

RISK MANAGEMENT AS A TOOL OF INTEGRATION BETWEEN STRATEGY AND OPERATIONAL PROCESSES: the case of a publicuniversity


GESTÃO DE RISCOS COMO INSTRUMENTO DE INTEGRAÇÃO ENTRE A ESTRATÉGIA E OS PROCESSOS OPERACIONAIS: o caso de uma universidade pública

LA GESTIÓN DE RIESGOS COMO INSTRUMENTO DE INTEGRACIÓN ENTRE LA ESTRATEGIA Y LOS PROCESOS OPERATIVOS: el caso de una universidad pública

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ABSTRACT:

Risk management was incorporated into Brazilian Public Management in order to strengthen governance and internal control so that public policies are effective, effective and efficient. The objective of this work is to present the methodology for implementing strategic risk management in a public university in Brazil. The present work described the adaptation of university management practices to the need to implement risk management as a necessary support for institution's strategies. Its implementation led to the dissemination of discussions on Governance, having reached the operational areas of the institution responsible for critical work processes.

KEYWORDS: Risk management; Governance; University.

Introduction

Risk management is something that goes back to the beginning and that is present in the Bible in historical periods before Christ (AC). In a biblical passage, the king of Egypt, upon hearing Joseph unveil his dreams about poverty and misery in his country, decided to stock up on food for the lean times that the Egyptian people would go through (Miller, 2017). How to explain this narrative with the lens of science available today, if not for risk management?

Although they were present in antiquity, studies on corporate risk management started in the 1990s, but took on greater prominence in 2000 after the countless

scandals

that occurred in large transnational corporations, in addition to the economic crisis of 2008, which was motivated by inadequate corporate governance practices (Oliva, 2016).

In Brazil, this practice was initially adopted in the Brazilian army and aimed to improve organizational performance in the strategic, operational, communication and compliance areas of the actions implemented in the public management process.

These objectives are intertwined with good planning practices, which take into account the strategic aspects of the organization and requires managers to have a good knowledge of the internal and external environment. (Sousa F. , 2018).

From the beginning of the Instrução Normativa Conjunta CGU/MP nº 1/2016 (Brasil. Presidência da República. Ministério do Planejamento, Orçamento e Gestão e Controladoria Geral da União, 2016), the development of risk management was incorporated into Brazilian Public Management in order to strengthen governance, especially internal control, to achieve the objectives and expected results and to reduce agency conflicts during the execution of public policies.

Identifying the risks of an organization / institution means detecting the events that have an influence on the achievement of institutional / organizational objectives, whether events with negative effects on the institution (threats) or positive (opportunities), allowing the institution / organization to develop a proactive attitude in the search for solutions to reduce them (Jia, Huang, & Man Zhang , 2019).

Risk management, especially those that meet strategies, has taken centerstage in the organizations for the countless cases in which large enterprises were surprised by health crises and also by internal problems, associated with agency conflicts, which caused a reduction in the assets of companies and forced them to promote good governance practices. In this way, strategic risk management seeks to mitigate those that directly affect the value of corporations, so that their assets are not devalued (Frigo & Anderson, 2011).

The present article describes the adaptation of the management practices of a university in face of the need to apply risk management as a necessary support for the implementation of the adopted strategy and for monitoring the actions of its planning.

There are studies that deal with governance and risks in public universities (da Costa, Leal, do Nascimento, de Mendonça, & Guerra, 2018; Heinz, Alves, Roratto, & Dias, 2019; Lima , Souza, Zambra, & Silva, 2019; Sousa, Finati, Perez, & Duarte, 2018), however, there are many gaps that must be filled, including the need to assess risks

with the potential to compromise the institution's strategy. Thus, empirical studies on the subject should be advanced, considering the particularities of University Management.

Heinz *et al.* (2019) made a risk assessment of the budget execution of a public university and observed that the main risks of this institution were associated with the low qualification of the civil servants who worked in the purchasing sector.

In the last five years, public universities are facing resource contingency, more specifically after the Emenda Constitucional (EC) nº 95/2016 (Brasil, 2016), known as spending cap amendment. Budgetary resources have become increasingly scarce in the face of an ever-increasing demand to ensure the maintenance of students with social vulnerability in the university and maintain their infrastructure. In this sense, universities must minimize the risks associated with this area with a view to promoting efficiency, effectiveness and effectiveness in their final actions.

Unlike corporations, the governance established at the public university does not aim to make a profit, so that it can minimize agency conflicts and implement good practices that seek to serve the society in this relationship (Castro & Silva, 2017). In this case, it should have strategies to be efficient and effective so it should be oriented to implement good governance practices, among which is the strategic management of its risks.

The university is, by its nature, a diverse organization that offers several inseparable services at the same time within a structure with little flexibility, which requires a high level of specialization from the actors involved in both the academic and administrative fields. (Matos, de Souza, da Silva, & Beck, 2019).

As a university that survives on public resources, it is subject to the rule of administrative law and the principles of public administration, being, at the same time, monitored by the regulatory bodies of the Ministry of Education, which monitors its performance through periodic evaluations of its undergraduate and graduate courses. It is an institution that works fully tied to the rules and laws that govern public governance (Brasil, 2016).

For having this characteristic, there are many risks involved in the management of the public university, such as the dropout and retention of students, flunks, low graduation rate, low scientific production, low quality indexes graduate and undergraduate courses; as for those linked to the middle area, the risks arising from inefficient budget execution, asset management, technology and people must be mitigated.

As a public institution, it needs to be socially referenced and also capable of transforming community spaces through the transfer of knowledge and technology (Floriano, da Matta, Montebianco, & Zuliani, 2019).

Considering the context in which it is inserted and the university's social function, this work seeks to answer the following research problem: How is strategic risk management done in a public university from the perspective of public governance?

In order to answer the problem, this article aims to present the methodology for implementing strategic risk management developed in a public university in Brazil.

The method used in the elaboration of the work was the case study, the only one that proved to be the most appropriate to show how the risk management of this institution that is located in the northern region of Brazil developed, with seven university campuses located from north to south of the state. It has nearly twenty thousand students regularly enrolled in undergraduate and graduate courses, and has 64 on-campus undergraduate courses and 41 graduate programs (master's and doctorate) (Universidade Federal do Tocantins, 2020).

In addition, it is important to highlight that 83.7% of undergraduate students have a family income per capita of up to 1.5 minimum wages, 25% do not have access to the internet and more than 60% come from public schools and depend on public healthcare (FONAPRACE, 2019). The data reveal that, in addition to the complexity that is inherent in a university, the 21st century is an institution that must guarantee the successful permanence of students, especially those who are more socially vulnerable. Faced with such a challenge, it is understood that the university must be guided to develop good governance practices to achieve its strategic objectives (Castro & Silva, 2017).

This article is structured in three parts, besides this introduction. The item that deals with the literature review makes a discussion about governance and risk in public management. In the sequence, the method used in the elaboration of the risk management model that integrated the strategic actions to the university's operational processes is presented, and finally, the final considerations.

LITERATURE REVIEW

The fiscal crisis in the 1980s demanded a new international economic and political arrangement with the intention of making the State more efficient. In this

context, it was sought to discuss tools that could boost the management of public institutions, and the governance model took the lead by considering the mechanisms of **leadership, strategy and control** put into practice to evaluate, direct and monitor the performance of companies and government entities (Teixeira & Gomes, 2019).

Governance is concerned with how societies, governments and organizations are managed and led, and it focuses on analyzing how and why systems of all types are constituted and operated. The term governance is understood from a multidimensional perspective because it has several meanings and a variety of elements and contexts and dimensions and forms (Edwards, Halligan, Horrigan, & Nicoll, 2012; Teixeira & Gomes, 2019).

This governance view means that the broader the understanding of how its different aspects relate, the better we can understand and practice it, especially in the public sector where relations between the State and citizens are always conflicting and motivated by a rationality guided by the maximization of preferences, whose benefits are given in the short term (Bevir, 2011).

Public governance establishes that the good practices instituted by the institutions are those in which there is integration between all agents, from those who define the strategy to those who execute the processes (Brasil, 2018a). In this context, strategic risk management emerges, which is not an autonomous activity from the main activities of the organization, but a necessary activity, and must be part of all processes, from planning to operational (Jia, Huang, & Man Zhang, 2019).

Governance and strategic risk management

Sidorenko and Demidenko (2016) state that an issue that has become common in recent years has been the impact of uncertain events that happen and affect the business of corporations, since they can determine a change in the strategies of organizations. There are governance instruments that seek to minimize uncertainty through an assertive strategic management in which the risks commonly called black swans are now less unexpected.

Among the governance instruments, risk management has a strategic bias and causes organizations to anticipate problems through mitigating practices, the purpose of which is the need to conduct a qualitative analysis that includes the survey of causes and consequences of facts that can prevent the success of an action (Frigo & Anderson, 2011; Oliva, 2016).

The great challenge of governance in public institutions is to determine how much risk to accept in the pursuit of the fulfillment of its mission and institutional objectives, since its purpose is to provide public services in the best possible way. Thus, leaders are increasingly challenged with the expectation of identifying and addressing uncertainties that few can predict and that can still be massively destructive or, on the other hand, represent opportunities considered unique (Brasil, 2018a; Sidorenko & Demidenko, 2016) .

In this direction the Tribunal de Contas da União (Brasil, 2018a) suggested that public institutions should implement a governance model that brings together the attributes of leadership, control and strategy in public management that point to the need for instruments that monitor, improve and guide managers to mitigate intrinsic and extrinsic risks to institution.

Risk is necessarily a potential event and therefore must be mitigated so that no waste of effort and public resources occurs, which triggers consequences on which contingency plans can be applied (Brasil, 2018a). According to Miller (2017), the risks are not taken away, but they can be minimized and this, in itself, reinforces the need to position its management as a central element in organizations.

The perception of risks as a potential situation must be concluded and this requires the definition of treatment strategies that must be defined precisely in order to avoid reaching the fact, since the consequences can compromise the achievement of the objectives and the mission outlined for the corporation (Miller, 2017). Not only does the idea that they should be managed individually thrive among the models discussed in the literature and applied in management, but also the idea that management consists of a portfolio of risks that surround the activities of an institution (Miller, 2017; Oleskovicz , Oliva, & Pedroso, 2018).

Risk management has established itself as an increasingly referenced strategy due to the support of the methodology of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), an American non-governmental institution that emerged from the National Commission on Fraud in Financial Reporting in 1985. This committee issued a reference model with the main objective of making a common definition of internal controls so that all entities, regardless of their legal nature, size or segment, could evaluate their control systems and seek to improve them.

In 2017, COSO made a new document available to society, describing the essential components, principles and concepts of risk management for any type of entity. This methodology proposed by the document aims to help the directors of the

entities to work with the risks inherent to the achievement of their objectives (Committee of Sponsoring Organizations of the Treadway Commission, 2017).

The document made by COSO (2004) presents a series of important benefits provided by risk management, such as:

- a) alignment between strategy and risk appetite - this alignment defines the institution's acceptable level of risk when evaluating strategic alternatives;
- b) improving risk response decisions - the management of instruments to identify and select alternatives for the treatment of risks - prevention, reduction, sharing and acceptance;
- c) reduction of surprises and operational losses - institutions expand their capacity to identify potential events and establish responses, reducing surprises in the losses and costs associated with them;
- d) identification and management of multiple risks between institutions - management facilitates the effective response to interrelated impacts and integrates responses to multiple risks that affect different parts of the institution;
- e) seize opportunities when mapping a variety of potential events, management allows to identify opportunities in advance; and
- f) improve capital allocation - obtaining robust risk information allows management to effectively assess investment needs.

Currently, risk management is on the corporate agenda of all organizations, regardless of whether they are public or private, since it has increased the susceptibility of institutions to unexpected changes that happen due to the virtuality and instantaneousness of information (Sidorenko & Demidenko, 2016).

In addition to these benefits, it is important to highlight the importance of risk management for the management of public organizations in order to deliver goods and services with public value to society. Universities are dynamic and constantly changing entities, so the objective of risk management in these institutions is to promote planning to avoid deviations in the achievement of objectives. After identifying and analyzing risks, institutions can better assess the necessary steps to be taken to mitigate them in order to ensure compliance with the institution's macro objective (Lima, Souza, Zambra, & Silva, 2019).

Steps for implementing Risk Management

For the risk management process, it is necessary to establish a series of coordinated activities for the implementation of this management instrument. These

steps, as recommended by the presented literature, are: Establishment of the Context, Identification of Risks, Analysis of Risks, Assessment of Risks and Treatment of Risks (Associação Brasileira de Normas Técnicas, 2009).

Setting the context

By establishing the context, the organization articulates [its](#) objectives, defines the external and internal, cultural, social, political, legal, regulatory, financial, technological and economic parameters to be taken into account.

Understanding the external context is important to ensure that the objectives and concerns of external stakeholders are considered. The risk management process must be aligned with the institution's culture, processes, structure and strategy, thus, the internal context impacts its management (Associação Brasileira de Normas Técnicas, 2009).

Strategic objectives are generally global and broad in the organization, generally defined for the medium and long term (Silva, 2015).

Risk identification

The institution first needs to identify the sources of risk, areas of impacts and their potential causes and consequences. The purpose of this step is to generate a comprehensive list of risks that can increase, avoid, reduce, accelerate or delay the achievement of objectives. Identification should include all risks, whether their sources are under the control of the organization or not, even if the sources or causes of the risks may not be evident. People with adequate knowledge should be involved in identifying risks (Associação Brasileira de Normas Técnicas, 2009).

The identification of risks is the second phase of the process, being the most critical, since the entire subsequent process will be conducted based on the events identified in this phase, which can have two origins: internal to the institution and external to it. Institutional action in events of internal origin has more influence, being easier to be mitigated. The construction of contingency plans for events of external origin leads to minimize the impacts caused by these risks (Silva, 2015).

The identification of the owners of the risks consists in assigning the responsibility for establishing risk management and action plans to a unit. (Silva, 2015).

Risk Analysis

Risk analysis involves developing your understanding, providing an input for your assessment, which, in turn, provides an input for decision making. Risk analysis involves assessing the causes and sources of risk, the likelihood that these consequences may occur, and their impact, if they occur. Depending on the

circumstances, the analysis can be qualitative, semi-quantitative or quantitative, or their combination (Associação Brasileira de Normas Técnicas, 2009).

The risk analysis stage, according to Silva (2015), determines the degree of risk of a given event in relation to the variables probability of the event occurring and the impact of the event, if it occurs. This analysis can be done using 3 x 3 or 5 x 5 mathematical matrices.

Risk Assessment

The purpose of the risk assessment is necessary to determine which risks need treatment and the priority for implementing the treatment. The risk assessment seeks to compare the risk level of the analyzed event with the criteria defined in the Risk Management policy (Associação Brasileira de Normas Técnicas, 2009).

Risk treatment

Once risk events are identified and analyzed, the next step requires the identification of risk responses. Risk assessment can also lead to a decision not to treat the risk, that is, accept the risk, this decision being influenced by the attitude towards the risk (Associação Brasileira de Normas Técnicas, 2009).

Establishing Action Plans

Action plans are measures adopted by management with the objective of mitigating risks, reducing the possibility of occurrence or the impact of the event, if it occurs. The action plans do not translate into traditional control activities, such as segregation of duties, limits of responsibility, but into actions established by the manager to deal with risks. An action plan will only mitigate the risk if it has been effective (Silva, 2015).

RISK MANAGEMENT METHODOLOGY IN THE INSTITUTION

The implementation of Risk Management at this university took place in 2016 as an initiative to create an institutional monitoring culture and produce relevant information to assist senior management in the decision-making process.

The institution's need was to develop a Risk Management methodology that would promote the alignment of the institution's strategy at the strategic, tactical and operational levels.

The development of this policy took place, through the Pró-Reitoria de Avaliação e Planejamento, an advisory agency responsible for the preparation of institutional planning, budget proposals, distribution and execution of the budget, and administrative modernization initiatives. In addition to this agency, the internal audit

sector assumes a fundamental role in this process and aims to ensure compliance and guide managers towards ensuring that the institution fulfills its role, considering the new public administration framework that highlights the need to have efficient, effective and effective policies aimed at serving citizens (BRASIL, 2017).

The risk assessment process was developed in seven steps:

Step 1 - Establishing an appropriate risk management environment

Regarding the context establishment phase, Portaria-SEGECEX nº 2 (Brasil, 2018a) points out as necessary items for this phase:

a) a concise description of key objectives and critical factors for success (or critical factors for success) and an analysis of factors in the internal and external environment, such as, for example, SWOT analysis; and;

b) analysis of stakeholders and their interests, such as RECI analysis, matrix of responsibilities.

These points were constructed and are present in the institution's Strategic Planning, a basic document for the construction of the internal and external scenarios, which provided elements to establish the mission, the vision of the future and the values of the university and also for the construction of the tactical actions presented in the matrix of the Institutional Development Plan.

It is important to highlight that the methodology for the construction of its Strategic Planning followed a logical sequence of well-defined activities, planning meetings and interviews with the external community. The meetings were held on all campuses in thematic seminars and planning workshops, using some participatory planning techniques in order to know the reality of each campus and, thus, together, build the university's strategic planning. The interviews were conducted in the cities where the campuses are located, with a total of 58, with people from different social locations, like politicians, authorities, journalists, religious, community leaders, student leaders, doctors etc (Universidade Federal do Tocantins, 2014).

The activities carried out on each campus were conducted by a planning committee for each unit, with advice from the central planning committee. The result was a diagnosis that portrayed the most relevant points in the internal and external environment, captured and systematized through the SWOT matrix.

Step 2 - definition, articulation of objectives

The diagnosis made on each campus defined the existing reality and, through it, it was possible to build a situational map. The analysis of the internal and external scenario provided elements to establish a mission, a vision of the future and the values of the institution and for tactical actions in the matrix of the Institutional Development Plan (PDI). Based on the definition of the institutional mission, the institution's five strategic objectives were defined. In carrying out the PDI, efforts were made to align the actions of the provost's offices with the needs of each campus and, thus, work in an articulated manner to fulfill the institutional mission. In the construction of the PDI, we sought to materialize as goals in actions to be achieved by the pro-rectories, establishing an execution schedule, indicators for follow-up and monitoring. Thus, it was possible to visualize the unfolding of the strategy defined by the academic community (Universidade Federal do Tocantins, 2016).

Step 3 - Risk identification

The identification of risks is made based on the strategic objectives of the institution (Miller, 2017). At the institution, this step was taken based on a risk mapping done by the University of Brasília, which identified 64 risk elements (Universidade Federal do Tocantins, 2016). These elements were analyzed in order to identify the factors that could impact the achievement of the five strategic objectives of the institution. Of the sixty-four elements, 43 were identified, which had a direct impact on the achievement of strategic objectives (Universidade Federal do Tocantins, 2016).

In this stage, the management units that could hold strategic risks (owners of risks) and their responsibilities were also defined. The responsibilities defined for the units are:

- I Ensure that the risk is managed in accordance with the risk management policy;
- II - Monitor the risk over time, in order to ensure that the adopted responses result in maintaining the risk at adequate levels,
- III - Ensure that adequate information on risk is available at all levels of the Institution;
- IV - Communicate about situations that involve risk; and
- V. Apply necessary mitigation measures. (Universidade Federal do Tocantins, 2019):

The identification of operational risks was made by mapping risk events in the

stages of the mapped work processes, based on the institutional competencies of each Management Unit.

The operational risks identified were attributed to a person at the institution, called "process manager", who was responsible for ensuring that they were managed and monitored properly. For such operationalization, this manager must have the necessary and sufficient authority to proceed with the monitoring and control, recording each action in a specific document.

In order to carry out this activity, the manager must make the choice of work processes that must have the risks managed and treated with priority in each technical area, considering the dimension of the losses they may cause, contributing to the identification and assessment of risks related to the processes work under your responsibility.

Step 4 - Risk analysis

This analysis was made using the Probability and Impact Matrix tool, which presents the combination of probability and impact related to risks. These two variables were assessed using a scale of 1 to 5 points (Table 1).

Table 1
Probability scale for strategic risks

Probability of Occurrence
5 – The event can dramatically increase its frequency presented in the past
4 – The event can increase the frequency presented in the past.
3 – The event can maintain its frequency presented in the past.
2 – The event can undergo slight variations in its frequency presented in the past.
1 – The event can reduce its frequency presented in the past
0 – The event can drastically reduce its frequency presented in the past

Note. Source: Adapted from "Metodologia de Gestão de Riscos Resultados Alcançados e Definições para a Próxima Fase. Brasil. Controladoria Geral da União, 2017".

The impact on strategic risks (Table 2) was assessed using three different identifiers - management effort, strategy and hierarchical intervention.

Table 2
Assessment of the impact of strategic risks

Management Effort	Strategy	Hierarchical Intervention
5 - Event with the potential to cause the university to collapse.	5 - It impairs the scope of the university's mission.	5 - It would require the intervention of the rector.
4 - Critical event, but with proper management it can be	4 - Impairs the achievement of the	4 - It would require the intervention of the dean or

supported.	associated objective.	strategic	superintendent
3 - Significant event that can be managed under normal circumstances.	3 - Damages the fulfillment of the objectives of the Strategic Guideline of the PDI.		3 - It would require the intervention of the area or campus director.
2 - Event that consequences can be absorbed, but lack management effort to minimize the impact.	2 - It jeopardizes the achievement of the goals of the Annual Work Plan.		2 - It would require the intervention of the area coordinator.
1 - Event that impact can be absorbed through normal activities.	1 - Little impact on the goals of the Annual Work Plan		1 - It would require the intervention of the responsible of the area.
0 - Event with no impact on management.	0 - No impact on the goals of the Annual Work Plan		0 - It would be achieved in the normal operation of the activity.

Note. Source: Adapted from "Metodologia de Gestão de Riscos Resultados Alcançados e Definições para a Próxima Fase. Brasil. Controladoria Geral da União, 2017".

Tables 3 and 4 show scales that show the probability used in the assessment of operational risks assessed under two different identifiers - history and control mechanisms - and also the impact scale for the assessment of operational risks.

Table 3
Probability scale in the assessment of operational risks

Historic	Control Mechanisms
5 - By analyzing the history, the event must occur in more than 80% of the cases in the process.	5 - Absence of implemented controls.
4 - By analyzing the history, the event should occur between 60% to 80% of the cases in the process.	4 - Controls partially implemented, but with high inefficiency, resulting in failure to achieve the objectives of the process.
3 - By analyzing the history, the event should occur between 40% to 60% of the cases in the process.	3 - Controls partially implemented with partial results to achieve the objectives.
2 - By analyzing the history, the event should occur in a maximum of 20% of the cases in the process.	2 - Controls implemented with good results to achieve the objectives.
1 - By analyzing the history, the event must materialize in less than 20% of the cases in the process.	1 - Controls implemented with good results to achieve the objectives, with the possibility of occurring in exceptional circumstances.
0 - By analyzing the history, the event did not materialize	0 - Controls implemented with good results to achieve the objectives, with no possibility of occurrence.

Note. Source: Adapted from "Metodologia de Gestão de Riscos Resultados Alcançados e Definições para a Próxima Fase. Brasil. Controladoria Geral da União, 2017".

Table 4
Impact scale for the assessment of operational risks

Impact on the Process
5 - Prevents the achievement of the objective of the associated process; and / or causes multiple non-compliance with current legislation; and / or leads to the manager being held

responsible for a high degree of improbity.

4 - It makes it difficult to achieve the objective of the associated process; and / or causes a large amount of non-compliance with current legislation; and / or leads to the manager's responsibility for act of improbity in medium degree.

3 - Does not compromise the achievement of the objective of the associated process; and / or causes an average amount of non-compliance with current legislation; and / or leads to the manager being held responsible for a low degree of improbity.

2 - Does not compromise the achievement of the objective of the associated process; and / or causes a small amount of non-compliance with current legislation; and / or does not take the manager's responsibility for an act of improbity.

1 - Does not compromise the achievement of the objective of the associated process; and / or causes an insignificant amount of non-compliance with current legislation; and / or does not take the manager's responsibility for an act of improbity.

0 - Does not impact the achievement of the objective of the associated process.

Note. Source: Adapted from "Metodologia de Gestão de Riscos Resultados Alcançados e Definições para a Próxima Fase. Brasil. Controladoria Geral da União, 2017".

Step 5 - Risk assessment

After measuring the probability and impact aspects, the risks were classified into three categories: green risk, from 1 to 8 points; yellow risk, 9 to 17; and red risk, from 18 to 25 points (Table).

Table 5

Risk Matrix

Impact		Probability				
		1	2	3	4	5
High	5	16	17	23	24	25
	4	14	15	20	21	22
Medium	3	6	7	13	18	19
	2	4	5	10	11	12
Low	1	1	2	3	8	9
		1	2	3	4	5
		Low		Medium		High

Note. Source: "Resolução nº 09, de 21 de agosto de 2019. Dispõe sobre a governança no âmbito da UFT, Universidade Federal do Tocantins, 2019".

The prioritization of risks was carried out according to the level: the color red represents the risk that should receive special attention and color green, the risk of less relevance.

In relation to strategic risks, they were collected and observed by applying questionnaires to Pro-Rectors, Directors, Superintendents, University Campus Directors and the Audit Team.

In relation to operational risks, they were assessed by the Unit Manager to whom the process is linked. Processes managers are considered heads of administrative units responsible for work processes, developed at the tactical and operational level, comprising Directors of Pro-Rectories, Superintendencies and the City Hall of the University.

Step 6 - Selecting risk responses and identifying risk appetite

After assessing the managers' perception of institutional risks, it was necessary to select risk treatment options, which include avoiding, reducing / mitigating, sharing / transferring and accepting / tolerating risk:

- a) avoiding risk is the decision not to initiate or discontinue the activity or dispose of the object subject to the risk;
- b) reducing or mitigating the risk consists of taking measures to reduce the likelihood or the consequence of the risks or even both. The procedures that an organization establishes to deal with risks are called control activities;
- c) sharing or transferring the risk is the special case of mitigating the consequence and / or probability of the risk occurring by transferring or sharing a part of the risk, by contracting insurance or outsourcing activities over which the organization does not has enough dominance; and
- d) accepting or tolerating the risk is deliberately not taking any measures to change the likelihood or the consequence of the risk. This treatment refers to the institution's risk appetite, a term that refers to the level of risk that the institution is willing to accept.

The risk matrix is divided into colors and each region is associated with a general orientation regarding the treatment or acceptance of the risks that are located in it (Table 6).

Table 6
Risk treatment guidelines

Risk Level	Treatment Guidelines
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Red	Risk level well beyond risk appetite. Any risk at this level must have a mitigation action included in the Annual Work Plan, being treated with priority in the allocation of resources. For risks at this level, action at the operational level is also considered necessary, with the establishment of internal controls in the work processes to reduce the occurrence and impact.
Yellow	<p>Risk level beyond risk appetite. Any risk at this level must have a mitigation action included in the Annual Work Plan. It will be treated with priority in the allocation of resources, when it is directly related to the Academic Policy Axis.</p> <p>At this level, high impact risks with a low probability of occurring, it is understood as necessary to adopt a contingency plan if the risk materializes.</p> <p>For risks at this level that are highly likely to occur, action at the operational level is understood as necessary, with the establishment of internal controls to reduce the occurrence.</p>
Green	Level of risk within risk appetite. No special measures will be taken, however, it requires monitoring and attention activities from the unit to maintain the risk at this level, or to reduce it, without additional costs.

Note. Source: "Resolução nº 09, de 21 de agosto de 2019. Dispõe sobre a governança no âmbito da UFT, Universidade Federal do Tocantins, 2019".

For red and yellow risks that require action at the operational level, the identification, analysis and evaluation of operational risks will be carried out, risks that will be identified in the work processes. As a way of dealing with these risks, controls will be defined to offer safety and efficiency to the process. Consequently, the actions carried out at the strategic and operational level will be integrated in order to mitigate institutional risks more efficiently.

Step 7 - Establishing Action Plans

After this work, a matrix was built jointly with the pro-rectories containing the risks and mitigation actions. For this, the risks that presented "high, medium" results in the variables "impact" and "probability" were selected and suggested mitigation actions activities that could significantly impact one of the two variables.

The institution requested that administrative units prepare action plans in order to monitor how risks would be mitigated and controlled.

The institution's governance committee was charged with discussing and analyzing the effects of the actions undertaken by the units that proposed them.

FINAL CONSIDERATIONS

The methodology presented in this article is relevant in the risk measurement and control process as it allows the institution to keep its strategy aligned with

organizational processes, as highlighted by the literature (Brasil, 2018a; Committee of Sponsoring Organizations of The Treadway Commission, 2004; Committee of Sponsoring Organizations of the Treadway Commission, 2017; Frigo & Anderson, 2011; Oliva, 2016).

The implementation of the Risk Management culture with the involvement of the strategic and operational levels of the institution provides a reflection on the difficulties in carrying out the actions, the consequences of these events and, most importantly, the form of institutional action to reduce their effects.

The purpose of this article is to present the methodology for implementing strategic risk management in a public university in Brazil. After going through the steps of its implementation, a matrix was created in which the risks were classified in red, yellow and green.

For each classification adopted, a form of treatment was defined, in which red risks will have a treatment that includes actions at the strategic plan (adoption of an action plan) and at the operational level (implementation of controls in the work processes). Yellow risks will only be dealt with the strategic level so as not to overload internal controls and, finally, green risks were defined within the institution's risk appetite.

After this phase was over, it was noted that the implementation of action plans in cases where the matrix pointed out as a red risk was strengthened with the definition of controls in critical processes, expanding the reach of the institution's strategic objectives.

The integration of strategic and operational risks enabled a more adequate perception in terms of the cost-benefit ratio of internal controls, contributing to the optimization of the use of available resources for the implementation of controls in organizational processes. This occurs as the manager can view the institution's critical processes, thus being able to reduce the controls made on non-critical processes for the institution to apply them to critical processes that need improvement.

The proposed model, in addition to being a way of risk management, aims to be a support system for the governance of the institution, as it will simplify the practice of evaluating, directing and monitoring the performance of management, as directed by the Controladoria Geral da União (Brasil, 2018a).

The literature points out (Committee of Sponsoring Organizations of The Treadway Commission, 2004; Committee of Sponsoring Organizations of the Treadway Commission, 2017; Edwards, Halligan, Horrigan, & Nicoll, 2012; Jia, Huang, & Man

Zhang , 2019) that governance and risk management cannot be viewed as autonomous activities, unrelated to the others activities and processes of the institution, they need to be systemic. Therefore, the participation of technicians and the support of the institution's top management were essential. In the researched institution, a governance committee was created, which played a fundamental role in the dissemination of the governance culture in the institution.

The implementation of Risk Management at the institution led to the dissemination of discussions on governance, which went beyond what was previously restricted to higher management, reaching the institution's employees responsible for critical work processes. As a limitation of this work, there is an absence of the perception of managers and civil servants about this process, recommending that an analysis of the effects of Risk Management be made in view of the achievement of institutional objectives.

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RESUMO:

A gestão de riscos foi incorporada à Gestão Pública Brasileira com a finalidade de fortalecer a governança e o controle interno para que as políticas públicas sejam efetivas, eficazes e eficientes. O objetivo deste trabalho é apresentar a metodologia de implantação da gestão estratégica de riscos em uma universidade pública do Brasil. O presente trabalho descreveu a adaptação das práticas de gestão da universidade frente à necessidade de implementação da gestão de riscos como suporte necessário para as estratégias da instituição. Sua implantação propiciou disseminação das discussões sobre Governança, tendo alcançado as áreas operacionais da instituição responsáveis pelos processos críticos de trabalho.

PALAVRAS-CHAVES: Gestão de risco; Governança; Universidade

RESUMEN:

La gestión de riesgos se incorporó a la Gestión Pública Brasileña con el fin de fortalecer la gobernabilidad y el control interno para que las políticas públicas sean efectivas, efectivas y eficientes. El objetivo de este trabajo es presentar la metodología para la implementación de la gestión estratégica de riesgos en una universidad pública de Brasil. El presente trabajo describió la adecuación de las prácticas de gestión universitaria a la necesidad de implementar la gestión de riesgos como soporte necesario para estrategias de la institución. Su implementación dio lugar a la difusión de discusiones sobre Gobernanza, habiendo llegado a las áreas operativas de la institución responsables de los procesos críticos de trabajo.

PALABRAS CLAVE: Gestión de riesgos; Gobernancia; Universidad.