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Risk Management in Public Procurement: an Exploratory Case Study in an agency of the State Government of Minas Gerais

Gestão de Riscos em Compras Públicas: Estudo de Caso Exploratório em um Órgão do Poder Executivo Estadual de Minas Gerais

Laysse Fernanda Macêdo dos Santos[1]
Universidade Federal de Minas Gerais – UFMG
laysse fernanda@hotmail.com

Ricardo Silveira Martins[1]
Universidade Federal de Minas Gerais – UFMG
ricardomartins.ufmg@gmail.com

Abstract: The article aims to identify the sources of risks and the level of vulnerability existing in the processes of acquisition of goods and services within the scope of an agency of the state power of Minas Gerais. An exploratory, qualitative research that uses focus groups for data collection was carried out. The content of the focus groups was transcribed and analyzed in the light of content analysis. The results indicate that most of the identified risks are generated from internal causes of public associations and are mainly due to three human sources: (1) human failures, (2) clear and well-defined organizational processes, and (3) inconsistencies in technology tools. The results also demonstrate that public associations are the main holders of mitigation strategies to reduce the vulnerability found in the purchase of goods and services. The article presents relevant information for the implementation of risk management in the acquisition of goods and services within the scope of the Brazilian Public Administration, which contributes to reducing vulnerability, improving the quality of services provided to citizens and improving use public resources, especially in a context of economic crisis and serious budget constraints. Furthermore, this article contributed to the literature by expanding the number of researches on risk management in public procurement and by creating a typology to classify the risks present in procurement processes managed by management.

Keywords – Risk Management; Risk Management in Government Purchases; Public Purchases.

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[1] Universidade Federal de Minas Gerais — Pampulha – CEP 31270-901– Belo Horizonte (MG) – Brasil

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Resumo: O artigo visa identificar as fontes de riscos e o nível de vulnerabilidade existente nos processos de aquisição de bens e serviços no âmbito de um órgão do poder executivo estadual de Minas Gerais. Foi realizada uma pesquisa exploratória, qualitativa e que utilizou grupos focais para coleta dos dados. O conteúdo dos grupos focais foi transcrito e analisado à luz da análise de conteúdo. Os resultados indicam que a maior parcela dos riscos identificados é gerada a partir de causas internas às organizações públicas e decorrem principalmente de três fontes: (1) de falhas humanas, (2) da ausência de processos organizacionais claros e bem definidos e (3) das inconsistências nas ferramentas de tecnologia. Os resultados também demonstram que as organizações públicas são as principais detentoras das estratégias de mitigação para reduzir a vulnerabilidade encontrada nas aquisições de bens e serviços. O artigo apresenta informações relevantes para a implementação da gestão de riscos nas aquisições de bens e serviços no âmbito da Administração Pública brasileira, o que contribui para a redução da vulnerabilidade, para a melhoria da qualidade dos serviços prestados aos cidadãos e para o aperfeiçoamento da utilização dos recursos públicos, sobretudo, em um contexto de crise econômica e sérias restrições orçamentárias. Ademais, este artigo contribuiu para a literatura ao ampliar o número de pesquisas sobre gestão de riscos nas aquisições governamentais e ao criar uma tipologia para classificar os riscos presentes nos processos de compras realizadas pela administração pública.
Palavras-chave – Gestão de Riscos; Gerenciamento de Risco em Compras Públicas; Compras Públicas.

Introduction

Public administration is characterized by the population's expectations in terms of transparency, responsibility, efficiency and effectiveness, in order to use public resources, improve the quality of delivery of services provided to citizens and increase confidence in the governance system (Ministério do Planejamento, Orçamento e Gestão, 2013). Within public administration, one area that plays a significant role for social development is government procurement. Acquired public acquisitions are gaining more and more importance, as a mechanism to provide greater efficiency to the public budget, obtaining more benefits to citizens, without the need to increase the tax burden (Gordon, Zemansky & Sekwat., 2000).

In addition to the social impact, it is important to highlight the volume of resources mobilized with public contracts. In this sense, a dimension of expenditure on administrative expenses within the Union is obtained, in 2021 a survey was carried out on the Federal Government's Transparency Portal which

indicates that in 2020 the current expenditure of the Union with the purchase of materials and contracting of services amounted to R$ 35,723,112,360.09 (Federal Government Transparency Portal, 2021).

In view of the social and economic impact, there is a government procurement company. In line with this perspective, a large number of countries have become more aware of the importance of recognizing public procurement as an area vulnerable to mismanagement, corruption and other types of risks throughout procurement processes (Mahmood, 2010). How examples of risks in the purchasing processes are: inadequate procedural instruction, gaps without a prepared term of reference, insufficient or excessive object specification, market research failures, limited qualification of the auctioneer, lack of planning, excessive dependence on the contracted company, failed bids, occurrence of fraud between bidders during the bidding process (Garcez, 2019; Soares, 2019; Martin, 2020).

In this sense, it is essential to implement risk management practices in public contracts (Manuj and Mentzer, 2008; Manea and Popa, 2010). Mogre, Lindgreen and Hingley (2017) draw attention to the fact that the literature dealing with the issue of public procurement has not progressed concurrently with the demands and urgencies of society. It is not possible to see a solid overview of this risk management in public contracts and this is evident when searching in various scientific databases, such as Google Scholar, Scielo, Web of Science, Elsevier, ScienceDirect (Soares, 2019).

To reinforce this argument, in March 2022, research was carried out in the Web of Science, Scopus and Emerald Insight databases, which are reliable, integrated databases that provide influential, relevant and credible information. The searches were carried out by combining the keywords “risk and public purchase” and “risk and public procurement” and using two filters, one filter being the search for keywords existing in the titles of articles published and available in the bases and another filter corresponding to the time limit between the years 1990 and 2022.

On the Web of Science, the keyword combination “risk and public purchase” found 3 articles and “risk and public procurement” found 17 articles. In the Scopus database, the search for “risk and public purchase” did not find any records and “risk and public procurement” found 37 results. Finally, the search carried out using the same criteria in the Emerald Insight database did not find any results in the search for “risk and public purchase” and “risk and public procurement” found 2 results. Given this gap, this

research aims to identify the sources of risks and the level of vulnerability existing in the processes of acquisition of goods and services within the scope of an agency of the state power of Minas Gerais

In addition to this introductory section, the article presents four other sections: (1) literature review that elucidates the relevant concepts for understanding the subject under study (2) methodology that details the methodological procedures necessary for data collection and analysis (3) results that present the findings found with the research and (4) final considerations that summarize the results, contributions, limitations and suggestions for future research.

Literature Review

Public procurement

The Public Administration performs works and services, makes purchases and sells goods. In order to carry out these activities, it needs to hire third parties, but their exclusive contracts are, in general, a selective process called bidding (Meirelles, 2010). Law 14133/21 regulates art. 37, item XXI of the Federal Constitution of 1988 and "establishes general rules for bidding and contracting for Public, Municipal and Foundational Administrations of the Union, States, Federal District and Municipalities". (Brasil, 2021).

In the application of the said Law,

> the principles of legality, impersonality, morality, publicity, efficiency, public interest, administrative probity, equality, planning, transparency, effectiveness, segregation of functions, motivation, binding to the public notice, objective judgment, legal certainty, reasonableness, competitiveness, proportionality, celerity, economy and sustainable national development.

Bidding can be defined as the administrative procedure by which a public entity, in the exercise of its administrative function, opens to all interested parties, who are subject to the conditions established in the invitation to bid (public notice or invitation letter), the possibility of formulating proposals among the which will select and accept the most advantageous for the conclusion of the contract (Di Pietro, 2016). Bidding is the technical-legal means of verifying the best conditions for the execution of works and services, purchase of materials and disposal of public goods (Meirelles, 2010).

Bidding modalities represent different ways of regulating the selection procedure. The different types of procedures are distinguished by the complexity of each phase of the bidding process and by the variation of each of these phases. Items I to V of article 28 of Law 14.133/21 present the bidding modalities, namely:

I - trading;
II - competition;
III - contest;
IV - auction;
V - competitive dialogue.

The Public Administration can carry out the process of direct contracting, which includes cases of unenforceability and waiver of bidding. These cases are provided for in articles 74 and 75 of Law 14.133/21, which deal respectively with the unenforceability and waiver of bidding. In items I to V of article 74 of Law 14.133/21, all situations in which the bidding process is unenforceable are listed. In sections I to XVI of article 75 of the aforementioned law, the cases in which the Administration is allowed to waive the bidding are listed.

Throughout the procurement processes, due to the effect of the interaction between applicants, buyers and suppliers, which are part of the procurement system, public organizations are exposed to more types of risks, for example, occurrence of deserted or respected bids, errors in the specification technique of the object or service to be purchased, failures in market research and fraud.

In view of this scenario, there is an imperative for an implementation of risks in procurement, an end to the implementation of risk assessment alternatives, an end to the implementation of alternative measures for the frequency and exposure of risks and their solutions. of preventive measures, events to reduce their risks in case of risk occurrence (Manuj, Mentzer, 2008; Manea, Popa, 2010).

Risk management in government procurement

Public procurement must undergo continuous and permanent practices of risk management and preventive control, including through the adoption of information technology resources (Brasil,2021). The

main activities inherent to risk management in the context of procurement of goods and services are (European Commission, 2010):

- Define and assess risks for all partners involved in the various stages of the procurement process, including: identifying the types of risks (which may change during the various stages of procurement), the causes and sources of risk, the probability of occurrence of the risks and their potential consequences;
- Adopt measures that avoid or reduce the possibility of materializing risks;
- Define actions to mitigate possible consequences and systematically prepare contingency plans that allow facing the impact of risks with lower costs and deadlines.

Within the scope of purchases made by the Public Administration, when not properly managed, risks threaten the achievement of objectives, compliance with deadlines, cost control and the quality of a program, project or the delivery of services to citizens (Ministério do Planejamento, Orçamento e Gestão, 2013).

Risk management can help public organizations to improve efficiency and effectiveness in several ways, such as: improving the delivery of services to citizens, improving the use of resources and optimizing the planning and management of programs and projects. Good risk management also contributes to increasing citizen confidence in the Government's ability to deliver the promised services, in the governance system and in the proper use of public resources (Ministério do Planejamento, Orçamento e Gestão, 2013).

Reinforcing the importance of risk management in public procurement, in Brazil, Normative Instruction N ° 4 and Normative Instruction N ° 5, dated September 2014 and May 2017 respectively were published. The first instrument, among other subjects, addresses some aspects related to risk management in the processes of acquiring information technology solutions within the scope of the Federal Government. In turn, the second instrument brings, among other themes, risk management in the processes of contracting services by federal agencies and entities.

Article 25 of Normative Instruction N °5 highlights that risk management in public procurement is a process that consists of the following steps:

> I- Identification of the main risks that may compromise the effectiveness of contract planning, supplier selection and contract management or that prevent the achievement of results that meet the needs of the contract;
> II- Assessment of the identified risks, which consists of measuring the probability of occurrence and the impact associated with each risk;
> III- Treatment of risks considered unacceptable by defining actions to reduce the probability of the events occurring or their consequences;
> IV- For the risks that remain unacceptable after the treatment, definition of the contingency actions in case the events corresponding to the risks occur; and
> V- Definition of those responsible for risk treatment and contingency actions.

In short, good risk management in public procurement results in a better chance of delivering services on time, in cost and in expected quality, in lower expenses resulting from failures to anticipate risks, in reducing surprises for citizens and for themselves government, increasing the chances of success of government programs and projects and expanding transparency (Ministério do Planejamento, Orçamento e Gestão, 2013).

Phases of the risk management process

In the literature, it is possible to identify several models with different phases to carry out risk management. In this study, it was decided to address in greater detail the phases of the risk management process present in the ISO 31000/2018, because it has a greater level of scope and depth.

Although the risk management process is often presented as sequential, in practice it is interactive and consists of the following steps:

1) Communication and consultation: involve all stakeholders and must take place throughout all stages of the risk management process (Associação Brasileira de Normas Técnicas, 2018). Communication and consultation plans should address issues related to the risk, its causes, its consequences (if known) and the measures that will be taken to address them (Associação Brasileira de Normas Técnicas, 2018).

2) Establishing the context: this is the stage in which the company articulates its objectives, defines internal and external parameters for risk management and establishes the scope and risk criteria that will guide the entire process (Associação Brasileira de Normas Técnicas, 2018). Understanding the internal context is essential for the risk management process to be aligned with the company's culture, processes, structure and strategy, as these factors directly influence the way in which the company manages risks (Associação Brasileira de Normas Técnicas, 2018).

3) Risk assessment: it is the global process consisting of three steps (1) risk identification, (2) risk analysis and (3) risk assessment (Associação Brasileira de Normas Técnicas, 2018).

3.1 Risk identification aims to generate a comprehensive list of risks that can avoid, reduce or delay the achievement of the company's objectives (Associação Brasileira de Normas Técnicas, 2018).

3.2 Risk analysis: involves understanding the risks and provides inputs for the risk assessment stage, for decisions on the need for risks to be addressed and on the most appropriate strategies to address the risks (Associação Brasileira de Normas Técnicas, 2018). Risk analysis also comprises the assessment of the causes and sources of risk, their consequences and the likelihood of these consequences occurring (Associação Brasileira de Normas Técnicas, 2018).

3.3 Risk assessment: aims to assist the decision-making process based on the results of the risk analysis stage (Associação Brasileira de Normas Técnicas, 2018). It also aims to attribute probabilities of events involving risk and their consequences (Tuncel & Alpan, 2010). This step compares the results of the risk analysis with the criteria outlined by the firm in the context establishment phase, in order to identify which risks are or are not tolerable or acceptable (Kirilmaz & Erol, 2017).

4) Risk treatment: involves balancing costs and benefits related to each option to address risks (Associação Brasileira de Normas Técnicas, 2018). When selecting treatment options, it is important for the company to consider the values and perceptions of the various stakeholders involved in the situation (Associação Brasileira de Normas Técnicas, 2018).

5) Monitoring and critical analysis: they can happen periodically or sporadically in response to a specific event (Associação Brasileira de Normas Técnicas, 2018). It is essential that monitoring and critical analysis cover all risk management processes in order to ensure better controls, obtain better information about the process, detect changes in the internal and external environment and identify emerging risks (Associação Brasileira de Normas Técnicas, 2018).

Vulnerability, risk mitigation strategies and resilience

Vulnerability is an important concept in risk management and is associated with the joint consideration of the probability of the occurrence of risk events with the severity of their impact (Corrêa, 2010).

These risk events can be external or internal to organizations. External events can be classified into 5 categories exemplified below (Coso, 2007):

- Economic: price fluctuations, availability of capital, or reduction in barriers to competition entry, the result of which translates into a higher or lower cost of capital, and new competitors.
- Environment: fires, floods or earthquakes, which cause damage to factories or buildings, restriction on the use of raw materials and loss of human capital.
- Political: election of government agents with new political agendas and new laws and regulations, resulting, for example, in opening or restricting access to foreign markets, or raising or lowering the tax burden.
- Social: changes in demographic conditions, social customs, family structures, work/life priorities and terrorist activity, which, in turn, can cause changes in demand for products and services, new places of purchase, demands related to human resources and production stoppages.
-Technological: new forms of electronic commerce, which can lead to an increase in the availability of data, reductions in infrastructure costs and an increase in the demand for technology-based services.

In turn, internal events can be classified into 4 categories, exemplified below (Coso, 2007):

- Infrastructure: increased capital allocation in preventive maintenance and call center support, reducing equipment downtime and increasing customer satisfaction.
- Personnel: work accidents, fraudulent activities and expiration of work agreements, causing a reduction in available personnel, personal, monetary or reputational damage to the organization and production stoppages.
- Process: process modifications without adequate changes in administrative protocols, process execution errors and outsourcing delivery to customers without adequate supervision, resulting in loss of market share, inefficiency, customer dissatisfaction and decreased customer loyalty.
- Technology: increased resources to deal with volume variability, security breaches and potential system downtime, causing a reduction in the order backlog, fraudulent transactions and inability to maintain operations.

Jüttner, Peck and Christopher (2003) define vulnerability as the propensity for sources and risk drivers that overcome mitigation strategies, causing adverse consequences. According to Chowdhury and Quaddus (2015) the main vulnerability factors in supply networks are:

- Vulnerability associated with macroenvironment hazard/risk: natural disasters (floods, cyclones), fire and other accidental damage.
- Strategic vulnerability: increased competition and problems in the relationship with the buyer or supplier.
- Financial vulnerability: currency fluctuation/economic recession and bankruptcy of any supply chain member.
- Operational vulnerability: shortage of skilled workers, failure in production planning and inventory management, interruption in service provision and quality defects.
- Demand and supply vulnerability: Supplier delay and lack of alternatives for critical items, opportunism by buyers or suppliers, and fluctuating demand/uncertainty.

Mitigation strategies can be adopted by public agencies to reduce the vulnerability found in government procurement in order to contribute to government procurement being carried out in accordance with the objectives that should guide the performance of the procurement function in the proactive context.

Mitigation strategies can be preventive or corrective. The findings of Ghadge, Dani and Kalawsky (2012) indicate that 58.33% of the studies presented preventive mitigation strategies and 23.33% corrective mitigation strategies. Preventive mitigation strategies seek to identify risk events and prevent damage before they occur, by analyzing scenarios and reducing the possibility of a risk occurring (Bahroun & Harbi, 2015, Corrêa, 2010). Corrective mitigation strategies aim to reduce the impact and consequences resulting from risk events (Bahroun & Harbi, 2015, Corrêa, 2010).

Resilience is the ability of a supply network to persist, adapt or transform in the face of change (Wieland & Durach, 2021). It can be conceptualized as a proactive capacity - ability to recognize and defend against disorders before adverse consequences occur - and as a reactive capacity - ability to take action after experiencing a crisis (Chowdhury & Quaddus, 2017). The main proactive capabilities are: flexibility, redundancy/reserve, robustness, adaptability, collaboration, integration, visibility, market strength, financial strength, diversity and efficiency (Chowdhury & Quaddus, 2017). The main reactive capacities present in the literature are: responsiveness and recovery (Chowdhury & Quaddus, 2017).

Ali and Golgeci (2019) identified and characterized the principles of resilience into three groups: preparation, resistance and recovery. From the first group, flexibility (38%), collaboration (30%), redundancy (19%), culture for resilience (17%), information sharing (16%) and innovation (12%) stand out. The second most cited in the literature were: visibility (32%), robustness (28%) and agility (26%). Finally, in the third group, the principles of: resource reconfiguration (31%), adaptation (20%) and disruption mitigation (18%) stand out.

Risk typologies

The types of risks clarify the relevant dimensions of potential risks faced by companies and provide the basis for risk assessment (Jüttner, Peck & Christopher, 2003). In this sense, Zsidisin, Panelli and Upton

(2000), Zsidisin (2003a), Zsidisin (2003b) and Zsidisin and Ellram (2003) grouped the sources of supply risk into four main categories: product-related risks, market-related risks, supplier-related risks and risks related to other sources.

Pfohl, Kohler and Thomas (2010) developed a classification composed of three types of risks: risks internal to a focal company, risks outside the focal company and within the supply chain and risks outside the supply chain. The World Economic Forum Insight Report (2014) proposed a typology that classifies risks as economic, environmental, geopolitical, societal and technological. The typology proposed by Corrêa (2010) is composed of nine risk categories, being: network of operational units, human resources, technology, transportation, supply, demand, information systems, economic environment and political environment.

The typology proposed by Kalvet and Lember (2010) highlights five sources of risk in public procurement for innovation: technological risks, market risks, organizational risks, financial risks and turbulence risks. However, no more comprehensive typology was found in the literature to classify the risks encountered in public procurement processes.

Therefore, an adaptation of the typology proposed by Pfohl, Kohler and Thomas (2010) was carried out, which is composed of three types of risks: risks internal to a focal company, risks outside the focal company and within the supply network and risks outside the supply chain. Making the necessary adaptations to the context of government procurement, the risks internal to a focal company correspond to government risks (risks generated by causes internal to public bodies and entities), risks outside the focal company and within the supply network correspond to risks market risks (risks generated by suppliers of goods and services for public bodies and entities) and risks outside the supply chain correspond to risks in the institutional environment (risks generated by political and legal changes).

Methodology

As a data collection instrument used were focus groups. Focus group is a set of people selected and gathered by research to contest and comment on a topic, which is the subject of the person, based on their experience (Powell & Sigle, 1996).

The use of focus groups allows gathering information about a particular topic, with some detail and depth (Gatti, 2012). The wealth of information that emerges in group interaction goes beyond previous ideas, places new categories and forms of understanding, which support new and useful inferences related to the study problem (Gatti, 2012). Thus, focus groups are more used to generate exploratory theories than to verify or test previous hypotheses (Gatti, 2012). For the formation of focus groups, the following characteristics were observed: (1) size, (2) homogeneity, (3) focus of discussion and (4) number of focus groups to be carried out.

As for size, Gatti (2012) points out that to address issues in greater depth, each focus group cannot be too large or too small, with its size preferably being between six and twelve people. For Edmunds (1999) the composition of a focus group should include between eight and ten participants. Krueger and Casey (2014) highlight that focus groups are typically composed of five to eight people, but can range from four to twelve participants. Considering that there is no consensus in the literature for the size of a focus group, in this study it was decided to carry out focus groups with eight and nine people, as these numbers are supported by the definitions presented and do not give the group a restricted number or very wide range of participants.

Homogeneity is related to the selection of focus group participants so that they have some characteristic(s) in common that qualify them for the discussion of the issue that will be the focus of the work (Gatti, 2012). The common characteristic may be related to gender, socioeconomic conditions, type of work, marital status, place of residence, frequency of use of a certain public or social service, education (Gatti, 2012). In this study, the characteristics common to the participants of the focus groups are related to the fact that they are all public servants or employees assigned to the executive branch of the state of Minas Gerais and carry out activities inherent to the public procurement processes.

The focus of discussion consisted of the central theme of the research, which is risk management in public procurement. In this sense, contributions were obtained from the participants of the focus groups regarding the main risks present in the processes of acquisition of goods and services, the sources causing the risks, the possibility of occurrence, the consequences and the mitigation strategies adopted.

Regarding the number of focus groups carried out, Gatti (2012) points out that the most usual procedure is to use several focus groups in the same research, in order to achieve greater coverage of the topic in question. Barbour (2009) emphasizes that there is no magic number of focus groups to be made and that the researcher must perform the number of focus groups based on the research problem, comparisons and analyzes that he intends to do.

The focus groups were carried out within the scope of a state organization belonging to the Executive Power of the Government of Minas Gerais. The choice for carrying out the study in this organization is due to the representativeness of their purchases in terms of values, diversity of goods and services purchased and organizations served, as it carries out the acquisition of common and strategic goods and services for the high level of service of attendance of programs defined by the Government of Minas Gerais. In addition to the representativeness of the acquisitions made, this organization plays a key role in leadership when it comes to public procurement in the State of Minas Gerais.

All employees (25 employees) assigned to the public agency studied and working in the various stages of the procurement process were invited to participate in the focus groups on days and times previously scheduled. However, only 17 accepted to participate in the research and were divided into two groups, one with 9 participants and the other with 8 participants. The focus group participants were previously informed about the research objectives and the acceptance of participation in the study was made official by signing the informed consent form.

Data collection was guided according to the following questions:

1. What are the risks involved in the acquisition of goods and services?
2. What are the causes associated with each risk presented?
3. What is the possibility of occurrence associated with each risk found? Consider the information on the board:

Table 1.
Possibility scale

Possibility	Description	0ccurrences
Very low	Extraordinary event, with no history of occurrence.	Uo to 5
Low	Casual and unexpected event.	> 5 to 10
Intermediary	Expected event, of reduced frequency, and with a partially known history of occurrence.	> 10 to 15
High	Usual event, with a widely known history of occurrence.	>15 to 20
Very High	Repetitive and constant event.	>20

Source: Adapted from Secretaria do Tribunal Superior do Trabalho, 2015, p. 24

4. What are the consequences associated with each risk presented?
5. How severe are the consequences associated with each risk found?
Consider the information on the board:

Table 2.
Severity of consequences scale

Severity	Description
Very low	Negligible impact on objectives.
Low	Minimal impact on goals.
Intermediary	Medium impact on goals, with possibility of recovery.
High	Significant impact on objectives, with possibility of recovery.
Very High	Maximum impact on objectives, no possibility of recovery.

Source: Adapted from Secretaria do Tribunal Superior do Trabalho, 2015, p. 25

6. What are the mitigation strategies adopted to reduce the chances of occurrence and / or the consequences of the events that cause interruptions?

The discussions that took place within the focus groups were recorded and transcribed in full. The collected data were analyzed through content analysis, which is an investigation technique that uses an objective and systematic description of the content present in the communications, in order to interpret them (Bardin, 2011). The content analysis was performed with the aid of the MAXQDA software version 2018. The content analysis process took place in three stages: (1) pre-analysis, (2) material exploration and (3) treatment of results, inference and interpretation (Bardin, 2011).

The pre-analysis corresponded to the organization phase itself of the documents containing the recordings of the focus groups and aimed to systematize the initial ideas, in order to lead to a precise scheme of the development of successive operations, in an analysis plan. In the pre-analysis, a floating

reading of the collected data was carried out, in order to establish contact with the text files containing the transcript of the focus groups and to make initial proposals for analysis categories.

In the material exploration stage, seven categories of analysis were created, based on the existing literature on risk management in government procurement. The categories created were: (1) risk identification, (2) causes of risk, (3) possibility of risk occurrence, (4) consequences arising from the risk, (5) severity of the consequences of the risk, (6) mitigation strategies adopted to avoid and /or minimize risk and (7) mitigation strategies that could be adopted to avoid the risk.

Finally, the stage of treatment of the results, inference and interpretation consisted of treating the raw data in such a way as to be translated into meaningful and valid information about the objective set for the research. In the present work, the stage of treatment of results, inference and interpretation gave rise to the session presented below.

Results presentation

Risk analysis

The risks pointed out by the focus group participants were classified according to the adaptation of the typology proposed by Pfohl, Kohler and Thomas (2010), in which the internal risks to a focal company correspond to government risks, the risks outside the focal company and within the supply network correspond to market risks and the risks outside the supply network correspond to risks in the institutional environment, according to table 3.

Table 3.
Risks identified by the focus group participants

Category	Risk	Cause / Source	Possibility	Consequence	Severity	Mitigation
Government risks	Market research failures	Lack of knowledge about the object to be acquired	Intermediary	Procurement errors, failed bids, reference price failures, wasted time and labor	High	Request the assistance of suppliers to know the object
	Failures in the term of reference	Human failures and absence of standardized processes	Very High	Errors in market research and purchases, rework and waste of public resources	High	Guide applicants in preparing the terms of reference
	Lack of planning by the requesting organizations	Management failures	Very High	Duplicate purchases, rework, loss of bargaining Power	Very High	Plan purchases through a schedule
	Events with deserted and/or failed items	Object specification errors, market research and term of reference failures	Intermediary	Rework, wasted labor and time, not meeting the purchase demand	High	Improve processes related to item specification and market research
	Insufficient human resources	Returning people to the original bodies and cutting commissioned positions	High	Work overload, paralyzed processes and employee demotivation	Very High	Streamline work processes and reallocate available labor
	Inconsistencies in the electronic purchasing system	System outdated	High	Errors, possible fraud and insecurity of those who operate the system	Very High	Develop controls external to the system and identify gaps in the system.
Government risks	Absence and / or communication failures	Servers retain information by status or because they do not find it relevant to share	High	Perform a task without information and make mistakes	High	Be proactive in seeking information, promoting informational meetings
	Low storage capacity for e- mail from criers	Storage capacity is standard and criers receive emails that need to be stored longer	Low	Do not receive a document during an event and wrongly declassify a supplier	High	Adopt a central email to receive documents from suppliers
	Lack of availability of budgetary resources	Management failures to carry out financial planning	Very High	Suppliers requesting suspension of supply due to non-payment.	High	Jointly plan financial resources and purchases
Market risks	Market research failures	Lack of interest from suppliers in offering quotes	Intermediary	Procurement errors, failed bids, under or overestimated	High	Use constant prices in current minutes or contracts

	Events with deserted and / or failed items	Companies' lack of interest in participating in tenders	Intermediary	reference prices, wasted time and labor Rework, wasted labor and time, not meeting the purchase demand	High	Improve the management of relationships with current and potential suppliers
Market risks	Supplier without document required to qualify for the event	Absence of impediment to participate in the bids without documentation and lack of suppliers' knowledge about the documentation	Very High	Wasted time, slowness and failed events	High	Guide suppliers and request during the event to send the necessary documents
	Bidding fraud by suppliers	Adulteration of documents and collusions between suppliers	High	Negotiations that do not reflect the reality of the company and the market	High	Develop knowledge and skills in the auctioneers to identify possible frauds
Risks of the institutional environment	Political changes	Changes in personnel, changes in purchasing strategies and management	Very High	Change in people who hold strategic positions, purchase planning and previous government projects	High	Learning to manage in different political settings
	Changes in legislation governing public procurement	Creation, alteration or exclusion of laws, rules and decrees that govern government purchases	High	Purchasing processes instructed with errors and vices that violate legality, resources and warrants	High	Disseminate information related to changes in legislation

Most of the risks identified by the focus group participants belong to the category of governmental risks that are generated from causes internal to public organizations and result mainly from human failures, the absence of well-defined organizational processes and inconsistencies in the management tools technology, which is in line with Coso (2007) who indicates that there are 4 categories of events internal to organizations that can cause risks: infrastructure, people, processes and technology.

In relation to people or human resources, it is essential that employees are prepared to face new challenges as they issue and risks across the organization change and become more complex – in partly due to rapidly changing technologies and intensifying competition (Coso, 2007). Teaching and training, whether through classroom instruction, self-study, or on-the-job training should help staff keep up to date and effectively deal with a changing environment transition (Coso, 2007). It is not enough to hire competent personnel and provide them with training only once. O learning process is continuous.

It is observed that the profile of the public buyer currently demands less time from this professional with operational routines, concentrating his activities on topics of more strategic relevance (Almeida & Sano, 2017). In this sense, Tassabehji and Moorhouse (2008) point out that the contemporary buyer plays a strategic role in raising the awareness of top management of organizations that he is responsible for a large volume of financial resources and is involved in decisions that impact the future of the organization.

The effort to expand purchasing activities leads to the need for adjustments in the team working in the sector, since these professionals are part of a complex and dynamic environment that requires buyers to improve their skills in order to contribute to the organization's success (Almeida & Sano, 2017). Therefore, it is emphasized that modern people management within the scope of Brazilian public organizations must be guided by competence management. This means looking at work through a lens that combines knowledge, know-how, experience and behavior; by stimulating learning and the dissemination of knowledge as the key to innovation; for valuing information sharing and for the need for a high degree of involvement of managers and employees in the work environment (Amaral, 2006).

The adoption of these people management practices has great potential to improve the results achieved by public organizations, including results resulting from risk management in government

procurement, as public servants with adequate skills, committed to the dissemination of knowledge and highly involved, cease to be a source of risk generation and become risk mitigation strategies.

With regard to organizational processes, enterprise risk management encompasses the elements of the administrative process that enable management to make well-informed risk decisions (Coso, 2007). Nagali *et al.* (2008) highlight the importance of well-defined processes to manage uncertainties and risks in the purchase of goods and services. Corroborating this perspective, Munnukka and Järvi (2015) highlight the relevance of process management to help organizations discover and manage unexpected and potentially harmful events that may materialize in risks in purchasing processes. It is known the importance of managing the processes inherent to the acquisition of goods and services to institutionalize risk management practices in purchasing, however, there is still no deeper understanding of how this mechanism affects the perceptions of risks related to organizational purchases (Munnukka & Järvi, 2015).

Regarding technology, it is noteworthy that it can be used in procedures that direct organizational actions in the implementation of risk management policies (Coso, 2007). In this sense, technological tools must be important allies for the effectiveness of the risk management process present in the acquisition of goods and services by organizations and not sources that generate real or potential risks. In this sense, Weeserik and Spruit (2018) emphasize that given the volume and complexity of the risks to which organizations are exposed, technologies, such as information systems, must play a crucial role in supporting and optimizing the performance of management processes of risks.

Vulnerability analysis

With the information about the possibility of occurrence and the assessment of the severity of the consequences, the two informations were crossed and the level of vulnerability present in the public procurement processes by the organization studied was obtained.

Examining the vulnerability associated with the identified risks, there is a high concentration of risks in the extreme vulnerability. This situation requires the adoption of mitigation strategies that can be corrective and/or preventive (Bahroun & Harbi, 2015; Corrêa, 2010). Most of the mitigation strategies for government risks, market risks and risks of the institutional environment are preventive, which

corroborates the findings of Ghadge *et al*. (2012) in which 58.33% of the studies presented mitigation strategies preventive measures and 23.33% corrective mitigation strategies. The mitigation strategies for the identified risks are based on two main points: collaboration and information sharing.

Grudinschi, Sintonen and Hallikas (2014) point out that the collaboration between buyer and supplier companies has been continuously increasing not only in the private sector, but also in the public and third sectors. In this sense, Guzmán and Sierra (2012) highlight that collaboration plays an essential role in increasing the effectiveness of public procurement. In the scope of risk management in purchases, collaboration is not limited to building trust between partners (Grudinschi, Sintonen & Hallikas, 2014) and must include the identification of partners' strengths and weaknesses, the balance of inter-organizational interests, arrangements monitoring tools to obtain maximum results for buyers and suppliers.

With regard to information sharing, Grudinschi, Sintonen and Hallikas (2014) emphasize that communication is a critical factor in risk management in the processes of purchasing goods and services. In this sense, precision, openness, fluidity and frequency of communication between buyers and suppliers is one of the most important factors in the success of risk management practices in purchases (Grudinschi, Sintonen & Hallikas, 2014). Furthermore, information sharing is one of the aspects that positively boost the development of collaboration between buyers and suppliers.

Based on Chowdhury e Quaddus (2015), the vulnerability factors in the purchasing processes carried out by the public organization studied are summarized in table 4.

Table 4.
Vulnerability factors

Vulnerability Factors	**Specific Vulnerabilities**	**Risk**
Vulnerability Associated with Macroenvironmental Risks	Political instability Changes in legislation	Political changes Changes in legislation governing public procurement
Strategic Vulnerability	Integration problem and real-time information	Suppliers without the necessary documentation to qualify for the event Absence and / or communication failures Low storage capacity of the e-mail service of servers that act as a crier
Vulnerability Factors	**Specific Vulnerabilities**	**Risk**
Financial Vulnerability	Economic recession	Lack of availability of budgetary resources

Operational Vulnerability	Shortage of Workers	Insufficient human resources
	Failure in production planning, inventory management and purchasing	Market research failures Failures in the term of reference Events with deserted and/or failed items
	IT system failure and Machinery	Inconsistencies in the electronic purchasing system
Demand and Supply Vulnerability	Opportunism of suppliers	Bidding fraud by suppliers
	Demand fluctuation/uncertainty	Lack of planning by requesting organizations

Source: Adapted from Chowdhury and Quaddus (2015).

If, on the one hand, the main sources of risks in government procurement processes reside in causes internal to public organizations (people, processes and technology), on the other hand, public organization are the main holders of mitigation strategies for reduce the vulnerability found in the acquisition of goods and services. In this sense, it is never too much to emphasize the importance of an organization's internal environment and the positive or negative impact it may have on the components of corporate risk management (Coso, 2007). The impact of an ineffective internal environment can go very far and cause risks that imply financial losses, damage to the organization's public image or even its failure (Coso, 2007).

The public organization can adopt the mitigation strategies necessary to reduce the vulnerability found in government procurement in order to contribute to government procurement being carried out in accordance with the objectives that should guide the performance of the procurement function in the proactive context. These objectives include: supply the organization with a safe flow of materials and services to meet its demands, buy efficiently, maximizing the gain for the government and observing ethical standards and developing cooperative and integrated relationships with other sectors of the company.

In addition to contributing to government procurement being carried out in accordance with the objectives that should guide the performance of the purchasing function in a proactive context, the reduction of the vulnerability present in the procurement of goods and services by the Public Administration aims to provide the public organizations with the supplies needed to provide services with quality and efficiency in meeting citizens' demand, after all, the main focus of risk management in the public sector is on maintaining the provision of services to citizens (European Commission, 2010).

Considerações Finais

The research aimed to identify as sources of risk and the level of vulnerability existing in the processes of acquisition of goods and services within the scope of an agency of the state power of Minas Gerais. An exploratory, qualitative research was carried out, which used focus groups for data collection. The content of the focus groups was transcribed and analyzed in the light of content analysis.

This study is relevant, as it addressed public acquisitions that are exposed to several risks that need to be studied and managed in order to guarantee more efficient processes and, above all, to ensure that citizens' demands are met. In addition, this study contributed to the literature by creating a typology to classify the risks present in the procurement processes carried out by the public administration.

The results of this study present relevant information for the implementation of risk management in the acquisition of goods and services within the scope of the Brazilian public administration, which contributes to the reduction of vulnerability, to the improvement of the quality of services provided to citizens and to the improvement the use of public resources, especially in a context of economic crisis and serious budgetary constraints.

Although this research has contributed to provide information for the implementation of risk management by Brazilian public organizations and to fill gaps in the literature, the results of this study have limitations. In this sense, the choice of conducting a single case study over a multiple case study and the lack of a history of studies in the area made comparisons and generalizations possible more difficult and insecure, which could enrich the results of the research carried out and foster other conclusions. Another limitation presented was to analyze the phenomenon considering only the perspective of public buyers. The study sample could include other public employees, such as requesters, managers and inspectors of contracts and suppliers of goods and services for the public administration.

Therefore, it is recommended that more studies be developed, mainly with emphasis on the different levels of public management maturity and on the positioning of meeting the demands of citizens. Future research could further investigate how human resources, processes and technology influence the occurrence of risk events and how they could be managed to become risk mitigation strategies in

procurement processes in public administration. Future studies could investigate the risk management in Brazilian government purchases from the perspective of suppliers, given the perception of risk in terms of legislation, inspection and payments according to the conditions set out in the contracts and price registration minutes.

The results of the exploratory research indicate theoretical lenses that future studies can use to analyze the theme of risk management in government procurement. In this sense, Business Process Management theory can be used to understand the influence of process management on risk management in public procurement. The Resource-Based View Theory is also a possible theoretical lens to verify how human and information technology resources can be formatted and managed to become resources with distinct contributions to minimize risks, vulnerabilities and increase resilience in public procurement.

Referências

Ali, I., & Gölgeci, I. (2019). Where is supply chain resilience research heading? A systematic and co-occurrence analysis. *International Journal of Physical Distribution & Logistics Management*, 28 (15), 1236–1250. https://doi.org/10.1108/IJPDLM-02-2019-0038

Almeida, A. A. M., & Sano, H. (2017). Função compras no setor público: desafios para o alcance da celeridade dos pregões eletrônicos. *Revista de Administração Pública*, (52) 1, 89-106. http://dx.doi.org/10.1590/0034-7612164213

Amaral, H. K. do. (2006). Desenvolvimento de competências de servidores na administração pública brasileira. *Revista do Serviço Público*, 57, (4), 549-563. https://doi.org/10.21874/rsp.v57i4.211

Bahroun, M., & Harbi, S. (2015, October). Risk management in the modern retail supply chain: Lessons from a case study and literature review. In *2015 International Conference on Industrial Engineering and Systems Management (IESM)* (pp. 1161-1170). IEEE.

Barbour, R. (2009). *Grupos focais: coleção pesquisa qualitativa*.Bookman: Bookman Editora.

Bardin, L. (2011). *Análise de conteúdo*. São Paulo: Edições 70.

Brasil, Lei n° 14.133, de 01 de abril de 2021. Lei de Licitações e Contratos Administrativos. *Diário Oficial da União*. Available in: < http://www.planalto.gov.br/ ccivil_03/_ato2019-2022/2021/lei/L14133.htm>. Access on: 21 mar. 2022.

Chowdhury, M. H., & Quaddus, M. A. (2015). A multiple objective optimization based QFD approach for efficient resilient strategies to mitigate supply chain vulnerabilities: The case of garment industry of Bangladesh, *Omega*, 57, 1-61. https://doi.org/10.1016/j.omega.2015.05.016

Chowdhury, M. H., & Quaddus, M. A. (2017). Supply Chain Resilience: Conceptualization and Scale Development Using Dynamic Capability Theory. *International Journal of Production Economics*, 188 (2017), 185-204. https://doi.org/10.1016/j.ijpe.2017.03.0 20

Corrêa, H. L. (2010). *Gestão de redes de suprimento: integrando cadeias de suprimento no mundo globalizado*. São Paulo: Atlas.

Coso - Committee of Sponsoring Organizations of the Treadway Commission. (2007). *Gerenciamento de Riscos Corporativos - Estrutura Integrada*. Available in: < https://www.coso.org/documents/coso-erm-executive-summary-portuguese.pdf>. Access on: 22 mar. 2022

Di Pietro, M. S.Z. (2016). *Direito administrativo*. Rio de Janeiro: Forense.

Edmunds, H. (1999). The focus group research handbook. *The Bottom Line*.

European Commission. (2010). *Risk management in the procurement of innovation: concepts and empirical evidence in the European Union*. Luxembourg: Publications Office of the European Union.

Federal Government Transparency Portal (2021). Available in: < http://www.portaltransparencia.gov.br/>. Access on: 02 set. 2021.

Garcez, L. (2019). *Risk Management Analysis in Fiocruz's Purchasing Area*. Dissertation (Professional Masters in Politics and Science, Technology and Innovation in Health). Escola Nacional de Saúde Pública Sérgio Arouca, Rio de Janeiro, 115 p.

Gatti, B. A. (2012). *Grupo focal na pesquisa em ciências sociais e humanas*. Brasília, DF: Liber Livro.

Ghadge, A., Dani, S., & Kalawsky, R. (2012). Supply chain risk management: present and future scope. *The International Journal of Logistics Management*, 23 (3), 313-339. https://doi.org/10.1108/09574091211289200

Gordon, S. B., Zemansky, S. D., & Sekwat, A. (2000). The public purchasing profession revisited. *Journal of Public Budgeting, Accounting & Financial Management*, 12, (2), 248-27. https://doi.org/10.1108/JPBAFM-12-02-2000-B004

Grudinschi, D.,Sintonen, S., & Hallikas, J.(2014). Relationship risk perception and determinants of the collaboration fluency of buyer– supplier relationships in public service procurement. *Journal of Purchasing and Supply Management*, 20 (2), 82-91. http://dx.doi.org/10.1016/j.pursup.2014.03.004i

Guzmán, F., & Sierra,V. (2012) .Public–private collaborations: branded public services? *European Journal of Marketing*, 46(7/8), 994–1012. https://doi.org/10.1108/03090 561211230 160

Instrução Normativa N° 5, de 26 de maio de 2017. (2017). Dispõe sobre as regras e diretrizes do procedimento de contratação de serviços sob o regime de execução indireta no âmbito da Administração Pública federal direta, autárquica e fundacional. Available in: <https://www.comprasgovernamentais.gov.br/images/conteudo/ArquivosCGNOR/ IN-n-05-de-26-de-maio-de-201 7---Hiperlink. pdf>. Access on:16 jan. 2020

Jüttner, U., Peck, H., & Christopher, M. (2003). Supply chain risk management: outlining an agenda for future research. *International Journal of Logistics: Research & Applicatio ns*, 6 (4), 197-210. https://doi.org/10.1080/1367556031000162701 6

Kalvet, T., & Lember, V. (2010) Risk management in public procurement for innovation: the case of Nordic–Baltic Sea cities, Innovation: The European Journal of Social Science Research, 23 (3), 241-262. https://doi.org/10.1080/13511610.2011.553509

Kırılmaz, O., & Erol, S. (2017). A proactive approach to supply chain risk management: Shifting orders among suppliers to mitigate the supply side risks. *Journal of Purchasing and Supply Management*, *23*(1), 54-65. https://doi.org/10.1016/j.pursup .2016.04.002

Krueger, R. A. & Casey, M.A. (2014). *Focus groups: A practical guide for applied research*. Sage publications.

Mahmood, S. A. I. (2010). Public procurement and corruption in Bangladesh confronting the challenges and opportunities. *Journal of public administration and policy research*, 2, 103-111. Recovered on January 10, 2020, from, https://academicjournals.org/article /article1379505434_Mahmood.pdf

Manea, I. L., & Popa, I. A. (2010). Risk Management in Public Procurement Process. *Studies and Scientific Researches Economics Edition*, 15, 389-396. http://dx.doi.org/10.29358/sceco.v0i15.145

Manuj, I., & Mentzer, J. T. (2008). Global supply chain risk management strategies. *International Journal of Physical Distribution & Logistics Management*, 38 (3), 192-22. http://dx.doi.org/10.1108/09600030810866986

Martin, M. (2020). *Risk Management Applied to Contracting and Contractual Management Of Third-Party Services of Cleaning In A Public Education Institution*. Dissertation (Master in Administration). Universidade Federal Fluminense, Volta Redonda, 115 p.

Meirelles, H. L. (2010). *Licitação e contrato administrativo*. São Paulo: Malheiros Editores,

Ministério do Planejamento, Orçamento e Gestão. (2013). *Projeto de Desenvolvimento do Guia de Orientação Para o Gerenciamento de Riscos*. Recovered on December 20, 2019, from http://www.gespublica.gov.br/comtent/guia-de-orienta%C3%A7%3%A3o-para-o-gerenciamento-de-riscos

Mogre, R., Lindgreen, A., & Hingley M. (2017).Tracing the evolution of purchasing research: future trends and directions for purchasing practices. *Journal of Business & Industrial Marketing*, 32, (2), 251-257. http://dx.doi.org/10.1108/JBIM-01-2016-0004

Munnukka, J.,& Järvi, P. (2015). The influence of purchase-related risk perceptions on relationship commitment, *International Journal of Retail & Distribution Management*, 43, (1), 92-108. http://dx.doi.org/10.1108/IJRDM-11-2013-0202

Nagali, V., Hwang, J., Sanghera, D., Gaskins,M., Pridgen,M., Thurston,T., Mackenroth,P., Branvold,D., Scholler,P.,& Shoemaker, G. (2008). Procurement Risk Management (PRM) at Hewlett-Packard Company. *Interfaces,* 38 (1), 61-60. https://doi. org/10.1287/inte.1070.0333

Pfohl, H.C., Kohler, H., & Thomas, D. (2010). State of the art in supply chain risk management research: empirical and conceptual findings and a roadmap for the implementation in practice. *Logistics Research*, 2(1), 33–44. https://doi.org/10.1007 /s12159-010-0023-8

Powell, R. A. & Single, H.M. (1996). *Focus groups. International Journal for Quality in Health Care*, 8 (5), 499-504. https://doi.org/10.1093/intqhc/8.5.499

Secretaria do Tribunal Superior do Trabalho. (2015). *Plano de Gestão de Riscos da Secretaria do Tribunal Superior do Trabalho – Junho 2015*. Recovered on August 10, 2019, from https://juslaboris.tst.jus.br/bitstream/handle/20.500.12178/73831/2015_plano_gestao_riscos_set_tst_v1_1.pdf?sequence=6&isAllowed=y

Soares, J. (2019). *Risk Management In Public Purchasing: a study at the Paraíba State Purchasing Center*. Dissertation (Master in Public Management and International Cooperation). Universidade Federal da Paraíba, Paraíba, 142 p.

Tassabehji, R., & Moorhouse, A. (2008). The changing role of procurement: developing professional effectiveness. *Journal of Purchasing & Supply Management*, 14 (1), 55-68. https://doi.org/10.1016/j.pursup.2008.01.005

Tuncel, G., & Alpan, G. (2010). Risk assessment and management for supply chain networks: A case study. *Computers in industry*, *61*(3), 250-259. https://doi.org/10.1016/j.compind.2009.09.008

Weeserik,B. P., & Spruit, M. (2018). Improving Operational Risk Management Using Business Performance Management Technologies. *Sustainability*, 10 (3), 20 p. https://doi.org/10.3390/su10030640

Wieland, A., & Durach, C. F. (2021). Two perspectives on supply chain resilience. *Journal of Business Logistics.* Special Issue Article. https://doi.org/10.1111/jbl.122

World Economic Forum Insight Report. (2014). *Global Risks***,** Ninth Edition: 1-60.

Zsidisin , G . A . (2003b) Managerial perception of supply risk . *The Journal of Supply Chain Management* ,39 (1), 14 - 26. https://doi.org/10.1111/j.1745-493X.2003. tb00146.x

Zsidisin, G. A. & Ellram, L. M. (2003). An agency theory investigation of supply risk management . *The Journal of Supply Chain Management* 39 (3), 15 - 27. https://doi.org/10.1111/j.1745-493X.2003.tb00156.x

Zsidisin, G. A.(2003a). A grounded definition of supply risk. *Journal of Purchasing and Supply Management*, 9 (5-6), 217 - 224 . https://doi.org/10.1016/j.purs up.2003.07.002

Zsidisin, G. A., Panelli, A. & Upton , R. (2000). Purchasing organization involvement in risk assessments, contingency plans, and risk management: An exploratory study. *Supply Chain Management: An International Journal*, 5 (4), 187 – 198. https://doi.org/10.11 08/13598540010347307

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