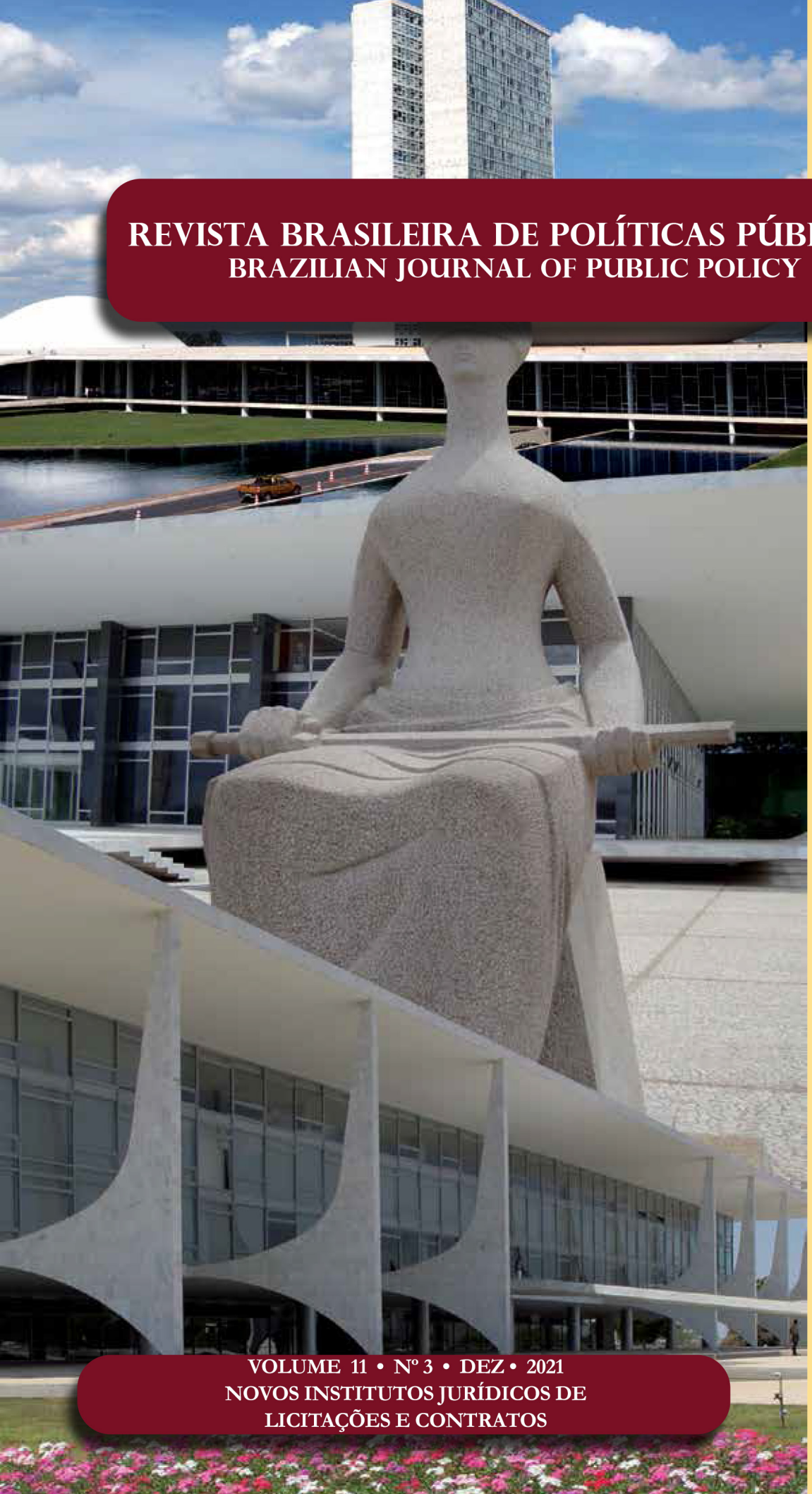

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Sumário

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Abstract

This article aims to analyze whether the integrated contracting forecasted in Law 14.133/2021 will increase the efficiency of public contracts. In integrated contracting, the basic and executive projects are prepared by the same company contracted for the execution of engineering works and services. Consequently, Public Administration must only provide a draft. The hypothesis is that the expansion of possibilities for the use of integrated contracting, forecasted in Law 14.133/2021, poses risks of reducing the efficiency of Public Administration. The hypothesis evaluated is based on bibliographic research and analysis of national and foreign legislation and based on the dialectical-inductive method (demonstrating positive and negative aspects of the modification of previous laws) comparing Brazilian and international cases in real scenarios (inductive method). Firstly, it is demonstrated when Design-Build procurements were first allowed in Brazil and how and why their uses have been amplified. Additionally, the international scenario is analyzed to determine whether the restrictions imposed by most countries were also provided for in the Brazilian legislation on integrated contracting. Subsequently, a comparative examination of various models of public procurement will be conducted to demonstrate that the choice of the contractual execution regime involves difficulties that only good and detailed planning can help to overcome. The conclusion confirms the hypothesis and defends that measures should be adopted in the planning phase with special attention to those related to the selection requirements of design and drafts, as most developed countries have already done.

Keywords: project; integrated contracting; Law n. 14.133/2021; design--build; comparative law.

Resumo

Este artigo tem como objetivo analisar se a contratação integrada prevista na Lei 14.133/2021 aumentará a eficiência dos contratos públicos. Na contratação integrada, os projetos básico e executivo são elaborados pela mesma empresa contratada para a execução das obras e serviços de engenharia. Consequentemente, a Administração Pública deve elaborar apenas um anteprojeto. A hipótese é que a ampliação das possibilidades de utilização da contratação integrada, prevista na Lei 14.133/2021, apresenta riscos de redução da eficiência da Administração Pública. A hipótese é baseada em pesquisa bibliográfica, na análise da legislação nacional e estrangeira e no método dialético-indutivo (demonstrando aspectos positivos e negativos da modificação de leis anteriores) comparando casos brasileiros e internacionais em cenários reais (método indutivo). Primeiramente, é demonstrado quando a contratação integrada foi permitida pela primeira vez no Brasil e como e por que seus usos foram ampliados. Adicionalmente, o cenário internacional é analisado para determinar se as restrições impostas pela maioria dos países foram também previstas na legislação brasileira sobre contratação integrada. Posteriormente, será realizado um exame comparativo de vários modelos de contratação pública para demonstrar que a escolha do regime de execução contratual envolve dificuldades que só um bom e detalhado planejamento pode ajudar a superar. A conclusão confirma a hipótese e defende que medidas devem ser adotadas na fase de planejamento com atenção especial àquelas relacionadas aos requisitos de seleção de anteprojetos e projetos, a exemplo do que fizeram a maioria dos países desenvolvidos.

Palavras-chave: projeto; contratação integrada; Lei n. 14.133/2021; design-build; direito comparado.

1 Introduction

Modern structures tend to be so complex that their projects require specialized companies with expertise in several fields to avoid further problems during the unleashing of the enterprise.

However, considering roman structures, or even structures made by the time of ancient cathedrals, might put the idea of rigorous projects as a necessary condition for good buildings into perspective. Neither Romans nor catholic architects had foundation studies or computer landscape analysis that are extensively used recently. Nowadays, it might seem incomprehensive considering the amount of data necessary to conceive complex structures like airplanes or submarines.

These two points seem to result in an inherent paradox. How could Roman structures stand for so long without complex projects using severe calculus and just using their previous construction practices learned through centuries in the work field? That is precisely why good knowledge in engineering, without any method in the area, may not guarantee further well-done achievements. That is why companies tend to mix senior engineers with trainees in complex structures works. So, traditionally, companies share the idea that it is essential to combine experience with knowledge to avoid unforeseen problems.

This same paradox can also be applied to public procurement procedures. Thus, the question remains: should the Public Administration use the expertise of construction companies in the Project-Construction bids, or should it segregate the tasks? In other words: should Public Administration first select the best project for the work to specify the object it intends to build, and only after this stage might it contract a specific company to execute it, or instead should it delegate both assignments and jobs to the same company?

This issue has been the subject of several discussions in academia and among specialists. For some authors, the project tends to be an essential part of any public work. Those who share this point of view argue that before any public enterprise, firstly, should the Public Administration contract the best possible project with the most detailed data to avoid delays. Only after that shall it begin the preparatory tasks.

This method of acquiring public works is called traditional design-bid-build (D.B.B.). In this case, the Public Administration contracts only the project with its essential specifications that an award – fixed price – shall be delivered to the best proposal of a project combining both cost and practical solutions offered to Public Administration; only after this step shall Public Administration contract the work (enterprise) itself.

However, there are other ways for the Public Administration to contract public works, called design--build (D.B.) or turnkey. Both were initially conceived for more complex assignments. Additionally, both are based on the idea that the experience of previous builders can allow the Public Administration to save time and prevent further errors in the field of work. For this reason, in these two models, the company in charge of the general project must also conceive its execution.

The difference between design-build and turnkey is that this latter model, also called Engineering, Procurement and Construction (E.P.C.) or Lump sum, tends to be more comprehensive as a model of acquirement that the contractor is not only responsible for preparing and developing the primary and executive projects, but also for carrying out engineering works and services, along with all other necessary measures for the work to be delivered in its full conditions to be used, such as the supply of materials and pieces of equipment as well as their assembly and start-up.[1] [2]

Apart from the previous forecast, this study will show, through a dialectic inductive methodology (showing positive and negative aspects of the published modifications in recent Brazilian laws along with comparative studies with similar disposals in several other legislative systems) that countries with a high degree of maturity in public procurements have opted to adopt the design-build model only when they decide to leave the responsibility for preparing the basic and executive projects to the contractor.

On the other hand, Brazil has adopted, in the law n. 12.462/2011, the turnkey model without any exigence in the previous planning stage or even detailed drafts requirements adopted in most developed countries in symmetry to the understandings of the Federal Court of Accounts on the theme, then resulting in various risks to the public sector (hypothesis raised) regarding scarce public resources.[3]

In the case of Brazil, the frequent precariousness of the planning phase of most public works contracts has been identified as the main reason for unjustified contractual amendments, especially those concerning the preparation of projects, whose deficiencies[4] have been responsible for so many misfortunes during the progress of the works.

Integrated contracting was first forecasted (R.D.C. law n. 12.462/2011) in Brazilian legislation as an instrument to increase the efficiency of public procurements because of the main idea that the Brazilian Public Administration might not have been prepared for developing high-quality projects, then why should not the contractor assign the task of designing the project and therefore assuming additional risk on its own, such as the design-build model forecasted in U.S. legislation?

However, since the enactment of Law 12.462/2011 (which introduced the Differentiated Contracting Regime – R.D.C. – and consequently regulated the use of integrated contracting for Public Administration

[1] A lump sum is a single payment of money, as opposed to a series of payments made over time (such as an annuity)

[2] SNIDER, W. J.; SEIDLE, N. T.; BAYSTON, D. M. *Investment basics and beyond*. 3. ed. London: Paperback, 1998. p. 240-246 Available at: https://www.gettextbooks.com/isbn/9780899820606/. Access in: 29 set. 2021.

[3] BRAZIL. Federal Court of Accounts. Plenary. Judgment case n. 2.246/2012. Audit Report. Works of the Baixada Fluminense Thermal Power Plant. Failure to provide full information requested by the supervisory team. No proper limitation in contract of situations eligible for additives. Considerations on the budget of the works. Setting the deadline for submission of missing documents. Follow-up processes notice to evaluate possible additives. Extraction of a copy of the files to subsidy the instruction of TC 006.810/2011-0. Minister Rapporteur: Ana Arraes. Judged in 08.22.2012. *Brazilian Union Official Diary*, nov. 2012. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A2246%2520ANOACORDAO%253A2012%2520COLEGIADO%253A%2522Plen%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520. Access in: 20 set. 2021.

[4] BAETA, A. P. *As vantagens dos concursos para a contratação de projetos*. Available at: https://concursosdeprojeto.org/2014/12/10/as_vantagens_dos_concursos_para_a_contratacao_de_projetos/. Access in: 25 set. 2021.

under certain specific circumstances), empirical studies (demonstrated in item two and three of this article) have shown that the contractual execution regimes (Design-Build methods) have not produced the results expected.

Apart from these findings, the recent Brazilian Law n. 14.133/2021 substantially expanded the possibilities of using integrated contracting and therefore has removed several restrictions and conditions imposed by the R.D.C. previous legislation.

Thus, there are justified concerns on the effectiveness and efficiency in Brazilian public procurement with integrated contracting in the ways prescribed by Law 14.133/2021 as the problems repeatedly identified in this contractual performance regime have not yet been resolved. Therefore, the results produced by the new legislation might increase frustrations with a probable waste of scarce public resources (which is the central theses of this article).

For this reason, this article aims to analyze whether the integrated contracting provided in Law 14.133/2021 will increase the efficiency of public contracts.

The hypothesis and central thesis are that the expansion of possibilities for integrated contracting, forecasted in Law 14.133/2021, poses risks of reducing the efficiency of Public Administration.

The hypothesis test is based on bibliographic research and analysis of national and foreign legislation and is based on the dialectical-inductive method comparing Brazilian and international cases in real scenarios.

Thus, at first, a critical analysis of the Brazilian legislative evolution regarding integrated contracting will be presented, as well as the empirical work carried out both by the doctrine and by public bodies, with particular attention to the decisions of the Federal Court of Accounts to whom it has been given constitutional attributions for controlling Public Administration biddings and contracts.

Next, the international scenario on the subject will be examined when the analysis of foreign legislation will be compared to the Brazilian one.

Subsequently, a comparative examination of various models of public procurement will be carried out to demonstrate that the choice of the contractual execution regime involves difficulties that only good planning can help to overcome.

The conclusion is that the significant expansion of the possibilities of using the integrated contracting by Law 14.133/2021 poses severe risks of reducing the efficiency of public contracts and defends that measures should be adopted in the planning phase with particular attention to those related to the design of selection requirements, as most developed countries have already done.

2 The process of the change of the previous law allowing the use of design-build in recent brazilian procurement

Integrated contracting was not initially provided for the General Bidding Law, Law 8.666/1993, which establishes general rules on bidding and administrative contracts related to works services, including advertising, purchases, disposals, and leases within the scope of the Powers of the Union, the States, the Federal District, and the Municipalities, as well as their foundations, government corporations (autarchies), and state-owned companies.

The National Congress, at the time of approval of this Law, was concerned about the corruption scandals that resulted in the impeachment of the President of the Republic. For this reason, it decided to create stricter and more formal rules for hiring by the Public Administration. Therefore, art. 10 of Law 8.666/1993, when listing the regimes for the indirect contractual execution of works and services, did not

mention integrated contracting, but only the following: lump sum contract; contract for unit price; assignment; and full-time employment.

Although Law 8.666/1993 expressly states, in the sole paragraph of its art. 1, that its legislative disposals were applying to all state-owned companies, the Federal Court of Accounts, in 1998, came to understand that, concerning state-owned companies that exploit economic activity, Law 8.666/1993 should be applied only to their secondary activities.[5]

Consequently, according to the specific Law forecasted in art. 173, § 1, of the Federal Constitution, a specific law would regulate the specific case of public-private companies' hirings and was also supposed to regulate the specific case of mixed capital companies' acquisitions but it still had not yet been published.

According to this law, public companies and private-public companies would not need to comply with the rigorous demands of Law 8.666/1993 regarding their core activity, but only to the major principles of bids. This is because state-owned companies operate in a competitive regime so they cannot have privileges or disadvantages, except those related to the social ends that previously had determined their specific reasons for their singular creation.

Although this was controversial, this understanding was overcome with the approval of Law 13.303/2016, edited in compliance with art. 173, § 1 of the Federal Constitution, which provides the legal status of state-owned companies, including their public procurement. Moreover, in a judgment concluded in 2021, as the T.C.U. had already done, Federal Supreme Court also understood that Law 8.666/1993 did not reach the core activity of state-owned companies.[6]

In 1997, the National Congress approved Law 9.478/1997, which deals, among other matters, with breaking the monopoly of oil exploration by Petrobrás. The art. 67 of the Law provided that contracts entered into by Petrobras, for the acquisition of goods and services would be preceded by a simplified bidding procedure, which would be defined in a decree of the President of the Republic.

It was, therefore, based on art. 67 of Law 9.478/1997 that the Presidency of the Republic edited Federal Decree 2.745/1998 which approved the Regulation of the Simplified Bidding Procedure of Petróleo Bra-

[5] sep. 1998. Subsequently, the TCU reiterated this understanding, in a consultation process, which has a normative character: BRAZIL. Federal Court of Accounts. Plenary. Judgment case n. 1.390/2004. Consultation formulated by the Minister of State regarding the legality of the exemption from bidding by a mixed capital company that explores economic activity when contracting goods and services related to its core activity. Fulfillment of admissibility requirements. Knowledge. Jurisprudence consolidated in this Court in the sense of the possibility of public companies, mixed capital companies, and their subsidiaries that explore economic activity to waive the use of bidding for the contracting of goods and services that constitute their core activity, until the law to referred to in art. 173, § 1, of the Federal Constitution, only in cases where the bidding document constitutes an insurmountable obstacle to its business activity. Forward a copy of this resolution to the consultant. Substitute Minister Rapporteur Marcos Bemquerer Costa. Judged in 09.15.2004. *Brazilian Union Official Diary,* sep. .2004. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A1390%2520ANOACORDAO%253A2004%2520COLEGIADO%253A%2522Pleno%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520. Access in: 20 set. 2021.

[6] BRAZIL. Federal Supreme Court. Full Court. Extraordinary Appeal 441.280. SUMMARY Extraordinary resource. Maritime transport contract entered into by Petrobras. Decision refuting the intended nullity of the contracting party selection procedure. Procedure not preceded by bidding. Reform claim. Condemnation of the company in damages. Compensation that does not find constitutional support. Mixed capital company that operates in the market for commercial exploitation of goods and services. Submission, at the time of the facts, to the dictates of Decree No. 2.745/98. Contract regularly concluded. Partial knowledge of the resource. No provision. 1. The contested decision was based on the peaceful jurisprudence of the Federal Supreme Court that, at the time of the facts, the defendant was not subject to the predictions of the Bidding Law. 2. This legal regime, moreover, would make it unfeasible for its active participation in the competitive market segment in which it operated, including internationally. 3. The agreement was, therefore, regularly concluded, in the light of the legislation then applicable. The annulment claim was correctly refuted. The claim for damages, cumulatively deducted, does not convey constitutional matters, making its knowledge unfeasible. 4. Extraordinary appeal which is partially known and which, as to that part, is dismissed. Minister Rapporteur Dias Toffoli. Judged in virtual session from 02.26.2021 to 03.05.2021. Electronic Journal of Justice, may 2021. Available at: https://jurisprudencia.stf.jus.br/pages/search?classeNumeroIncidente=%22RE%20441280%22&base=acordaos&sinonimo=true&plural=true&page=1&pageSize=10&sort=_score&sortBy=desc&isAdvanced=true. Access in: 20 set. 2021.

sileiro S.A. – Petrobrás –, and it was this Petrobrás regulation that inserted the integrated contract into the Brazilian legal system, whose item 1.9 provided as follows:

> Whenever economically recommendable, PETROBRÁS may use integrated contracting, comprising basic design and detailing works and services and assembly, testing, pre-operation, and all other necessary and sufficient operations for the final delivery of the object, with the specified strength and security procedures required in the specific case.

In several decisions, the Federal Court of Accounts considered Federal Decree 2.745/1998 unconstitutional, as it understood that the specific Law referred to in art. 173, § 1, of the Federal Constitution was Law in the formal and material sense so that it could not be replaced by a decree issued by the President of the Republic. For this reason, the T.C.U. reiterated its understanding that, although state-owned companies were not required to comply with Law 8.666/1993 concerning their core activities, they should apply the principles and leading ideas of Law 8.666/1993 to contracts related to their secondary activities as well.[7]

Several writs of mandamus were prosecuted against these T.C.U.'s decisions in the Federal Supreme Court, which, like a preliminary injunction, suspended the findings of the Federal Court of Accounts until the merits of the lawsuits mentioned above were judged.[8]

However, after the approval of Law 13.303/2016, edited in compliance with art. 173, § 1, of the Federal Constitution, which provides the legal basis for status of state-owned companies, including their specific legal bidding public procurements provisions, the Federal Supreme Court came to understand that the writs above of mandamus lost their purpose, since Law 13.303/2016 repealed art. 67 of Law 9.478/1997, which was the basis for the validity of Decree 2.745/1998.[9] So, after the removal of art 67 from juridical world, the debate lost their object in the Supreme Court due to the new legal provision provided approved.

After Federal Decree 2745/1998, which approved the Regulation of the Simplified Bidding Procedure of Petróleo Brasileiro S.A. – Petrobras – the possibility of integrated contracting procedures was expanded by providing the contractual execution regimes referred in art. 8 of Law 12.462/2011, which instituted the Differentiated Regime for Public Contracting (R.D.C.).

Initially, this method of public acquisition was only applied for the necessary contracts to carry out the 2016's Olympic and Paralympic Games (item I) of the Confederations Cup of the International Federation of Football Association - Fifa 2013 and the FIFA World Cup 2014 (item II) – as well as for infrastructure

[7] Leading case: BRAZIL. Federal Court of Accounts. Plenary. Judgment case n. 663/2002. Audit Report carried out in the area of bids and contracts. Considerations about art. 67 of Law n. 9.478/97 and Decree n. 2.745/98, which approved the Regulation of the Simplified Bidding Procedure for Petrobras. Unconstitutionality of norms. Communication to Petrobras. Existence of other irregularities. determinations. Conducting hearings. Shipment of copies. Minister Rapporteur Ubiratan Aguiar. Judged in 06.19.2002. *Brazilian Union Official Diary*, aug. 2002. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A663%2520ANOACORDAO%253A2002%2520COLEGIADO%253A%2522Plen%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520. Access in: 20 set. 2021.

[8] Leading case: BRAZIL. Federal Supreme Court. Writ of Mandamus 25.888. Minister Rapporteur Gilmar Mendes. Precautionary monocratic decision of 03.22.2006. *Journal of Justic,* may 2021.

[9] Leading case: BRAZIL. Federal Supreme Court. (First Class). Regimental Appeal in Writ of Mandamus 27.796. Summary: Constitutional and administrative. internal interlocutory injury in the writ of safety. petrobras. simplified bidding procedure. no application. determination of the federal court of acconts. edition of law 13.303/2016 (state-own law). revocation of art. 67 of law 9.478/1997. validity grounds of decree 2.745/1998, which approved petrobras' simplified bidding procedure. supervenient loss of purpose. interlocutory appeal which is denied. 1. Law 13.303/2016 (State-owned Companies Law) revoked art. 67 of Law 9.478/1997, basis of validity of Decree 2.745/1998, which approved the Regulation of the Simplified Bidding Procedure of Petrobras. 2. As in the present writ of mandamus, what, in the end, the petitioner intends is the annulment of the judgment of the Federal Court of Accounts, at the point at which it prohibited the use of the aforementioned Simplified Bidding Procedure, it is evident, therefore, that the supervening loss of the object of this petition. 3. Appeal dismissed. Minister Rapporteur Alexandre de Moraes. Judged on 03.29.2019. *Electronic Journal of Justice*, may 2019. Available at: https://jurisprudencia.stf.jus.br/pages/search?classeNumeroIncidente=%22MS%2027796%22&base=acordaos&sinonimo=true&plural=true&page=1&pageSize=10&sort=_score&sortBy=desc&isAdvanced=true. Access in: 20 set. 2021. In the same vein: BRAZIL. Federal Supreme Court. Writ of Mandamus 29.326. Minister Rapporteur Ricardo Lewandowski. Monocratic decision of merit 06.28.2019. *Electronic Journal of Justice, jan. 2019*. Available at: https://portal.stf.jus.br/processos/downloadPeca.asp?id=15340525988&ext=.pdf. Access in: 20 set. 2021.

works and contracting services for airports in capitals of States of the Brazilian Federation that were located more than 350 km away from the cities in which the events mentioned had occurred (item III).

However, successive laws have been approved in the following years after the R.D.C. creation, inserting other authoritative possibilities for its uses in the previously mentioned article.

Therefore, eight new items had contemplated other hypotheses of uses of the integrated contracting procedures on bids and contracts necessary for the following accomplishments such as the actions required for the Growth Acceleration Program (P.A.C.) (item IV); engineering works and services within the scope of the Unified Health System – SUS – (item V); engineering works and services for the construction, expansion and renovation and administration of penal establishments and socio-educational service units (item VI); actions in the scope of public security (article VII); engineering works and services related to improvements in urban mobility or expansion of logistics infrastructure (item VIII); as well as those regarding contracts referred in art. 47-A (item IX), along with actions in bodies and entities dedicated to science, technology, and innovation (item X); and its use was also applied to engineering works and services within the scope of public education and research, science and technology systems (§ 3).

Despite the broadening of the possibilities for using integrated contracting, art. 9 of the R.D.C. Law (Law 12.462/2011) established that the public manager could only choose this contractual execution regime if this choice was technically and economically justified and indeed provided at least one of the following conditions mentioned criteria: I - technological innovation or technique; II - the possibility of execution with different methodologies; or III – in the case of performance within restricted domain technologies overseen in the current market.

Similar conditions were included in Law 13.303/2016 (Statute of State-owned Companies), whose item VI of art. 43 authorizes integrated contracting procurement only in cases of engineering works or services that had to be intellectual and technologically predominantly or innovative methods regarding the bidding object or at least ought to have been performed with different methodologies or technologies within restricted domain overseen in the current market.

On 04.01.2021, Law 14.133/2021 came into force, which, according to item II of its art. 193, will repeal, after two years from the date of its publication, Law 8.666/1993, Law 10.520/2002 (Specific Bidding Law), and Law 12.462/2011 (R.D.C. Law).

This means that, during these two years, the public administrator had been able to choose between conducting public contracts by the rules of Law 14.133/2021 or following the rules of the laws mentioned above, which, after this period, would be revoked. However, the public administrator cannot combine these laws to use a part of one and another part of another.

Law 14.133/2021 establishes general rules for bidding and contracting for direct, autonomous, and foundational Public Administrations of the Union, States, Federal District, and Municipalities, but does not apply to public companies and mixed capital companies or their subsidiaries, which continue to be governed by Law 13.303/2016 as they remain submitted to rules of current market and then require specific legislation to their own singular cases.

Although Law 14.133/2021 repeats several rules as mentioned earlier, it also contains numerous novelties. Regarding integrated contracting, the new Law not only repeats some regulations from the R.D.C. Law but also introduces several innovations.

The art. 46 of the new Law included integrated contracting as part of the list of regimes for the indirect contractual execution of works and services, which also have the following commands: contract for a unit price; lump sum contract; integral contract; contracting by task; semi-integrated contracting; and provision and provision of associated service.

In item XXXII of art. 6, Law 14.133/2021 came to define integrated contracting procedures as the con-

tracting regime for engineering works and services in which the contracted parties shall be responsible for preparing and developing the primary and executive projects, along with performing engineering works, and services, supplying goods and provide extraordinary services and carry out assembly, testing, pre-operation, and other necessary facilities and sufficient operations conditions for the final delivery of the object.

It can be inferred from the predictions of Law 14.133/2021 that there was significant expansion within the possibilities for using integrated contracting procurements which, nowadays, is forecasted without the previous requirements predicted in the last Law – R.D.C–. which was much more rigorous. In summary, it is possible to highlight at least four necessary conditions to use this bidding procedure extracted from Law 14.133/2021 concerning integrated contracting.

As clearly demonstrated, there was also a substantial expansion of the possibilities of using this contracting regime: first, in the recent Law, there is no express obligation for the public administrator to justify, technically and economically, his choice of integrated contracting; second, there is no longer a need to attend the conditions imposed by the R.D.C.; third, the use of integrated contracting procurements was expanded to states, federal district and municipalities; four: the use of integrated contracting does not depend any longer on the contracting value amount, as a consequence of the Republic President's veto for the provision that previously fixed at least a minimum value for its use in further public procurement procedures.[10]

However, although it does not appear in item XXXII of art. 6 of Law 14.133/2021, the public administrator continues to have the duty to justify, technically and economically, his choice of integrated contracting, to respect the principles of motivation and economy provided in art. 5 of the previous Law mentioned (14.133/2021) (integrated hermeneutics).

Moreover, this requirement had still been applied not only to this specific execution regime for public works but also had remained applicable for any cases forecasted in art. 46 of the recently approved Law, which, in addition to integrating contracting procurements, were still applied in each public procurement procedure that uses either of these criteria to select a further general provider: lump sum contract; integral contract; contracting by task; semi-integrated contracting; and provision and provision of associated service.

Hence, any formality is no longer required. As Marçal Justen Filho correctly observes, several issues must be considered to decide the most appropriate contractual execution regime for each case, such as costs and values and that might require special attention over eventual arising prices to be charged by the contracted company as well as the domain of knowledge of the Administration Public on the object to be tendered. It is also necessary to consider the assessment of technical competence for the preparation of the primary and executive projects, the risks regarding the result sought, and the intensity and form of control of the contractual execution in each specific case.[11]

Therefore, the choice of the contractual execution regime is not an act that exempts the public administrator from presenting the necessary justifications. For this reason, in the words of Jessé Torres Pereira Junior and Marinês Restelatto Dotti, integrated contracting should only be chosen when its superiority over other contractual performance regimes is demonstrated by public managers whose non-observance might result in a penalty of violation of the principle of efficiency.[12]

The Federal Court of Accounts also understands that the option for the integrated contracting regime based on item II of art. 9 of Law 12.462/2011 must also be sustained on objective studies that justify its technical and economic uses and has to consider the expectation of advantages in terms of competitiveness,

[10] Veto in the Message nº 118/2021. Available at: http://www.planalto.gov.br/ccivil_03/_ato2019-2022/2021/Msg/VEP/VEP-118.htm. Access in: 28 set. 2021.

[11] JUSTEN FILHO, M. *Comentários à lei de licitações e contratações administrativas*: lei 14.133/2021. São Paulo: Thomson Reuters Brazil, 2021. p. 586-588.

[12] PEREIRA JUNIOR, J. T.; DOTTI, M. R. *Regime de contratação integrada*: vinculante ou discricionário? Revista do Tribunal de Contas da União, Brasília, n. 142, p. 60, maio/dez. 2018

duration, price, and quality concerning other execution regimes, especially the global price contract and, among other aspects, whenever applicable, the international practice for the same type of work, with no generic justifications relevant to any other possibilities available.[13]

Although this understanding of the T.C.U. was expressed during the period of the validity of R.D.C., its central ideas remain applicable to Law 14.133/2021, given the identity of matters at this point, as integrated contracting continues to be one of the various contractual execution regimes provided for in the legislation, either the previous one or Law 14.133/2021. For this reason, the public administrator, when choosing one of these regimes, must demonstrate the technical and economic reasons that justify his choice.

Besides, there is still a risk of encouraging laziness and self-indulgence in public contracting. Compared to other execution regimes, integrated hiring shifts efforts related to the preparation of primary and executive projects to the acquired company, leaving only the draft under the responsibility of the administration.

Thus, the minor effort by the Public Administration at this stage cannot serve as the sole decision criteria for the manager to select it, as the public manager must previously demonstrate that, in the circumstances overseen in each case, the integrated contractor shall be the best option to serve the public interests, both from technical and economic perspective combined altogether.

On the other hand, as previously demonstrated, Law 14.133/2021 does not require compliance with the conditions imposed by the R.D.C., as well as it expanded the use of integrated contracting to states, federal districts, and municipalities and did not set a minimum value for integrated contracting. Thus, it can be assumed that the legislator believed that the flexibility and expansion of integrated contracting would increase the efficiency of public contracts. Interestingly, the legislator also had this same belief when he decided to approve the R.D.C., whose § 1 of art. 1 of Law 12,462/2011 established efficiency as one of its objectives.

However, empirical studies have shown that, in practice, the result of using integrated contracting has not met the expectations it is supposed to. In an audit carried out at the National Department of Transport Infrastructure (DNIT) to evaluate the use of integrated contracting, T.C.U. found out that 79% of the projects inspected had irregularities in the preliminary project, highlighting the insufficiency or inadequacy of its elements for duty characterizing the object of contracting and that 64% of the audited projects had irregularities in the bidding procedure, such as the lack of assumptions for the use of integrated contracting or the technique and price regime.[14]

The Union of Architecture and Engineering (SINAENCO) and the Council of Architecture and Urbanism of Brazil (CAU/BR) reached the same conclusion. They analyzed 251 bids conducted by DNIT, using the R.D.C. previous regime, among the years 2012 and 2014. The research concluded that 36% of the cases studied were carried out under the integrated contracting rule. As a result, the remaining 64% cases were processed by the other contractual execution regimes provided in the R.D.C. method, requiring complex projects before contracting the work itself in separated bidding procedures.[15]

[13] BRAZIL. Federal Court of Accounts Plenary. Judgment case n. 1.388/2016. Audit. Dredging works in the Porto of Rio Grande/RS have not yet started. Examination of the bidding notice. Identification of failures that were corrected by the audited unit. Unjustified adoption of the integrated contracting regime. Weakness in the analysis of the bidding basis budget. Determinations. Recommendations. Minister Rapporteur Ana Arraes. Judged in 06.01.2016. *Brazilian Union Official Diary*, sep. 2016. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A1388%2520ANOACORDAO%253A2016%2520COLEGIADO%253A%2522Plen%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520. Access in: 20 set. 2021.

[14] BRAZIL. Federal Court of Accounts (Plenary). Judgment case n. 306/2017. Request by the National Congress. Evaluation of the results of the introduction, in Public Administration, of the integrated procurement figure, under the differentiated procurement regime (RDC). Study carried out from DNIT's bidding. Considerations about the relevant limitations that impacted the results of this work. Request fully answered. Archiving. Minister Rapporteur Bruno Dantas. Judged in 02.22.2017. *Brazilian Union official Diary*, dez. 2017. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A306%2520ANOACORDAO%253A2017%2520COLEGIADO%253A%2522Plen%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520 Access in: 20 set. 2021.

[15] CONSELHO DE ARQUITETURA E URBANISMO NO BRASIL. *Dossiê atualizado sobre a ineficiência da contratação integrada no*

This study concluded that approximately 34.3% of the bids did not result in contracts for assorted reasons such as cancellation, suspension, and deserted processes, among many others. From this percentage, 40.5%, corresponds to bids that adopted the integrated contracting regime, while the other rules accounted for 31.1%. In addition, it was found that the average period between the date of publication of the notices and the date of signature of the contracts in the bids that adopted the integrated contracting was 252 days, against 199 days for the other regimes.

The Chamber of Deputies also conducted a study on the integrated contract. Therefore, it analyzed 179 bids conducted by Dnit, in Brasília, from 08.29.2012 to 04.29.2015. The study concluded that integrated contracting does not make contracting more agile because, although the internal procedures of the Public Administration consume less time, the acquired company uses much more time to prepare the basic and executive projects. Thus, in the end, the total time used before the start of the engineering work is more significant than that used in other contractual execution regimes.[16]

In addition, the study also concluded that the difference in prices offered between the company that won the bid and the fifth place is much greater than in the other bids. The study concludes that this price difference reveals that the preliminary project prepared by the Public Administration has not been sufficient to clarify to the companies about the characteristics of the engineering work to be contracted. Therefore, each company offers its price based on its understanding of the draft. In the end, the study argues that integrated contracting should no longer be used in Brazil.[17]

The Office of the Comptroller General, in turn, also analyzed the integrated contracting used by the DNIT between 2012 and 2014 and concluded that, in this contractual execution regime, there are a smaller number of companies participating in the bidding, that is, less disputed than in other regimes.

Regarding financial savings, the C.G.U. study found that the final cost of the work in integrated contracts is, on average, 6.9% and 7.5% higher than the global price and unit price regimes, respectively. And, regarding the efficiency of contracting, the study concluded that, due to failures in the planning phase, integrated hiring did not provide beneficial results for the population in a shorter time than other contractual execution regimes.[18]

Regarding the significant expansion of the possibility of using the contracting integrated by States, Federal Districts, and Municipalities, the low level of governance of these subnational entities should be a reason for great concern regarding the success of this initiative. This same concern was expressed by the Federal Court of Accounts, which, in an audit carried out to prepare a broad diagnosis of paralyzed works in the country financed by federal funds, found that subnational entities have profound deficiencies in the conduct of public works, which is why the court had recommended to the Ministry of Economy that, altogether with other ministries, that managers who deal with resources for public works should take steps so as to promote initiatives to develop the institutional capacity of subnational entities to better deal with this debt of knowledge.[19]

Brazil. 2014. Available at: http://www.caubr.gov.br/dossie-comprova-ineficacia-da-contratacao-integrada-no-dnit. Access in: 20 set. 2021.

[16] BRAZIL. Chamber of Deputies. *Technical Note 1/2015*. Budget consulting and financial inspection. Available at: http://www2.camara.leg.br/orcamento-da-uniao/estudos/2015/nt21_2015. Access in: 20 set. 2021.

[17] BRAZIL. Chamber of Deputies. *Technical Note 1/2015*. Budget consulting and financial inspection. Available at: http://www2.camara.leg.br/orcamento-da-uniao/estudos/2015/nt21_2015. Access in: 20 set. 2021.

[18] BRAZIL. Ministry of Transparency, Inspection, and Office of the Comptroller General. *Audit Report O.S. n. 201505075*. Available at: http://auditoria.cgu.gov.br/public/relatorio/consultar.jsf?rel=9107. Access in: 20 set. 2021.

[19] BRAZIL. Federal Court of Accounts (Plenary). Judgment case n. 1.079/2019. Diagnosis of stop works. Identification of main causes and opportunities for improvement. Recommendations. Monitoring. Minister Rapporteur Vital do Rêgo. Judged on May 15, 2019. *Brazilian Union official Diary,* may 2019. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A1079%2520ANOACORDAO%253A2019%2520COLEGIADO%253A%2522Plen%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520. Access in: 20 set. 2021.

If, on the one hand, Law 14.133/2021 expanded the possibilities for using integrated contracting, on the other hand, it had better specify the elements that ought to be included in the draft compared to the previous redaction of R.D.C. So, according to item I of § 2 of art. 9 of R.D.C. redaction, it required the engineering draft to include the technical documents to enable the characterization of the work or service, including, at least:

> a) the demonstration and justification of the needs program, the global vision of the investments, and the definitions regarding the desired level of service.
>
> b) the conditions of solidity, safety, durability, and delivery period, subject to the predictions of the caput and § 1 of art. 6 of this Law.
>
> c) the aesthetics of the architectural project; and
>
> d) the adequacy parameters to the public interest, the economy in use, ease of execution, environmental impacts, and accessibility.

Law 14.133/2021, in item XXIV of art. 6, in turn, began to require the following elements, whose innovations are contained in the letter's "f" to "j":

> a) demonstration and justification of the needs program, demand assessment of the target audience, technical-economic-social motivation of the enterprise, global vision of investments, and definitions related to the desired level of service.
>
> b) conditions of solidity, safety, and durability.
>
> c) delivery time.
>
> d) aesthetics of the architectural design, geometric layout, or design of the influence area, whenever applicable.
>
> e) parameters of adequacy to the public interest, economy of use, ease of execution, environmental impact, and accessibility.
>
> f) proposal for the design of the work or engineering service.
>
> g) previous projects or preliminary studies that supported the proposed design.
>
> h) topographic and cadastral survey.
>
> i) survey opinions.
>
> j) descriptive memorial of the building elements, construction components, and construction materials to establish minimum standards for contracting.

At this point, Law 14.133/2021 brought an important innovation by expressly requiring a more significant number of elements that must be included in the draft of regarding integrated contracting, so the draft plays a crucial role in the current regime, as it is the central piece to serve as a parameter for the realization of the basic project and the executive project, both under the responsibility of the contracted company.

As Hamilton Bonatto observes, integrated contracting is an execution regime in which goals are measured by the results achieved. Thus, that is it is up to the contractor to choose how it will seek to achieve the result expected by the Public Administration, differently, therefore, from what currently happens with other contractual performance regimes, whose obligations are in terms of means, in other words, it is up to the contracted company to execute the contract under time, and within specifications that Public Administration had previously designed in its the primary and executive projects.[20]

Thus, as integrated contracting is an obligation of result granting greater freedom to the enterprise, the draft assumes decisive relevance for the success or failure of the contract, as it is the leading technical piece that outlines the possibilities and limits of the company contracted for the execution of the agreement, as

[20] BONATTO, H. O conteúdo do anteprojeto de engenharia no regime de contratação integrada. *Revista Jurídica da Procuradoria-Geral do Estado do Paraná*, Curitiba, n. 7, p. 314, 2016.

well as providing the guidelines to be observed in the preparation of the primary and executive projects.

The issue is susceptible to the Brazilian reality, marked by the recognized fragility of its projects, as the Federal Court of Accounts had repeatedly found, in the sense that the flaws in the planning phase of the bidding, those related to the preparation of the draft and the essential and executive projects, have been one of the leading causes of stoppage of public works.[21]

Precisely as a result of these weaknesses, the Federal Court of Accounts, attempting to contribute to the improvements of the planning phase and, in particular, for the preparation and evaluation of projects, recommended to the Ministry of Economy that, altogether with the other ministries which manage resources for public works, that attitudes should be made considering improvements of tasks, that sought to promote the holding of project competitions, or other contracting procedures in which the technical qualification of the object might be better viewed as a criterion of choice measuring precisely the quality of the products delivered later.[22]

The recommendation by the Federal Court of Accounts was motivated by doctrinal work in which André Pachioni Baeta argues that the competition is the best way to select a project because, among other reasons, it reduces the degree of uncertainty about the later stages of contracting, considering that the parameters on which the work will be carried that had been previously established and then avoiding further misfortunes.

That way, there will be no increase in costs. The author also emphasizes that engineers and architects select the project with high knowledge on the subject, demonstrating the competition's advantage over the other options.[23]

Law 14.133/2021, in § 3 of art. 22, brings another requirement: the invitation to bid must include a risk allocation matrix between the contracting and the contracted parts in integrated contracting procedures. In the same direction, § 4 requires the valuation of risks arising from facts supervening causalities.

Consequently, the eventual causalities associated with the choice of the basic design solution adopted by the contractor must be allocated in its risk matrix to assume its further and total responsibility.

Although there has been some innovation in Law 14.133/2021, the use of risk matrix is not essentially new, as seen in § 5 of its art. 9 of R.D.C., which shows that previous legislation had already forecasted the possibility of drawing up a risk allocation matrix between the Public Administration and the contractor, which, in these cases, could give rise to the forecasted risk rate compatible with the object of the bidding and the contingencies attributed to the contractor, according to the methodology predefined by the contracting entity and therefore anticipating any eventuality that might occur.

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[21] BRAZIL. Federal Court of Accounts. Plenary. Judgment case n. 1.328/2020. Monitoring of judgment 1.079/2019-tcu-plenary. Plan for the launch of the general register of works for 1/1/2021. Positive initiatives for the information and centralization of information on works execution. Absence of predictions to mitigate risks of deficiencies of projects as a cause of reaction. Efforts to improve the management of federal resources managed through voluntary transfers. Need to include homogeneous information about the stop of works in the large register to be implemented. No functionality provision to follow the schedule of the work and its changes in the information systems. Recommendations implemented, in implementation and not implemented. Forecast of future monitoring after the recent registration starts. Science. Minister Rapporteur Vital do Rêgo. Judged in 05/27/2020. *Federal Diary of Brazilian Union,* may 2020. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A1328%2520ANOACORDAO%253A2020%2520COLEGIADO%253A%2522Plen%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520. Access in: 20 set 2021.

[22] BRAZIL. Federal Court of Accounts. Plenary. Judgment case n. 1.079/2019. Diagnosis of stop works. Identification of main causes and opportunities for improvement. Recommendations. Monitoring. Minister Rapporteur Vital do Rêgo. Judged on May 15, 2019. *Brazilian Union official Diary*, may 2019. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A1079%2520ANOACORDAO%253A2019%2520COLEGIADO%253A%2522Plen%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520. Access in: 20 set. 2021.

[23] BAETA, A. P. *As vantagens dos concursos para a contratação de projetos*. Available at: https://concursosdeprojeto.org/2014/12/10/as_vantagens_dos_concursos_para_a_contratacao_de_projetos/. Access in: 25 set. 2021. Updated version by the same author of the original version cited by TCU and published in the Revista Infrastructure Urbana of December 2014.

Just like the Federal Court of Accounts had already demanded in bids based on the integrated contracting system, a risk matrix must be prepared as an instrument that defines the objective division of responsibilities arising from events supervening the contracting stage.

So, this step is crucial for the characterization of the object and therefore segregates both enterprises and Public Administration contractual duties, as well as it remains an essential piece of info for better sizing bids further offered by bidders, which, as shown, is a mandatory element for the preliminary engineering project to be conceived.[24]

Therefore, although integrated contracting has some advantages, the preparation of the draft and the entire planning phase must be very well conducted by the Public Administration so to minimize risks and create conditions so that the result, in the end, shall meet the expectations and interests of the public sector.

When it comes to contracts involving infrastructure, the importance of planning and, in particular, of the draft stage is even more evident, as failures in the planning stage can create a favorable environment for errors in contractual execution that will reverberate for many years because of the intergenerational character of this type of contract.

Dal Pozzo understands that infrastructure works last much longer than the average life span, authorizing us to speak of the intergenerational principle.[25] For this same reason, Dal Pozzo mentions the doctrine of prospective. This author believes it is necessary to glimpse the future before making decisions, especially regarding long-term public rare resource issues.[26]

Law 14.133/2021 further emphasized the essentiality of planning by raising it, in its art. 5, to the category of principle, which imposes on the public administrator the duty to carry out the planning to the greatest extent as possible, equally does Robert Alexy teaches, to whom the regulations must be understood as optimization warrants, that is, they determine that something is done in the extent possible, considering the factual and legal circumstances imposed.[27]

Another characteristic of integrated contracting is the reduction in the cost of inspection of the work, as it will not be necessary to identify in detail the number of services to be performed, considering that contracting ought to be measured by different results, which is why inspection can pay greater attention to the quality of execution of the contract and compliance with the contracted schedule.

However, as already warned by the Federal Court of Accounts, despite the cost of inspection of the work being lower in integrated contracting, it is necessary to consider the costs of local administration and management for each case. Although they are under the contractor's responsibility, it will be through the will and approval of Public Administration that the contractor shall include them in its proposal to be accepted by public authorities.

Moreover, these costs tend to be higher considering that in integrated contracting, the builder will incur expenses related to the management of the work required to interface between designers, executors of the

[24] BRAZIL. Federal Court of Accounts. Plenary. Judgment case n. 1,510/2013. 2014 World Cup. Audit survey. Works at Afonso Pena International Airport in São José dos Pinhais/PR. Metropolitan region of Curitiba. Infraero's First bidding under the integrated contracting regime (RDC). Deficiencies in the motivation to use the new regime, as well as in the balancing of the technical and price notes. Need to comply with the rule of art. 20 of Law 12,462/2011 in integrated contracting. Imperative considering possible adjustments in the prices obtained to the reality of the workplace, including about the BDI. Omissions in the engineering draft. Absence of risk matrix in the call instrument. Notification. Communications. Archiving. Minister Rapporteur Valmir Campelo. Judged in 06.19.2013. *Federal Diary of Brazilian Union*, jun. 2013. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A1510%2520ANOACORDAO%253A2013%2520COLEGIADO%253A%2522Plen%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520. Access in: 20 set. 2021.

[25] DAL POZZO, A. N. *O direito administrativo da infraestrutura*. São Paulo: Contracorrente, 2020. p. 164.

[26] DAL POZZO, A.N. *O direito administrativo da infraestrutura*. São Paulo: Contracorrente, 2020. p. 169-170.

[27] ALEXY, R. *Teoria dos direitos fundamentais*. Translation: Virgílio Afonso da Silva. São Paulo: Malheiros, 2008. p. 90.

civil results, equipment suppliers, and anyone responsible for electromechanical assembly.[28]

Therefore, what can be seen is that integrated contracting, in theory, can provide a reduction in some costs specifically, but, in practice, it may not result in a reduction in total transaction costs if there is not good planning.

Ronald Coase, writing about transaction costs, warned that it is necessary to consider that the costs are not limited to the price of the good or service to be contracted, as there are costs that precede the contracting stage, such as the preparation of the contract and fees to be incurred during the contracting and even after its termination, such as the inspection of the contract execution and the final supervision regarding the delivery of the contracted object, which is why the contracting parts must evaluate which model of hiring might be more convenient for each case, to decide which tasks Public Administration will carry out on its own and which it might leave under the responsibility of the contractor on its own.[29]

In this regard, it is vital to consider Williamson's warning, in the sense that two main characteristics of human nature impact transaction costs: first, they are limited rationality, which prevents it from predicting the future and, given the asymmetry of information, and even identifying present uncertainties circumstances that should be considered when drafting the contract; second, the tendency of some contractors to take opportunistic attitudes that, in this case, would take place as a result of the first characteristic, that is: the contractor may adopt eventual opportunistic perspective in the case the contractor fails to prepare and highly specify the contract or when it fails to sufficiently measure its specific issues.[30]

Thus, the decision of the Public Administration for integrated contracting must be supported by previous studies that demonstrate that this contractual execution regime is the most suitable, given the circumstances of the specific case. And such studies cannot be limited to generic and abstract allegations under penalty of offense to the predictions of art. 20 of Decree-Law 4.657/1942 (Law of Introduction to the Rules of Brazilian Law), according to which a decision must not be made on abstract legal values without considering the practical consequences of the decision made and whose motivation must demonstrate the needs and adequacy of the imposed measure, including possible alternative solutions to each specific case.

What can be seen, therefore, from the new rules of Law 14,133/ 2021, is that, although the number of elements that had been included in the draft has increased, which, in theory, might have improved the planning phase, the mentioned Law has substantially expanded the possibilities of using integrated contracting public procurement (procedures), which, given the historical debts of knowledge in planning stages, is a reason for justified concern about the results that will come from the expanded use of this contracting regime.

3 **Design-build public procurement:** are the problems seen in Brazil different from other countries?

To provide a broader perspective of Design-Bid-Build, not only the analyses of the Brazilian legislation

[28] BRAZIL. Federal Court of Accounts. Plenary. Judgment case n. 1.850/2015. Monitoring of agreement 2.547/2014-tcu-plenary. Fiscobras/2014. Thematic supervision. Subsystems of the rio são francisco integration project (pisf). Branch of the agreste. Differentiated contracting regime. Integrated contracting based on an executive project. Overestimate of quantitative. Determinations fulfilled. New recommendation. Archiving. Minister Rapporteur Benjamin Zymler. Judged in 07.29.2015. *Federal Diary of Brazilian Union*, aug. 2015. Available at: https://pesquisa.apps.tcu.gov.br/#/documento/acordao-completo/*/NUMACORDAO%253A1850%2520ANOACORDAO%253A2015%2520COLEGIADO%253A%2522Plen%25C3%25A1rio%2522/DTRELEVANCIA%2520desc%252C%2520NUMACORDAOINT%2520desc/0/%2520. Access in: 20 set. 2021.

[29] COASE, R. H. The nature of the firm. *Economica*, London, v. 4, n. 16, p. 392, nov. 1937.

[30] WILLIAMSON, O. E. The economics of organization: the transaction cost approach. *The American Journal of Sociology*, [*S. l*], v. 87, n. 3, p. 533, 1981. Available at: https://www.researchgate.net/publication/235356934_The_Economics_of_Organization_The_Transaction_Cost_Approach. Access in: 21 oct. 2021.

are required, but also a comparative study must be done. However, a rigorous criterion must be made to compare similar countries.

So, only well-developed economies and highly developed democracies shall be selected in this part. These criteria were made because Brazil is considered one of the highest economies in the world with more than 20 years of democracy, therefore providing a broader opportunity for anyone who wishes to contract to the Public Administration to qualify for it in a procedure made with an elevated level of transparency, requirements that these countries provide.

Several countries did not adopt the turnkey model but the design-build model when they transferred the responsibility for preparing basic and executive projects to the contractor.

The most notorious Law that forecasted the use of Design-Build public procurement is the U.S. Code of Federal Regulation 48, which is applied for every public acquisition in the United States that might use federal resources. Apart from its limited use imposed only for works requiring federal funds, most states use the same regulation with minor adjustments due to its peculiarities. Still, the overall scenario and the main idea remain primarily untouched.[31]

Firstly, item 36.605 of the Code imposes the obligation that several architect-engineer services must estimate the cost of projects and further constructions to be made before any public work. Additionally, the cost of architect-engineer services shall be prepared and furnished to the contracting officer before commencing negotiations for each proposed contract or contract modification expected to exceed the simplified acquisition threshold. The estimate shall be prepared based on a detailed analysis of the required work as previously thought.

In other words, estimated costs made by engineers for the project and public works are compulsory. Any public acquirement of enterprise procedures that might start without this previous and detailed estimation of drawings and Public Administration expenses shall be explicitly considered outlawed.

Moreover, item 36.608 explicitly imposes the responsibility for architects and engineers for eventual errors; also, article 36.702 determinates the reward for architect or engineers' projects to be adequate to standard form 252.

Projects are only allowed to be awarded by the fixed price that shall not exceed the current price seen for similar objects in the current market. So, there must be previous research in the market for the average cost of engineer and architect service in every public procurement procedure before starting the bidding schedule and whose price might increase proportionally, as does the complexity of the enterprise.

Item 36.102 defines designs as the construction requirements, including functional relations and technical systems to be used, such as environmental, structural, and electrical, fire equipment's drawings, and any other information considered indispensable for the excellent development of further works.

Additionally, item 36.210 determinates that:

> The contracting officer should make appropriate arrangements for prospective offerors to inspect the worksite and to have the opportunity to examine data available by the Government, which may provide detailed information concerning the performance of the work.[32]

Item 36.102 allows both Design-bid-build procedures and design-build ones. Both are allowed in the U.S. However, item 36.102 defines design-bid-build as a traditional method for acquiring construction with two separate contracts: one for the fixed-priced awarded to the best project delivered to Public Administration and another related to the development of the whole enterprise.

Item 36.209 explicitly prohibits those companies or their affiliates that already had done the project to

[31] Available at: www.achives.gov/federal-register/cfr/subjects.html. Access in: 20 ago. 2021.
[32] Available at: www.achives.gov/federal-register/cfr/subjects.html. Access in: 20 ago. 2021.

participate in the execution of the work apart from the D.B. model of acquisition. The idea is to avoid the presence in bidding procedures from those who had already done the project and, therefore, might have several additional pieces of info, making further bidding unfair for others.

Nonetheless, apart from the permission of design-build in U.S. Federal procurement, the Law explicitly specifies that two separate phases are compulsory whenever Public Administration opts for this method of public works of constructions and services. In Design-Bild's first step, companies are submitted to a rigorous pre-qualification process. They must demonstrate their ability to conduct the object they intend to gain, and only then will they be allowed to participate in the whole procurement procedure.

Regarding D.B., item 36.301 requires three or more offers, several projects' requirements, and design work, along with expertise and capability proved by further contractors.

Although both procurements are allowed, both require the previous estimation of costs. The main difference remains in the level of the project that in the case of the design-bid-build method, it tends to be much higher and specified, and that is why the lowest price can be applied as the average method for selecting further contractors' offers.

In contrast, the design-build project and costs might not be so superbly detailed, which, in turn, imposes the obligation for Public Administration to be much more rigorous in the pre-qualification process for companies' certificates. Therefore, the public sector might contract only with companies that share experiences in the field. So, the less detailed project in D.B. procurement is balanced by the rigid pre-qualification procedures imposed after the bidding schedule stage.

Not only has the U.S. allowed the use of design-build procurement methods, but also France has also regulated the same institute. The procedure is well determined in the Code of public command (*code de la commande publique*) [33].

In the case of the French procurement code, the practice is regulated in article L2171-2 section 01, which determines that apart from the traditional design-bid-build (the usual method), the concept-making techniques are also allowed whenever the public sector wishes to acquire things. This last methodology allows the same enterprise to conceive both project and execution.[34]

Apart from its permission, this specific Code segregates an internet sector (sector 2) to select the best projects: competitions (called: *concurs in French legislation)*. In this terms, article n. R2431-27 of the French Code explicitly determinates the main characteristics that a project must contain: the viable solutions, a topography map, any technical specifications, and a range of viable solutions that might best fit Public Administration interests.

Parallel to this legal provision, the article R241-37 determinates the public sector to previously have all the studies that might become necessary in the work field for further general construction eventualities (*bâtiments*).

Article L125-1 also explicitly determinates the competitions' mode as the best and unique form permitted to Public Administration to acquire additional projects whose valuation method shall combine the solutions chosen for the public demand with price and whose project choice must be made by a jury composed mainly by members with notorious experience in the subject in the field.[35] The process of selecting the best projects is described in section 02: (*Déroulement du concour).*

According to Article R2162-16, several obligations have been imposed not to require further specifica-

[33] Available at: https://www.legifrance.gouv.fr/codes/id/LEGITEXT000037701019/. Access en 20 set. 2021.

[34] In the original: *Le marché de conception-réalisation est un marché de travaux permettant à l'acheteur de confier à un opérateur économique une mission portant à la fois sur l'établissement des études et l'exécution des travaux.*

[35] In the original: Article L2125-1 : 2° Le concours, grâce auquel l'acheteur choisit, après mise en concurrence et avis d'un jury, un plan ou un projet.

tions that might limit the competition (*concurrence*) within the whole procedure. Besides, article R 2162-10 determines a jury with sufficient knowledge to better judge the proposals for the projects to be offered.

In addition, French Article n. D.2171-10 explicitly details all previous studies that any project must have[36] among them: all possible constructions methods, the economy provided in each possible solution, the materials, and quantities that shall be used, among many other security contingencies such as fire protection types of equipment and safety exists for unexpected eventualities.

Furthermore, just like the American procurement process, the French Code has specified several previous execution studies to the bidding stage, such as the analyses of several methods to attend to public demands.

For instance, article D2171-12 allows the public authority (*l'équipe de center d'ouvre*) to check the development of works frequently. These specific legal Predictions will enable the Public Administration to verify whether the enterprise's progress is being realized as conceived in terms previously stipulated so that eventual deviation might be instantly corrected.

The level of contingencies of the project seems to be quite frequent in most developed countries. For instance, the Switzerland Code of procurement (*marché publics*), law number. 72.056.1, in article 22, determines significant exigencies of the contest as an obligatory way for Public Administration to acquire the project, which must include a range of types of procedures applicable along with technologies that might best fit public interest as well as several exigencies for preparations works before starting the enterprise itself.[37]

Interestingly, until now, the Swiss Code did not forecast the D.B. model (*concéprion-réalisation*) apart from what French and American bidding procedures have already done. [38][39]

As the most developed economy[40] in Europe, Germany is another country that has already regulated public procurement procedures. The Predictions are described in the Ordinance on the Award of Public Contracts (*Vergabeverordnung*).[41]

In paragraph 3 (6), the German legal Predictions also allows D.B. procurement as it determines that: for estimating the contract value of works, the estimated total value of all supplies and services provided by the

[36] In the original: Article D2171-10 Les études de projet ont pour objet de : 1° Préciser par des plans, coupes et élévations, les formes des différents éléments de la construction, la nature et les caractéristiques des matériaux et les conditions de leur mise en œuvre. 2° Déterminer l'implantation et l'encombrement de tous les éléments de structure et de tous les équipements techniques ; Code de la commande publique - Dernière modification le 17 septembre 2021 - Document généré le 17 septembre 2021 Copyright (C) 2007-2021 Légifrance.

[37] Available at: wwww.bkb.admin.ch. Access in: 10 set. 2021.

[38] In the Orignal: Swiss Code Law n. 172.056.1: *1 L'adjudicateur qui organise un concours d'études ou un concours portant sur les études et la réalisation ou qui attribue des mandats d'étude parallèles définit la procédure au cas par cas, dans le respect des principes énoncés dans la présente loi. Il peut se référer aux règles édictées en la matière par les associations professionnelles. Le Conseil fédéral fixe: a. les genres de concours et les modalités des mandats d'étude parallèles; b. les types de procédures applicables; c. les exigences relatives aux travaux préparatoires; d. les modalités de l'examen technique des projets préalable à leur évaluation par le jury; e. les modalités spécifiques des concours et des procédures de mandats d'études parallèles lancés en vue d'acquérir des prestations dans le domaine des technologies de l'information et de la communication; f. la composition du jury et les exigences relatives à l'indépendance de ses membres; g. les tâches du jury; h. les conditions auxquelles le jury peut attribuer des mentions; i. les conditions auxquelles le jury peut classer des projets qui ne respectent pas les dispositions du programme du concours; j. la forme que peuvent prendre les prix et les droits que les lauréats peuvent faire valoir selon le genre de concours; k. les indemnités auxquelles les auteurs d'un projet primé ont droit lorsque l'adjudicateur ne suit pas la recommandation du jury.*

[39] 1) *L'adjudicateur qui organise un concours d'études ou un concours portant sur les études et la réalisation ou qui attribue des mandats d'étude parallèles définit la procédure au cas par cas, dans le respect des principes énoncés dans la présente loi. Il peut se référer aux règles édictées en la matière par les associations professionnelles. Le Conseil fédéral fixe: a. les genres de concours et les modalités des mandats d'étude parallèles; b. les types de procédures applicables; c. les exigences relatives aux travaux préparatoires; d. les modalités de l'examen technique des projets préalable à leur évaluation par le jury; e. les modalités spécifiques des concours et des procédures de mandats d'études parallèles lancés en vue d'acquérir des prestations dans le domaine des technologies de l'information et de la communication; f. la composition du jury et les exigences relatives à l'indépendance de ses membres; g. les tâches du jury; h. les conditions auxquelles le jury peut attribuer des mentions; i. les conditions auxquelles le jury peut classer des projets qui ne respectent pas les dispositions du programme du concours; j. la forme que peuvent prendre les prix et les droits que les lauréats peuvent faire valoir selon le genre de concours; k. les indemnités auxquelles les auteurs d'un projet primé ont droit lorsque l'adjudicateur ne suit pas la recommandation du jury.*

[40] DEVELOPED Countries List. *Word Population Review*, [*S.l.*] Available at: Access in: 24 Jan. 2022.

[41] Available at: https://www.gesetze-im-internet.de/vgv_2016~/-. Access in: 15 set. 2021.

entity contracting procedure must be known, which requires executing works along with the contract value of the results expected. However, the option of the contracting entity to award contracts for the design and execution of pieces can be either separately or jointly. So, it is optional and up to Public Administration to choose each method (D.B. or D.B.D.) to achieve its specific goals.

Apart from the German Code permission for the D.B. method, the Code segregates an entire chapter – chapter 6 – to award the best public engineer and architectural prizes projects. The German Code provides special attention to the qualifications of engineers and architects in charge, as seen in § 75 (items 1 and 2) of the Procurement Ordinance (*Vergabeverordnung – VgV*).

Item 1 from this paragraph says that the professional qualifications of architect, interior architect, landscape architect, or urban planner are always required. Only those entitled under the applicable Land law governing public procurement to bear the corresponding professional title or carry out the related activities in the Federal Republic of Germany might be deemed eligible for the task as seen:

> *Wird als Berufsqualifikation der Beruf des Architekten, Innenarchitekten, Landschaftsarchitekten oder Stadtplaners gefordert, so ist zuzulassen, wer nach dem für die öffentliche Auftragsvergabe geltenden Landesrecht berechtigt ist, die entsprechende Berufsbezeichnung zu tragen oder in der Bundesrepublik Deutschland entsprechend tätig zu werden.*[42][43]

Similarly, item 02 describes those professional qualifications of "consulting engineer" or "engineer" that are compulsory and previously required; so only those entitled under the applicable Land law governing public procurement to bear the corresponding professional title or carry out the related activities in the Federal Republic of Germany shall be considered eligible and capable to provide services to Public Administration.

In the same direction, Canada Public Services and Procurement Code also preview the use of Design--Build in item 9.10.15 in its Public Services and Procurement legal Predictions. According to PSPC (Public Services and Procurement Canada), the D-B-D methodology is considered the most frequent and common delivered process for construction projects. Moreover, letter g of the exact legal Predictions describes a pre-qualification process as an obligatory stage whenever using D.B. procedures in similarity to U.S. Legal System.[44] Parallel to those countries, but not less important, after several modifications in the Italian Code (*Nuovo Codice di Contrati Public*) - *decretto legislative 18 April 2016, 50* – D.B. methods were finally prohibited. Still, the effectiveness of contracts started before the recent Law modifications must remain valid until the end of their works signed (modulation of effects because of the safeguard constitutional right of perfect judiciary act).[45]

From this whole perspective from several countries, some conclusions can be retrieved: a) few countries rejected D.B. constructions methods, such as Italy that explicitly had abandoned it and Switzerland that so far has not yet regulated the prediction; and b) most countries like Germany, US, Canada, and France consider the design-bid-Build as the traditional method for public acquisition apart from the permissions of Design-Build method in several other predictions.

As demonstrated before, much more effort from the legislator has been used to explicitly specify the necessary data from projects. Some countries, such as French, have even dedicated an entire sector in their Code to provide it. In other words, most developed countries tend to be extremely cautious regarding

[42] Available at: https://www.gesetze-im-internet.de/vgv_2016~/-. Access in: 15 set. 2021.

[43] Free traslation: If the profession of architect, interior designer, landscape architect or urban planner is required as a professional qualification, anyone who is entitled under the state law applicable to public procurement to bear the corresponding professional title or to work accordingly in the Federal Republic of Germany is to be admitted.

[44] Available at: https://buyandsell.gc.ca/policy-and-guidelines/supply-manual/section/9/10/15. Access in: 12 set. 2021.

[45] Available at: https://www.codicecontrattipubblici.com/. Access in: 14 ago. 2016~/-. Access in: 15 set. 2021.

[Free] translation: if the profession of architect, interior designer, landscape architect or urban planner is required as a professional qualification, anyone who is entitled under the state law applicable to public procurement to bear the corresponding professional title or to work accordingly in the Federal Republic of Germany is to be admitted.

[Available] at: https://buyandsell.gc.ca/policy-and-guidelines/supply-manual/section/9/10/15. Access in: 12 set. 2021.

projects as a fundamental piece of public enterprises whose eventual errors may cost delays and waste of money that could have been saved with a more detailed previous project and better planning primary phase.

The following table shall resume all the results found so far to provide the reader with a concise, comprehensive view of the findings and comparisons of each method in each country.

Table 01

Country	Traditional or preferable Procurement Model	Prevision for Design--Build	Most detailed procedure
United States	Design-Bid-Build	Yes	Design-Bid-Build
France	*Concéptition- réalisation* (Design-Bid-Build)	Yes	Design-Bid-Build
Canada	*Concéptition- réalisation* (Design-Bid-Build)	Yes	Design-Bid-Build
German	Design-Bid-Build	Yes	Design-Bid-Build
Italy	Design-Bid-Build	No more	Design-Bid-Build
Switzerland	Design-Bid-Build	No	Design-Bid-Build

4 Central studies comparing contract enforcement regimes in the academic field: the studies of problems regarding D.B.B and D.B Method

As shown in items 2 and 3, both the Brazilian and foreign experiences illustrate the importance of good planning for the success of public procurement. In this item, several studies will be presented that reinforce this thesis since they found that choosing the contractual execution regime involves difficulties that good planning can help a lot to overcome.

To provide a broader perspective to the study of the design-build, not only a jurisprudence and a comparative study from laws from several studies are required, but it remains essential to verify the research made by most prestigious universities regarding the theme created especially within academia so to compare whether the problems seen in Brazil ought to be equal to those seen in other countries.

In topic two of this paper, several empirical studies regarding problems related to the design-build method in Brazil have been demonstrated, prepared by the Federal Court of Accounts (T.C.U.), Union of Architecture and Engineering (SINAENCO), and the Council of Architecture and Urbanism of Brazil (CAU/BR), Chamber of Deputies, and Office of the Comptroller General. However, it remains unclear if these findings are like those forecasted in several international academic studies, which is the theme of this specific topic. So, critical studies have been selected to provide a broader perspective of further problems regarding design-build bidding methodology.

The problem of the construction method is quite interesting because it can combine quantitative with qualitative analyses. There are several studies in the field of project errors. For instance, as the project is considered a significant problem for unjustified contract additions, Dosumo using quantitative research in 51 cases in 985 consulting and 275 contracting firms, figured out using Shapiro-Wilk's test the most frequent errors in construction projects for several procurement procedures in Nigeria in 2018. The idea of using 51 cases was propositional so to provide statistical inference and empirical evidence[46].

[46] DOSUMO, O. S. Perceived effects of prevalence errors in contract documents in construction projects. *Construction Projects and Buildings*, [S.*l*], v. 18, n. 1, p. 1-5, mar. 2018. Available at: https://www.researchgate.net/publication/324085237_Perceived_Effects_of_Prevalent_Errors_in_Contract_Documents_on_Construction_Projects. Access in: 30 set. 2019.

Firstly, he discovered that project errors in documents are more frequent and statistically significant in the Public Sector. Instead, when considering bill or quantitative estimations, there was no substantial statistical difference from mistakes made in either the Public or Private Sector. However, errors in drawings, quantities, and costs were prevalent in institutional buildings (public works).[47]

He also points out that 68% of all public procurement researchers have found at least one problem in one or more projects. On the other hand, in the broader perspective, considering all kinds of errors, the public sector demonstrated a statistically significant tendency of commitment fewer errors in comparison to private enterprises. His study showed that in sub developed countries, the compliment with the project had been put aside in either the Private and Public Sectors, which demands more rigorous legislation and better ways to standardize the construction methods to avoid further unnecessary contract adjustments.[48]

Regarding a specific pre-qualification approach for public projects using design-build, Kartam and Al--Reshaid, in 2005, in Kweit, made research in projects for parking lots that shall accommodate 2.300 cars in Kuwait through the unusual method of D.B. Their study's success corroborates why the U.S. has been using this model for so long. When the project cannot be highly specified, rigorous pre-qualification procedures must be required so that only companies with previous expertise in the field shall participate in the different bidding schedules.[49]

The reasons for so many project errors are systemic; for instance, Remo Huppert researched why so many errors occurred in developing countries, emphasizing francophone countries. He discovered that a trilogy must be highly controlled for any successful public procurement procedure regarding project control: well-defined objectives, finance to finish the schedule previewed, and representation of society that imposes pressure on governments to complete the enterprise within the saccule stipulated.[50]

In the same specific field of this study, Noel Carpenter and Dennis Bausman made a comparative study between two methods of construction in schools: Construction Manager at Risk and Design-Build using research within two years of studies (2012-2014) in several schools in the U.S. The sample collected was 137 projects from Georgia, South Carolina, and North Carolina, corresponding to 829 analyzed projects[51].

The findings valuated project delivery method costs, time, quality, and claims performances. The analysis indicated that the performance of the Design-Bid-Build (D.B.B.) method was significantly superior across all cost metrics. In contrast, the Construction Manager at Risk (CM at Risk) method produced higher product and service quality levels.

In another study in Hong Kong in 2006, Larsen [et. *Al*] tried to determine the most critical factors that might affect delays, cost overrun, and quality in public constructions so, questionnaire research with 26 elements was provided. Using Wilcoxon's text, they determined that the most influential factor that mediates public works were lack of project funding, errors or omissions in consultant material, mistakes in quality of the materials applied in the field, along with errors and omissions in drawings, schedules, and budget.[52]

[47] DOSUMO, O. S. Perceived effects of prevalence errors in contract documents in construction projects. *Construction Projects and Buildings*, [*S.l*], v. 18, n. 1, p. 21, mar. 2018. Available at: https://www.researchgate.net/publication/324085237_Perceived_Effects_of_Prevalent_Errors_in_Contract_Documents_on_Construction_Projects. Access in: 30 set. 2019.

[48] DOSUMO, O. S. Perceived effects of prevalence errors in contract documents in construction projects. *Construction Projects and Buildings*, [*S.l*], v. 18, n. 1, p. 21, mar. 2018. Available at: https://www.researchgate.net/publication/324085237_Perceived_Effects_of_Prevalent_Errors_in_Contract_Documents_on_Construction_Projects. Access in: 30 set. 2019.

[49] AL-RESHAID, K.; KARTAM, N. Design-build pre-qualification in tendering approach for public projects. *International Journal of Project Management,* [*S.l*], v. 23, n. 4, p. 310, 2005. Available at: www.sicencedirect.com.

[50] HUPPERT, R. La gestion des ProJet's publics dans les pays en voi de development. *Tier-Monde*, [*S.l*], v. 22, n. 87, p. 613-616, 1981. Available at: https://www.persee.fr/doc/tiers_0040-7356_1981_num_22_87_4050. Access in: 30 set. 2021.

[51] CARPENTER, N.; BAUSMAN, D. Project delivery performance for public school construction? Design-Build versus CM at Risk. *Journal of Construction Engineering and Management*, California, v. 142, n. 10, p. 2016. Available at: https://ascelibrary.org/doi/10.1061/%28ASCE%29CO.1943-7862.0001155. Access in: 30 set. 2021.

[52] LARSEN, J. K. *et. al*. Factors affecting schedule delay cost overrun and quality level in public constructions projects. *Journal of Management in Engineering*, Hong Kong, v. 32, n.1, p. 5, jan. 2016.

Moreover, it has been argued that hiring procedures related to infrastructure projects have become a challenge not only for Brazil but also for many countries, as Bent Flyvbjerg's 2009 studies have demonstrated.

As seen in his empirical study from the examination of 258 transport infrastructure projects in 25 countries, he has concluded that there were severe flaws in the planning phase, particularly concerning the preparation of projects, which were made with low quality and prepared by a team without the necessary technical qualification for the task purposed and which has generated underestimates of costs and overestimates of expected results, thus distorting the analysis concerning the cost-benefit *ratio* of the enterprise.[53]

So, it remains inconclusive whether a process shall best fit further public interest as it might depend on the specific objective proposed. Naturally, as D.B.B. projects tend to be more specified in terms of costs, it takes some advantages regarding other construction methods. However, when quality or adaptations in projects come into analyses, there is still much divergence on either one methodology or the other might best attend further Public Administration interests.[54]

All these studies emphasize the central problem of having good planning for public works. But which method should best fit public interests? Jane Park and Young Hoon Kwak tested both methods (D.B.B.) and D.B. to answer this question. Their findings, in 2016 in several U.S. Countries' works, demonstrated that it remains statistically inconclusive to affirm that the use of D.B. or D.B.D. best attends Public Administration's interest. In some cases, BDD has shown better results, but in several others, it seemed to depend more on the expertise and quality of planning previous stage.[55]

In the Brazilian case, the need for good planning is even more evident because, as stated above, integrated contracting is much more like the turnkey model than the design-build model. It was like that in the previous legislation, and the same idea remains in recent Law 14.133/2021, that, in art. 6th, item XXXII established that the contractor is to be responsible not only for preparing and developing the primary and executive projects but also by carrying out engineering works and services, providing goods and unique services demanded, and by carrying out assembly, testing, pre-operation, and other operations necessary and sufficient for the final delivery of the object.

In Brazil, Forni and Carmona understand that the use of integrated contracting cannot be considered peaceful but, on the contrary, requires studies that demonstrate its benefits for public contracting. For the authors, the example of the United States demonstrates that a good planning phase can produce excellent results.[56]

In other words, compared to design-build, integrated contracting methods like turnkey assigns the contracted with much more tasks that increase the risk of errors during contract execution if the Public Administration as public sectors has not well carried out the contracting planning schedule phase.

For Aurora Hernández Rodríguez, the turnkey method can present some advantages, such as:

> a) el abaratamiento de los costes y la rapidez en la ejecución de la obra, pues al ser el contratista quien elabora a su vez el proyecto tiene mejor acceso a los problemas que puedan surgir durante la construcción del mismo;

[53] FLYVBJERG, B. Survival of the most unfit: why the worst infrastructure is built and what we can do about it. *Oxford Review of Economic Policy*, Oxford, v. 25, n. 3, p. 365, 2009.

[54] CARPENTER, N.; BAUSMAN, D. Project delivery performance for public school construction? Design-Build versus CM at Risk. *Journal of Construction Engineering and Management*, California, v. 142, n. 10, p. 2016. Available at: https://ascelibrary.org/doi/10.1061/%28ASCE%29CO.1943-7862.0001155. Access in: 30 set. 2021.

[55] PARK, J.; KWAK, Y.H. Design-Bid-Build (D.B.B.) vs. Design-Build (D.B.) in the U.S. public transportation projects: the choice and consequences. *International Public of Project Management*, [*S.l*], v. 35, n. 3, p 16, 2016. Available at: http://www.elsevier.com/locate/ijproman. Access in: 30 set. 2021.

[56] FORNI, J.; CARMONA, P. C. Contratação integrada: o (des)alinhamento do regime a boas práticas internacionais. *A&C – Revista de Direito Administrativo e Constitucional*, Belo Horizonte, ano 20, n. 82, p. 246-247, out./dez. 2020.

b) la simplificación de las relaciones jurídicas y, consecuentemente, una mayor facilidad para determinar la responsabilidad en caso de incumplimiento; y

c) finalmente, una mayor seguridad y certeza respecto a la determinación del precio, que generalmente será un precio a tanto alzado.[57][58]

However, Rodríguez mentions the severe criticism that this model has received, such as a) impide al cliente llevar a cabo cualquier modificación del proyecto; y b) el contratista repercute siempre los considerables riesgos que asume en el precio, por tanto, no resulta más barato para el cliente.[59][60]

Therefore, the challenges related to infrastructure contracting are, with slight variations, the same in several countries' studies (U.S., Kuwait, Hong Kong, Nigeria, Francophone Countries, and Latin America, including Brazil) concerning integrated contracting.

However, the main difference remains in the measures that these countries have taken to mitigate the risks. While in Brazil, Law 14.133/2021 substantially expanded the use of integrated contracting, many other nations chose to adopt an opposite strategy, in the sense of restricting its use of D.B. and increasingly improved pre-qualification procedures within the planning phase, including efforts to guarantee better elaboration of the draft to be disposed to the competitors.

5 Conclusion

The evolution of Brazilian legislation reveals an increasing incentive for integrated contracting procurement biddings to increase efficiency in public contracting. Law 14.133/2021, following this trend, substantially expanded the possibilities for using this contractual execution regime. However, empirical studies show that integrated contracting in Brazil has not shown the expected results. And the leading cause of this failure has been poor planning and the absence of clear pre-qualification and rigorous stage procedures.

On the other hand, international experience demonstrates that the choice of the contractual performance regime is still a very controversial issue. It depends on each concrete case and mainly on the expectations posed by the Public Administration.

So, several variables should be considered whenever the public sector decides whether to transfer the responsibility to the contractor for the preparation of primary and executive projects combining costs with complexity and well done draft planning phase.

However, several countries have been extremely cautious in using design-build, so they have paid particular attention to the previous planning phase as a strategy for risk reduction, such as Canada and United States.

In Brazil, however, this practice has not been equally adopted, as the preliminary project was not prepared with the necessary quality to guarantee a satisfactory result in the case of integrated contracting. A way that might reduce some risk of wasting scarce public resources would be a viable and recommendable

[57] RODRÍGUEZ, A. H. Los contratos internacionales de construcción Llave em mano. *Cuadernos de Derecho Transnacional*, [*S.l*], v. 6, n. 1, p. 235, mar. 2014.

[58] Free translation: a) the reduction of costs and the speed in the execution of the work, since being the contractor who in turn prepares the project has better access to the problems that may arise during its construction; b) the simplification of legal relations and, consequently, a greater facility to determine responsibility in case of non-compliance; and c) finally, greater security and certainty regarding the determination of the price, which will generally be a lump sum price.

[59] RODRÍGUEZ, A. H. Los contratos internacionales de construcción Llave em mano. *Cuadernos de Derecho Transnacional*, [*S.l*], v. 6, n. 1, p. 235, mar. 2014.

[60] Free translation: a) prevents the client from carrying out any modification of the project; and b) the contractor always passes on the considerable risks that he assumes in the price, therefore, it is not cheaper for the cliente.

option of adopting more rigorous procedures like open public competitions so to provide general administration with better drafts with transparency using a high level of knowledge from the jury as the critical criteria for selecting the projects as well as to allow greater competitiveness among interested parts with greater rigor in judging proposals.

Regarding the case of Law 14.133/2021, it can be inferred that the current legal predictions have highly expanded the possibilities for using integrated contracting. However, it has also relaxed several requirements regarding detailed drafts and planning phases, putting a gap between Brazilian forecasted legal predictions and those from most developed countries.

There are well-founded reasons to believe that this choice from the Brazilian parliament might not produce an increase in efficiency in public works contracting as previously foreseen, but, on the contrary, the flexibility allowed in the recent national legislation has the potential to increase the risk of failure, incentivizing delay and addictions to public contracts with the dispense of several scarce public resources, therefore, confirming the hypothesis raised in the introduction.

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BRAZIL. Federal Supreme Court (First Class). Regimental Appeal in Writ of Mandamus 27.796. Summary: Constitutional and administrative. internal interlocutory injury in the writ of safety. petrobras. simplified bidding procedure. no application. determination of the federal court of acconts. edition of law 13.303/2016 (state-own law). revocation of art. 67 of law 9.478/1997. validity grounds of decree 2.745/1998, which approved petrobras' simplified bidding procedure. supervenient loss of purpose. interlocutory appeal which is denied. 1. Law 13.303/2016 (State-owned Companies Law) revoked art. 67 of Law 9.478/1997, basis of validity of Decree 2.745/1998, which approved the Regulation of the Simplified Bidding Procedure of Petrobras. 2. As in the present writ of mandamus, what, in the end, the petitioner intends is the annulment of the judgment of the Federal Court of Accounts, at the point at which it prohibited the use of the aforementioned Simplified Bidding Procedure, it is evident, therefore, that the supervening loss of the object of this petition. 3. Appeal dismissed. Minister Rapporteur Alexandre de Moraes. Judged on 03.29.2019. *Electronic Journal of Justice*, may 2019. Available at: https://jurisprudencia.stf.jus.br/pages/search?classeNumeroIncidente=%22MS%2027796%22&base=acordaos&sinonimo=true&plural=true&page=1&pageSize=10&sort=_score&sortBy=desc&isAdvanced=true. Access in: 20 set. 2021.

BRAZIL. Federal Supreme Court. Full Court. Extraordinary Appeal 441.280. SUMMARY Extraordinary resource. Maritime transport contract entered into by Petrobras. Decision refuting the intended nullity of the contracting party selection procedure. Procedure not preceded by bidding. Reform claim. Condemnation of the company in damages. Compensation that does not find constitutional support. Mixed capital company that operates in the market for commercial exploitation of goods and services. Submission, at the time of the facts, to the dictates of Decree No. 2.745/98. Contract regularly concluded. Partial knowledge of the resource. No provision. 1. The contested decision was based on the peaceful jurisprudence of the Federal Supreme Court that, at the time of the facts, the defendant was not subject to the predictions of the Bidding Law. 2. This legal regime, moreover, would make it unfeasible for its active participation in the competitive market segment in which it operated, including internationally. 3. The agreement was, therefore, regularly concluded, in the light of the legislation then applicable. The annulment claim was correctly

refuted. The claim for damages, cumulatively deducted, does not convey constitutional matters, making its knowledge unfeasible. 4. Extraordinary appeal which is partially known and which, as to that part, is dismissed. Minister Rapporteur Dias Toffoli. Judged in virtual session from 02.26.2021 to 03.05.2021. *Electronic Journal of Justice*, may 2021. Available at: https://jurisprudencia.stf.jus.br/pages/search?classeNumeroIncidente=%22RE%20441280%22&base=acordaos&sinonimo=true&plural=true&page=1&pageSize=10&sort=_score&sortBy=desc&isAdvanced=true. Access in: 20 set. 2021.

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