporate risk management (Steinberg, Everson, Martens, & Nottingham, 2007).
- d) **Basel Agreement – II** – applicable to banking institutions worldwide, containing specific requirements related to operational risk management (TCU, 2018).
- e) **International Organization for Standardization – ISO 31000 Risk Management** – Technical standard published in 2009 that provides principles and good practices for the corporate risk management process, applicable to organizations of any sector, activity, and size (Brazilian Association of Technical Standards [ABNT] NBR ISO 3100, 2009).

More recent works on the scientific development of past centuries question the traditional risk perspective and the false reproduction of the impression of total security, considering that, in practice, "zero risks" does not exist, and therefore it is necessary to manage risks, identifying their areas,

quantifying the degree of risk and, most importantly, indicating proposed interventions (Rocha, Souza & Barros, 2009).

Based on the perception of the inexistence of zero risks, The Institute of Internal Auditors (2009, p. 2), in the IIA Position Statement: *The Role of Internal Audit in Corporate Risk Management*, defines risk management as: “a structured, consistent and continuous process that runs throughout the organization to identify, assess, decide on the responses and report on opportunities and threats that affect the achievement of its objectives”. Therefore, it appears that this definition proposes that risk management has the action of deciding, among several responses, which attitudes are possible to take, with no null risk, but coexisting options with different degrees of risk.

The Public Administration also faces the influence of internal and external factors that bring uncertainty regarding the achievement of its objectives. It can be said that the effect these uncertainties have on a future event is called “risk” (Steinberg *et al.*, 2007). The managerial approach to risk management with a focus on organizational efficiency, according to the technical literature on risk management, allows the organization to increase the chance of achieving objectives through internal controls (ABNT, 2009).

Thus, Decree No. 9.203, of November 22, 2017, which provides for the government policy of the direct, autarchic and foundational federal Public Administration, in Article 2 IV, defines risk management as "a process of a permanent nature, established, directed and monitored by senior management, which includes the activities of identifying, evaluating and managing potential events that may affect the organization, to provide reasonable assurance regarding the achievement of its objectives" (Decree No. 9.203, 2017).

This definition is chosen for this research, as it deals with the most recent perspective on risk management, in addition to being linked to the precepts of Public Administration. Before starting the conception of the implementation and implementation of Risk Management, it is opportune to go deeper into the theory of the risk management model chosen in the Joint Normative Instruction (INC) CGU/MP No. 01/2016, which provided guidelines for the development of internal control actions, risk management and governance in the federal Public Administration.

2.2 Risk management in public administration - COSO ERM Model

As seen in the previous section, Risk Management is gaining importance in the management of public sector organizations, as government responsibilities about the public good require the adoption of effective management practices and strategies (Silva, 2014). In Brazil, based on the components listed in article 16 of INC CGU/MP No. 01/2016, the risk management model appointed for use by the Federal Agencies was COSO ERM.

After some centralized inspections, the TCU (2018) found that there was no standardized methodology, making it difficult to standardize and integrate the steps, and, given this obstacle, this

Court has been recommending the use of models such as COSO ERM - in the improvement of controls (Rules 7,128/2013 – 1,062/2014 – 4,599/2016). However, its use within the public sector is still incipient, with no specialized literature or many studies and technical works on the subject (Brasil & Souza, 2017).

Figure 1 – Risk management model provided for in COSO ERM



Source: COSO (Steinberg *et al.*, 2007).

In this methodology, each line of the eight components is related and applies to all four categories of objectives – strategic, operational, communication, and compliance. The organization and its units, seen in the third dimension of the cube, highlight the relevance of enterprise risk management across the entire structure, as enterprise risk management is a process, its effectiveness lies in this holistic view. For the development of Risk Management, several activities must occur throughout the organization, at all levels and functions, incorporating good Governance practices through preventive actions, such as approvals, authorizations, verifications, reconciliations, performance reviews, and segregation of duties (Steinberg *et al.*, 2007).

In the public sector specifically, the fiscal crisis of the 1980s opened the discussion on governance in the public sphere to make the State more efficient, thus instituting the basic principles that guide good governance practices in public organizations: transparency, integrity, and accountability (Silva, 2014), as well as several other works, such as those by Kissler & Heidemann (2006), see also those by Matias-Pereira (2010) and Rua (1997), who share the idea of that good governance in the public sector allows, among others: to guarantee the delivery of economic, social and environmental benefits to citizens and the existence of an effective risk management system.

According to INC CGU/MP No. 1/2016, the bodies and entities of the Federal Executive Branch must implement, maintain, monitor, and review internal management controls, based on the identification, assessment, and management of risks to mitigate the probability of occurrences of risks or their impact on organizational goals. Thus, this structure will be explained in the next topic.

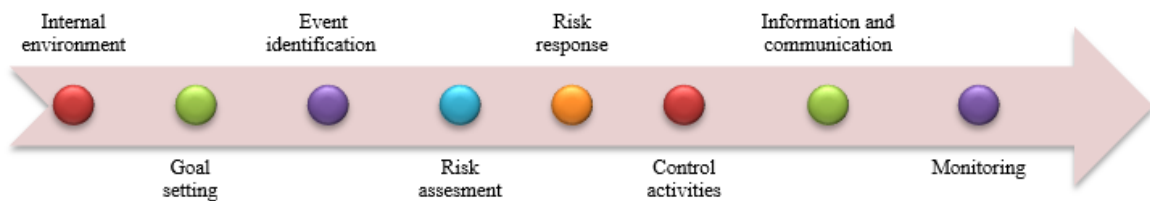
2.3 Risk management and its structure

The Ministry of Planning, Development and Management (MP) approved the Risk Management Policy, Integrity, and Internal Controls of Management through Ordinance No. 426/2016, opting to use the methodology of COSO ERM and good practices (Official Gazette [DOU], 2016b).

It is extremely important that employees are clear that risk management helps the unit achieve its goals, contributes to effective communication, compliance with laws and regulations, and can also avoid damage to reputation and image, mitigating possible risks of corruption and ethical deviations (National School of Public Administration [ENAP], 2017).

In this vein, the INC CGU/MP No. 01/2016 composed the Risk Management in eight stages, as shown in Figure 2 and which will be explained in this investigation.

Figure 2 – Structure of the risk management model



Source: Adapted from INC CGU/MP N° 1/2016 (DOU, 2016a).

2.3.1 Internal environment

In the understanding of Brasil & Souza (2017), the internal environment encompasses the organizational culture, the influence on risk awareness, and the administrative philosophy of an organization concerning risks. It is linked to ethical values and the integrity of the organization's people, which are equally important to generate a healthy control environment, promoting discipline and readiness for management. It is the basis for the other components of corporate risk management due to its influence.

2.3.2 Goal setting

Objectives must be aligned with the organization's mission and must be compatible with its risk appetite, as well as being fixed before identifying potential events that could affect its reach. This also requires that all levels (departments, divisions, processes, and activities) are aligned with the organization's objectives, enabling the understanding of what should be done and what means will be used for evaluation (DOU, 2016a).

2.3.3 Event identification

This step focuses on identifying events that may affect the achievement of the organization's objectives, arising from internal or external sources and that have positive, negative, or both impacts. When identifying the events, the existence of certain uncertainties must be recognized, without knowing if, when, or the impact it will have if the event happens (DOU, 2016a).

In the view of Brasil & Souza (2017, p. 85), for each objective listed, the responsible manager uses a questionnaire with questions such as: “I. What can go wrong?; II. How and where can we fail?; III. Where are we vulnerable?; IV. How can we be robbed?; V. Which activities are more complex?”.

Its main purpose is to identify and record both the risk events that compromise the achievement of the process objective and the causes and effects, or consequences, of each one of them. Through risk management mapping, it is possible to identify risks, their probability and impact, the damage caused, preventive and contingent actions, as well as those responsible for these actions (ABNT, 2009).

Another relevant point is the issue of accountability of everyone involved in the process, as one of the objectives of risk management is to describe the roles and responsibilities of everyone involved to ensure the effective functioning of the organization, to guide identification activities, the analysis, assessment, treatment, prioritization, monitoring and communication of risks inherent to the activities developed (Carvalho Filho, 2008).

2.3.4 Risk assessment

At this stage, the inherent or residual effects of the risks are considered, as well as their probability and impact. With the participation of a team with different perspectives and who know the questioned activities, the manager identifies which responses pose a possible threat, generating a comprehensive list of risks (DOU, 2016a).

After identifying the risks, qualitative and quantitative analyzes must be carried out, aiming at a definition of the attributes of impacts and vulnerabilities used in the prioritization of the risks to be treated, comparing and ranking them according to their respective levels of probability and impact to identify those that need more attention and prioritize those considered the most serious (Brasil & Souza, 2017).

2.3.5 Risk response

After assessing the risks, the organization must implement actions through policies and procedures that contribute to ensuring that the organization's responses to risks are executed, communicating to all interested parties the steps in the process that integrated risk management must achieve. And, in the monitoring process, the performance of the indicators must be monitored, supervising the implementation and maintenance of action plans and verification of the achievement of established goals (ENAP, 2017).

The responses to risks can be: avoid, accept, reduce or share, and Management is responsible for selecting the set of actions designed to align the risks with the organization's tolerance and risk appetite (Steinberg *et al.*, 2007).

2.3.6 Control activities

Among the objectives of internal controls is to provide operational effectiveness, through orderly, ethical, and economic execution of operations, ensuring compliance with the laws and regulations of the government and the organization itself (DOU, 2016a).

To ensure the Institutional Mission, the first step in risk management is the link to strategic objectives, and, for these to be achieved, Internal Controls are prepared, which will be operated by all public agents responsible for finalists and support macro processes (Federal Court of Accounts [TCU], 2017).

Strengthening this view, Silva (2014) points to the segregation of functions as one of the basic principles of internal control, because when functions are segregated, conflicts of interest, errors, fraud, and corrupt behavior are mitigated.

Consequently, through the segregation of functions, ethical-behavioral dysfunctions are significantly restricted, strengthening administrative rationalization, work productivity, and control over public management act, ensuring the accountability of everyone involved in the process (Amorim, 2000).

2.3.7 Information and communication

To identify, assess and respond to risk, the organization needs information at all hierarchical levels, and effective communication in all directions, in a clear and timely manner, is essential.

By receiving clear information from senior management, each member understands their role in managing corporate risks and how individual activities relate to the work of others. Thus, there is also effective communication with the external public (Steinberg *et al.*, 2007).

2.3.8 Monitoring

Monitoring serves so that the necessary changes are made and so that the organization can actively react according to circumstances. It can be done through ongoing management activities, independent assessments, or both. Generally, corporate risk management mechanisms have a structure to monitor themselves continuously, as the greater the scope and effectiveness of this monitoring, the less need for independent assessments. For this purpose, the TCU (2018, p. 68) advises that organizations must “measure the performance of risk management using indicators, which must be critically analyzed periodically to ensure their adequacy”. It also highlights the need to measure the progress made by analyzing the effectiveness of the risk management framework.

2.4 Implementation and Implementation

In Etymology, the origin of the word implant comes from “*Im + plant*”, having as synonyms root, fix, take root. The word implement, on the other hand, comes from “*Implement + air*”, meaning to execute, carry out, solve (Ribeiro, 2019). Thus, Risk Management must go through these two phases, complementing each other and not being equal.

As it is a recent topic in Public Administration, with little specialized literature and rare technical works on the transformation of abstract concepts into practical application procedures, this confusion ends up preventing the results sought by Management from being achieved. In this regard, Steinberg *et al.* (2007, p. 10) recommend to Educators that:

This structure can become a reason for research and academic analysis to identify points that can be improved in the future. Assuming that this report is accepted as a common basis for understanding, its concepts and terms should somehow be incorporated into university curricula.

In the same way, one of the objectives of the COSO ERM risk management model is to describe the roles and responsibilities of those involved in the process to ensure the effective functioning of the organization, to guide the risk management processes inherent to the activities developed, implementing standards to assist in program implementation (Steinberg *et al.*, 2007).

2.4.1 Implementation of risk management

The main actions to be taken by public managers to prepare the internal environment for the organization's Risk Management are based on the philosophy of senior management, which includes: Policy Approval, System Supervision, Promoting the engagement of middle management, Implementation of risk governance structure, Allocation of resources for implementation and Support speech, thus being "the basis for the creation of an organizational culture in which employees and third parties work effectively to strengthen risk management" (Brasil & Souza, 2017, p. 44).

In ISO 31000:2018, an updated version that replaced the 2009 version (ABNT, 2018), implementation is related to phase 1 and 2 (see Figure 3), with Implementation being the next step.

Figure 3 – Relationship between the components of the framework to manage risk



Source: Adapted from ABNT (2018).

The success of risk management depends on the structure of that management. In the structure suggested by ISO 31000:2018, the separation of integration and design from implementation is visible. Thus, steps 1 and 2 in Figure 3, as they significantly influence this framework, must be evaluated, understood, and widely shared before starting implementation. In this context, applying this logic in the COSO ERM model, the stages of Environment and Objectives must be defined by senior management and disclosed to all components before starting the implementation phase (ENAP, 2018).

2.4.2 Implementation of risk management

The set of beliefs and attitudes of an organization represent its risk management philosophy, characterizing how the company considers its risks of developing and implementing strategies in its day-to-day activities, and the implementation of these strategies and goals are strongly influenced by preferences, value judgments, and managerial styles. (Christo & Borges, 2017; Santos, 2015).

In the COSO ERM methodology, successful implementation within the parameters of risk appetite lies in the alignment between the organization, personnel, processes, and infrastructure, with corporate risk management being an activity to be carried out by the board of directors, the executive board, and others collaborators, through what they say and what they do. They are the people who implement the risk management mechanisms following the mission, strategy, and defined objectives. For Steinberg *et al.* (2007, p. 32):

Competency reflects the knowledge and skills needed to perform assigned tasks. Management decides how well these tasks need to be performed, weighing the organization's strategy and objectives, as well as plans for their implementation and realization.

Thus, the organization will be able to influence the ability to implement strategies and carry out its mission by incorporating business risk management into its structure. Following the methodology of ISO 31000:2018 (ABNT, 2018), to successfully implement the risk management framework, it is up to the organization to engage and raise awareness among stakeholders.

In this process, there is the identification of risks, a step that requires the participation of employees with knowledge and a holistic view of the functionality of the sector in which they work, and they must receive training in the application of the risk and control management methodology internal measures adopted by the organization (ENAP, 2018).

For an overview of the steps in the COSO ERM methodology, from the perspective of the ISO 31000:2018 methodology, which presents the highlighted implementation phase, the following structure is obtained:

Figure 4 – Deployment and implementation steps – COSO ERM



Source: Prepared by the authors.

It is noted that the Implementation is incorporated into all stages of Risk Management, as everything that will be performed must be defined in the Institution's Risk Management Policy so that all employees can use it in the implementation, following your area of expertise. The implementation, therefore, will take place from step 3 onwards, following the next steps of the planned structure in the implementation.

3 Method

The set of strategies adopted to achieve the purpose in this study was descriptive-analytical research, which aims to "describe the characteristics of certain contexts in the studied environment" (Gil, 2002, p. 42). A qualitative approach was used, with an inductive focus on data analysis, giving greater importance to the meanings attributed by people to the topic in question.

As for the means, the research is classified as a Case Study, which, according to Yin (2001, p. 32), "is an empirical investigation that investigates a contemporary phenomenon in-depth and in its real-life context, especially when the limits between the phenomenon and the context are not clearly defined". For this case study, information was collected through questionnaires, semi-structured interviews and open questions, participant observation, in addition to the use of documents provided by IFC.

The participants in this study were initially the employees of the Dean of IFC, with a closed questionnaire being applied to the 13 employees of the Dean of Administration of IFC, and a semi-structured interview with the Dean of Administration and the Director of Institutional Development of IFC in the year 2018. Later, in the years 2019 and 2020, observation with inductive analysis was used, with the seven members of the Campus Camboriú Local Committee in 2018, and the 11 members of the Campus Camboriú Local Committee as participants in 2019 and 2020, ending with a questionnaire containing open questions with the current Director of Institutional Development of IFC.

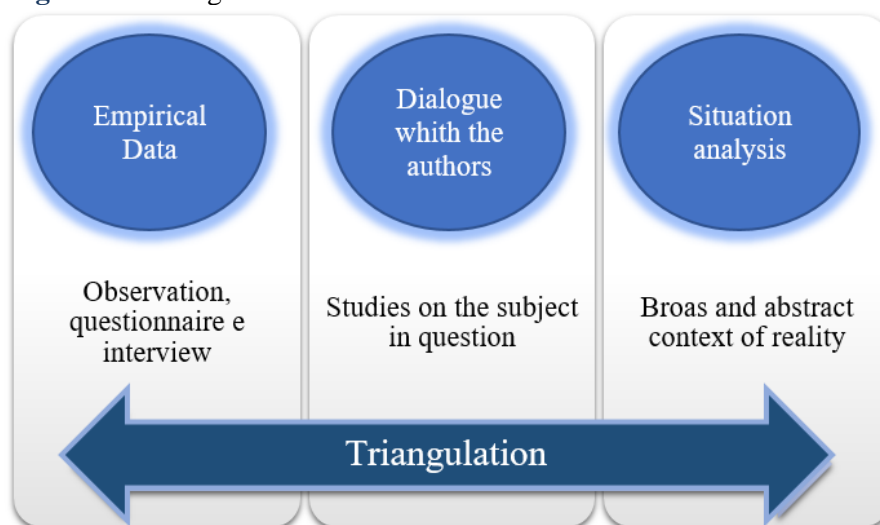
In the questionnaire and the semi-structured interview, the involvement of public servants with Risk Management was evaluated by: I. understanding; II. participation in activities; III. participation in courses; IV. perception of the need for and knowledge of IFC's Risk Management Policy.

As for observation and the open questionnaire, aspects raised in the theoretical risk management section were analyzed, such as I. Internal analysis and risk culture; II. Definition of objectives and mapping of processes; III. Definition of risk management roles; IV. Creation of risk maps; V. Definition of parameters and indicators.

In the view of Stake (2011), researchers who opt for a qualitative approach can use several triangulation practices to have more confidence in the evidence of results, considering that the repetition of observation is the simplest form. However, when citing Flick (2002), Stake (2011) also states that triangulation can be a form of differentiation, strengthening trust when analyzing differences to see multiple and important meanings.

In the present study, triangulation is evidenced in the articulation between three aspects:

Figure 5 – Triangulation of collected information



Source: Prepared by the authors

Thus, the analysis by triangulation is present in the articulation of the three aspects presented above by promoting dialogue between them. It is important to highlight that empirical data were collected at the three hierarchical levels of work: i) operational, with the questionnaire applied to employees of the Rectory; ii) tactical, with the observation of members of the Camboriú Campus Local Committee in two distinct cycles; and iii) strategic, in interviews with the Pro-Rector and the Institutional Development Directors in two consecutive cycles.

To form a contextualization of the reality in which the research was inserted, more broadly, data were collected in different environments - Rectory, headquartered in the city of Blumenau/SC, and Campus, in the city of Camboriú/SC - and consecutive periods, to analyze the development of risk management in its continuity.

The relevance of this research is highlighted by the fact that no literature addresses the distinction between the implementation and implementation stages, as well as their challenges, and, mainly, due to the need to improve studies on risk management in Institutions of Federal Teaching. Finally, IFC was chosen for the case study because of the broad access to participants and the facilitation of data collection.

4 Case study

The roots of the IFC College date back to April 8, 1953, after an agreement signed between the Federal Government and the State of Santa Catarina. In 1962, pedagogical activities began and, in 1968, the Federal University of Santa Catarina (UFSC) assumed the administrative and financial responsibility of the College (Instituto Federal Catarinense [IFC], 2020a).

At the end of 2008, with the enactment of Law No. 11892, of December 29, 2008, the Agricultural College of Camboriú (CAC) became the campus of the Federal Institute of Santa Catarina,

with Rectory in Blumenau, in response to the public call of the Ministry of Education for agricultural schools to become Federal Institutes, enabling, thus offering, in addition to secondary-level courses, also higher and postgraduate courses. (IFC, 2020a).

4.1 Federal institute of Santa Catarina and risk management

In its Institutional Development Plan (PDI), the Federal Institute of Santa Catarina (2014-2018) did not mention the Risk Management activities, which was included in a specific chapter in the 2019-2023 PDI as it is understood as an important management tool (Instituto Federal Catarinense [IFC], 2020b).

At IFC, the Risk Management Policy was established by Normative Ordinance No. 4/2017 (amended by Normative Ordinance No. 9/2018), covering all organizational levels and units, giving a maximum period of two years for its implementation. The Risk Management Policy Implementation Committee was established by Ordinance No. 1.395/2017 (amended by Ordinance No. 321/2018), which was linked to IFC's Strategic Planning, based on the COSO ERM model (IFC, 2020b).

Ordinance No. 1.395/2017 also determined the creation of a Local Committee to implement risk management procedures in the *Campi*, according to the Institution's Risk Management Policy, which defines the minimum requirements of a methodology for identification, monitoring, and control of institutional risks, favoring an anticipated vision of the administration that allows for the treatment and prevention of the administrative procedures implemented (IFC, 2020b).

5 Results

After contextualizing the environment in which the research was carried out, the results listed in five challenges are presented, breaking down into problematization, the answer indicated by the theory regarding the subject, and the answer adopted by the IFC.

5.1 Challenge 1: creating a risk management culture

After the formation of the IFC Committee, the first action instituted was to provide training for Managers to guide and propagate Risk Management, jointly providing educational material. Because the subject is not common in Public Administration, and even unheard of for many, difficulties emerged in the interaction between the theme and its operationalization, partly because the language and didactics are very focused on the teachings of high administration, partly because it is not a subject common to all areas of the Institution.

The objective of this training was to clarify the employees the terminology of risk management and explain how the tool helps to achieve institutional objectives, contributing to effective communication and compliance with laws and regulations.

In the understanding of Rinaldi & Barreiros (2007), the incorporation of risk communication principles contributes to the different interested actors being aware of the benefits of this practice, facilitating a consensus to reconcile divergent interests. It is noteworthy that the COSO ERM methodology highlights communication as one of its four basic principles, but that this concept refers to the collection and distribution of organizational information to its actors. Thus, before promoting risk reports, it is necessary to implement a risk management culture, which is created in the internal environment analysis stage. As the framework of this article highlights: "The heart of every organization is based on its body of employees, that is, on individual attributes, including integrity, ethical values and competence - and also on the environment in which they operate" (Steinberg *et al.*, 2007, p. 22).

However, some problems were found in the process of implementing the risk culture, such as the difficulty in understanding its terminology. Each stage of the implementation of Risk Management may involve a different group of the institution, and it is opportune for each group to understand its role in the process and as a whole (Steinberg *et al.*, 2007).

For this to happen, the didactic material offered must present content aimed at the purpose of that group of actors, and not cover the entire content of the philosophy of senior management, as was the experience of IFC employees. This cluster of knowledge and definitions, which for some may be just a preview of what they have already learned, for most of the institution, represents an unknown context. And this obscure scenario ends up generating a revulsion on the subject that comes from the confusion between what is intended to teach and what needs to be done.

Thus, this impasse experienced, both at the Rectory and Campus Camboriú and reported by the current Coordinator of the Local Committee, is due to the complete lack of knowledge of the majority of servers on the subject. Reproducing documents without understanding how this information should be transformed into actions can compromise the purpose of all institutional planning.

As this is a new issue in Public Institutions, integrating risk management into the organizational culture and making people understand this importance, in the view of the Local Committee Coordinator, requires organizational work on identifying the best way to disseminate this knowledge at all levels of the organization, thus motivating the understanding of its benefits to enable the transposition of the negative barrier of non-acceptance caused by misunderstanding. As Steinberg *et al.* (2007) clarify, establishing ethical values is, as a rule, difficult, given the need to consider the interests of various parties.

Thus, in addition to developing the Risk Management Policy and documents for establishing procedures for risk management, actions must be constant, integrating the real situation of each sector to avoid resistance to change. Studies on resistance to change already have ample space within management research (Christo & Borges, 2017; Santos, 2015), but they are still rare within the scope of risk management. In the case of the IFC, it was found, therefore, that resistance occurs due to a lack

of knowledge and difficulty in understanding the materials. To mediate this situation, in addition to training in risk management, in 2020, a booklet was developed initially aimed at members of the Campus Camboriú Local Committee in an attempt to collaborate with this group to obtain a greater understanding of the subject.

5.2 Challenge 2: process mapping and definition of organizational objectives

Following the Rectory's instructions, in 2019, the Local Committee prepared a Risk Management Report contemplating the Process Mapping following the Institution's Strategic Planning, containing the identification and assessment of risks following the COSO ERM methodology (IFC, 2020b).

This report separated the processes into five macro processes, according to the traditional view of Higher Education Institutions that work with teaching, research, and extension, in addition to auditing and management aspects (Marques, 2011). It is noteworthy that risk management must ensure a process that is related to organizational objectives, and auditing helps make its actions more accountable to its stakeholders. Within this scope, the risk management challenge found was to organize the activities carried out by the institution, as provided for in the organizational objectives.

However, as indicated in Normative Ordinances No. 19/2019 (IFC, 2020c) and No. 4/2020 (IFC, 2021), the IFC structure is predominantly functional, with a hierarchy defined in its standardized organization charts for each Campus and Rectory model. Thus, for the effective implementation of the Risk Management Plan, it is necessary to consider this functional logic.

Adopting only macro processes as a starting point for identifying risks, since IFC does not have a standardization by processes, makes the effective implementation of Risk Management even more difficult.

5.3 Challenge 3: roles of other actors in the risk management process

One of the points verified in the interviews was the role of other actors in the risk management process. IFC's Corporate Risk Management Policy sets out in detail the Roles and Responsibilities of the Dean and the Governance, Risk, and Control Committee, but as for the Local Committees, the areas that own risks, those responsible for handling and the other employees need further elucidation, especially about their activities and responsibilities in this process.

The lack of identification of the characters following the risk management activities favors the expansion of the difficulty of understanding by the servers, in addition to making it difficult to search for information about the risk management process. When people identify a risk, they usually look for information about what and how to proceed. Thus, it is necessary to make clear, in each sector, which are the reliable sources for this search (Rangel, 2007).

The assignment of sector leaders in the risk management process is of paramount importance to decentralize power, in addition, it creates a culture of trust in the transfer of information, however, these aspects were not defined at the time of implementation.

5.4 Challenge 4: creating the risk management map

Due to the recommendation of the control bodies, together with the guidance of the IFC Attorney, many activities began to have a “need” to present the Risk Management Map for their continuity.

To request the Purchasing and Procurement Sector, for example, servers need to prepare a Risk Management Map, even without mastering the subject. The impact of this was the elaboration of maps that did not present the possible risks of those procedures.

To solve this problem, as pointed out by an interviewed employee, training courses on risk mapping were once again offered. Classes were based on INC CGU/MP No. 1/2016 and in the formation of the Risk Management Policy. It is noteworthy, however, that the detailing of the entire Risk Management structure for the servers working in the operational ended up not adding knowledge, increasing confusion about the actions required for risk mapping. However, according to information obtained in an interview with the Director of Institutional Development at IFC, in 2020, the joint work between the sectors has helped to overcome this challenge.

5.5 Challenge 5: definition of parameters and indicators

Another problem reported was the incompatibility of objectives with the actions developed in the sectors. For the risk management process to achieve an effective result, it is essential to go beyond legal compliance and promote clarity and relevance in the execution of these activities in the workplace (Steinberg *et al.*, 2007).

Creating controls and actions in Reports that are disconnected from daily management can generate distorted information, passing on to top management data that do not reflect the real situation of the sectors, which negatively influences decision making. The confidence level of the information presented must be linked to the type of control that should be adopted. Non-existent, poorly designed, or poorly implemented controls present high risks, while controls implemented and supported by adequate tools, even if subject to improvement, satisfactorily mitigate the risk (TCU, 2018).

Therefore, the process of constructing the control indicators must be constantly rethought and rewritten, considering each organizational sector and its mission (Steinberg *et al.*, 2007). It is up to the educational institution, in this way, to move towards management based on the (re)implementation of its actions.

A study carried out by Sousa (2018) in 63 Brazilian Federal Universities, which considered the creation of the Risk Committee, the Risk Management Policy, and the work methodology as a way to measure the Degree of Implementation of Risk Management, found that only 50% of the

Universities constituted the Committee, 27% approved the Risk Management Policy and 9% published the work methodology (Sousa, 2018). Analyzing the IFC in these parameters, the result would be that of a completed implementation, not corroborating reality.

Another significant point in the study by Sousa (2018) are the aspects pointed out by the Managers of these Universities, such as difficulties for implementation, with the highest percentage related to the lack of trained personnel (37%), followed by the difficulty in accepting the Management Policy of Risk in organizational culture (20%). Similar to this, it is observed that these problems raised were the same as those found in the present study.

Completing the challenges, the institution must overcome the implementation phase so that attention is applied in the implementation of Risk Management, thus enabling the achievement of the desired result.

At IFC, the implementation phase is presented as completed, however, according to the notes of this study, it still requires the planning, expansion, and detailing of several steps, as well as the Federal Universities mentioned above, so that, thus, they can structure the implementation in a way that favors the unfolding of the implementation.

Based on the survey of information collected in the interviews and on the observation of IFC staff, a table was drawn up with the main challenges for implementation, the respective answers presented by the Theory used in this article, and those adopted in practice by IFC.

Table 1 – Risk management challenges and responses at IFC

Challenges	Problem	Answer in theory	IFC response
1: Creation of a risk management culture.	It is difficult for employees to understand risk management because the teaching material offered is focused on preparing Senior Management. Ignorance of the risk culture	Creating a risk management culture.	Development of Booklet and Training aimed at servers that perform operational actions. Support from the Dean of Institutional Development.
2: Mapping of processes and definition of objectives	Lack of knowledge of the organizational structure, clarity in the methodology and work tools for Risk Management	Describe organizational objectives and map processes or flows to identify risks later.	The organization analyzes the possibility of structuring the mapping by flowcharts of activities by sectors, according to the organization chart.
3: Roles of actors in the risk management process.	Non-attribution of responsibility in all sectors.	Participation of servers with knowledge of the subject and definition of roles and sector leaders.	It established the roles of the Rector and the CGRC, lacking the other responsible agents.
4: Creation of the Risk Management Map	Preparation of risk maps for certain activities without the understanding of servers.	Training, teaching, and training, self-study. (COSO)	Developing greater integration on the subject and investing in training.
5: Definition of parameters and indicators.	Indicators disconnected from sector activities.	Create control indicators connected with the organizational reality.	IFC is reviewing its parameters and indicators throughout the process.

Source: Prepared by the authors.

Given the context presented, it is clear that Higher Education Institutions are seeking to meet what was established by the Joint Normative Instruction (INC) No. 01/2016, incorporating good governance practices. However, for the Institution to achieve success and results with the practice of risk management, it is first necessary to develop a well-defined and targeted structure, engaging and raising awareness throughout the organization. As risk management is a complex and broad process, the participation of all employees with knowledge and a holistic view is essential.

6 Conclusion

Risk Management takes place in a social context and needs to be shared by people who are directly affected by the set of risks and who know different elements about such risks and who have different opinions about them. This work aimed to i) highlight the difference in implementation and implementation in risk management; and ii) elucidate the challenges faced by IFC staff in the Risk Management process.

Thus, it was evident that, in the process of implementing a risk management program, following the COSO methodology, there is a need for a sequence of procedures, starting with implementation, followed by implementation and monitoring. It is noteworthy that, in this case, study, the analyzed Institution managed to establish initial parameters, but it still needs adjustments and structure given the recommended risk management practices.

This study also presents five challenges and their answers. First, there is a need to create a risk-oriented culture that allows Institutions to know their weaknesses and identify opportunities, thus being able to minimize negative impacts and maximize planned results. By adding principles of governance and accountability, providing an organization of activities in a transparent and shared manner, Risk Management can favor the transposition of the decision-making model based on the bureaucratic model, with excessive formalism and resistance to change, sharing a new model based on effectiveness, with cycles of continuous improvement aimed at the quality of the public service provided to society (Challenge 1).

It was also found that the identification of organizational goals (Challenge 2) is of paramount importance for the organization to be able to map its processes. Another relevant factor is being able to correctly identify who to report to and which risks must be mapped (Challenges 3 and 5), as well as directing the necessary resources for their development.

There was also an urgent need to develop mechanisms and constant training that meet the preparation needs of the actors, with such different activities, thus providing opportunities for expanding knowledge and continuously improving a structure whose purpose is beyond implementation to carry out the management process of risk in the organization's corporate governance (Challenge 4).

For all this movement to happen, the Institutions need to go beyond the pro forma phase (standardization and regulation), carrying out all the steps established in the implementation of Risk Management to then start implementation, institutionalizing it through good practices, such as that of Compliance, for example.

Finally, to compose the limitations identified in the construction of this study, the following stand out: i) the lack of specialized literature on the institutionalization of risk management in the public sector; ii) the difficulty of accessing all the servers involved with Risk Management in the institution surveyed, which could highlight other challenges not presented here; and iii) this case study, carried out in other Institutions, may present a different result, depending on the maturity of Risk Management at the time.

In conclusion, as a recommendation for further research, a more in-depth study is indicated on the incorporation of risk management in the culture of Higher Education Institutions and how to work on resistance to changes in the implementation phase. Another topic that still needs to be studied is the identification of skills needed to improve the efficiency of public servants in the development of risk management activities.

As Risk Management is a responsibility of the entire Institution, doing it systematically prevents the knowledge acquired on the subject from being lost in a future absence, whether due to management change, leaves, or the retirement of employees.

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