Proposal of a Performance Management System for Electronic Judicial Process

Performance in Justice Organizations

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## Abstract

The Digital Revolution urged modifications in the judiciary to adapt to the new flow of information (Pereira & Brito, 2018), enabling to speed up processes. The relevance concerns a perceived slowness which implies a certain loss of credibility and legitimacy (Isaia & Puerari, 2012). The Electronic Judicial Process (PJE) is a software that came along with the digital transformation of the judicial sector, and allows servants to work from home and digitalize part of their assignments. The main objective of this work is to enhance the efficiency inside judicial divisions. A spreadsheet was created in order to facilitate the management of public servants by the court clerk. Design Science Methodology was applied and interviews were organized with public servants who had been working with the PJE for over a year at one division of the Courts of Minas Gerais (Belo Horizonte), due to the necessity of identifying points of improvement. Three KPIs were selected based on three important transactions: compliance with the determinations, checking of the lapse of the term and analysis of a partial request/petition. The work discusses the importance of management tools in the administration of justice, emphasizing its capacity to improve efficiency and economy besides other contributions such as the implementation of telecommuting. The spreadsheet, in addition to improving the performance of PJE management, allows a discussion about the importance of more qualified and efficient administrative information in the judicial sector and what barriers allow such slowness in this state institution.

Keywords: Electronic Judicial Process; Key Performance Indicators; Public Sector; Design Science

## Introduction

The Digital Revolution refers to the changes brought about by recent advances in computing and digital technologies, impacting practically and automatically all sectors of the economy. In this context, the Judiciary needed to adapt to the new dynamics of information (Pereira & Brito, 2018), among other relevant reasons, because it accelerates proceedings.

The Judiciary Power, in some aspects, fails to accomplish its duties to provide public services and distribute justice, as established in the Federal Constitution of 1988. This public institution has not evolved at the same pace as society, becoming unable to fulfill the growing needs of the population. Therefore, public service is characterized as slow and difficult to access, being an obstacle for the achievement of full citizenship (Sadek, 2004).

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In Brazil, the situation of procedural delay causes the Judiciary to lose credibility and legitimacy (Isaia & Puerari, 2012). According to Pereira & Brito (2018), this scenario justified the creation of law No. 11,419 of 2006, which legitimized the activities necessary for the implementation of the "Processo Judicial Eletrônico" (PJE) - "Electronic Judicial Process" (free translation), enabling the "use of electronic means in the processing of judicial lawsuits, communication of acts and transmission of proceedings documents " (free translation ) (Brazil et al., 2006).

Taking all aforementioned elements into consideration, this technical report presents the partial results of a scientific inception research work adhering to the themes of justice innovation, performance in justice organizations, justice technology, and management of functions and processes related to administration of justice. This paper is a partial result of the ongoing research project "Productivity Tools for Managers", being conducted within an undergraduate course of a global business and law school.

The main objective of this work is the development of a performance management tool for the administration of auxiliary activities of PJE at the managerial and strategic levels. The theory used to support this deployment refers to Key Performance Indicators (KPI), and the next sections describe some of the literature about it and detail the artifact based on the DSR stages proposed by Wieringa (2009).

## KPIs in the Administration of Justice

From the moment that a public institution cannot exercise its duties, it must undergo changes (Nogueira et al., 2012). The reforms in the Judiciary Power are a tendency mainly in emerging countries, such as Brazil, since their institutions are not completely mature, being more flexible and susceptible to changes (Gomes & Guimarães, 2013).

PJE is a tool created to contribute to the inevitable reform in the Judiciary Power as an attempt to use information technology to guarantee the compliance with the constitutional principles of economy and celerity (Pereira & Brito, 2018), added in the Constitutional Amendment No. 45, 2004: Article 5 - LXXVIII – a reasonable length of proceedings and the means to guarantee their expeditious consideration are ensured to everyone, both in the judicial and administrative spheres." (Brazil et al., 2010)

According to Sadek (2009), the performance of the Judiciary depends strictly on its intern management, more judges or computers are not enough to solve the issues. In order to solve the internal problems in the institution, its administration must work in the optimization and improvement of processes. Considering that, the need for performance indicators increases as the institutional crises increase, since they can help find the causes of the problems (Dakolias, 1999).

The discussion about the remodeling of the Judiciary Power gained considerable strength with the inclusion of the Principle of Efficiency in the Constitutional Amendment No. 19, 1998: "Article 37. The governmental entities and entities owned by the Government in any of the powers of the Union, the states, the Federal District and the Municipalities shall obey the principles of lawfulness, impersonality, morality, publicity, and efficiency" (Brazil et al., 2010).

The need for performance indicators is the core theory used in the deployment of the artifact. A challenge in the performance measurement in the Judiciary Power is the little amount of data available for analysis. This happens due to two main reasons (Dakolias, 1999). First, the demand for performance indicators has been growing, a fact proved by the great increase of publications related to measuring performance in the Judiciary, between 1991 to 1996 there were only three, whereas between 2007 and 2011 there were 28 studies (Gomes & Guimarães, 2013). Second, Law Schools have always prioritized qualitative analysis of the behavior of the Judiciary Power, over the quantitative one.

The development of the spreadsheet was based on the study of the KPI (Peral, Maté & Marco, 2017; Bishop, 2018), which describes a person's progress towards achieving their goals. In the identification of the indicators, the attributes effectiveness, efficiency and economy were considered significant (Grateron, 1999). According to the author, effectiveness refers to the ability to achieve a goal; efficiency addresses the qualitative or quantitative effects of an activity with minimal resources; and economy considers the reduction of resources used to get to that goal.

The use of key performance indicators by the government of developing countries is a trend that follows their use in more developed nations (*Developing Key Performance Indicators – A Toolkit for Health Sector Managers / HFG*, n.d.). It is a consequence of the New Public Management (NPM) theory, which aims to improve the quality of public services by using several managerial methods, such as measuring performance (Pollitt & Bouckaert, 2011).

**Methods**

For the development of a performance management tool, we adopted a Design Science Research (DSR) approach, which is a prescriptive methodology that aligns theory and practice and assumes that an artifact must be developed as a practical result associated with the creation of knowledge in the research process. The regulatory cycle created by Wieringa (2009) defines how to implement DSR and consists of a logical structure for the resolution of problems in 5 stages: (I) investigation of the problem, (II) project of the solutions, (III) validation of the project, (IV) implementation of the solution and (V) evaluation of the implementation.

(I) Investigation of the Problem

Initially, we carried out interviews with servants who had been working with the PJE for over a year at the office of the 35th Civil Division of the Courts of Minas Gerais (Belo Horizonte). We identified that the head of the department had faced some major problems to assess PJE's servants' performance. One single public servant, whose main activities were related to PJE, was responsible for downloading the PJE reports directly from the TJMG website, once a month, and evaluating the number of transactions within the period, creating simplified charts and reports. However, this activity was absolutely operational and time-consuming, and the analyses created by the servant in charge, were shallow, since they were not integrated with a database to enable a comprehensive reading of the charts. We used this information in the development of an Excel spreadsheet that could solve part of the problems identified during the study.

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After analyzing the flow of information inside PJE, three transactions were identified as essential indicators for performance assessment: (a) compliance with the determinations, (b) check of the lapse of the term, and (c) analysis of a partial request/petition. The three operations were chosen for their quantitative character, representing meaningful steps in the sequence of procedures within the department. Compliance with the determinations describes how strict processes follow execution orders. When a servant is able to carry out a sequence of procedures along with this phase, they are efficient in reducing the procedural bottleneck in the operation. Check of the lapse of the term and analysis of a partial request/petition refer to processes with pending requests that prevent their progress in court. Therefore, the number of cases dealt with in these two last operations are directly associated with the number of procedures that can be sent to the next stage.

(II) Project of Solutions and (III) Validation of the Project

The artifact was designed along a period of 2 months. An Excel spreadsheet was used to gather the information for the analysis. In order to align the artifact designed to the division's expectations and needs, regular meetings with the servant in charge enhanced the efficiency of the tool still during the development process. It was identified the necessity of electing a specific public servant to be responsible for inserting the data and updating the database. The limitation of users to update the spreadsheet concerns to preventing duplicated registers.

The development of the artifact was initiated aimed at creating an environment that could solve the problems of measuring the performance of the servants when using the PJE, through the creation of intelligent analysis with the three operations identified as KPIs.

(IV) Implementation of the Solution

In order to make the spreadsheets more useful by those who did not know how to use Excel, the spreadsheet interface was designed to look like the Tribunal de Justiça (Court of Justice) website, by using the standard colors of the Judiciary of Minas Gerais.

Entering the spreadsheet, the user is first faced with an objective and simple menu leading to all the functions available in the artifact. By clicking on the "Site TJMG" button, the



*Figure 1.* **Menu**
Source: Developed by the first author

user is taken to the TJMG website to download the public servants' transaction reports. The user may configure the period and choose the servant the report will refer to.



*Figure 2.* **Public access to the servant's reports**
Source: TJMG website access available to the public

After the report is downloaded in spreadsheet format, the user only needs to copy all the lines in columns H to J, which contain the name and number of transactions/operations carried out, as it is designated in Figure 4, and then paste them in the artifact sheet "Cadastro de Operações" (first red button on the menu) in the white bar, as indicated. The user needs to fill out the blank spaces on the left, indicating whose public servant, month, and year the new data concerns. By clicking on the red button "Cadastrar" the data is sent to the database, updating the analysis.



*Figure 4.* **Transactions register**
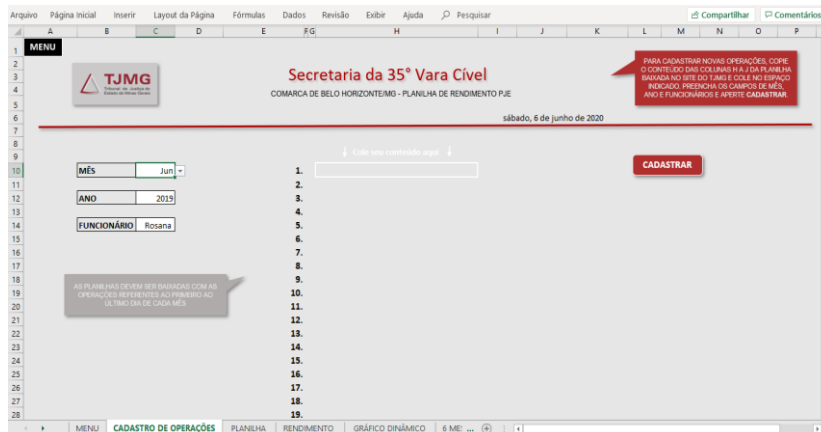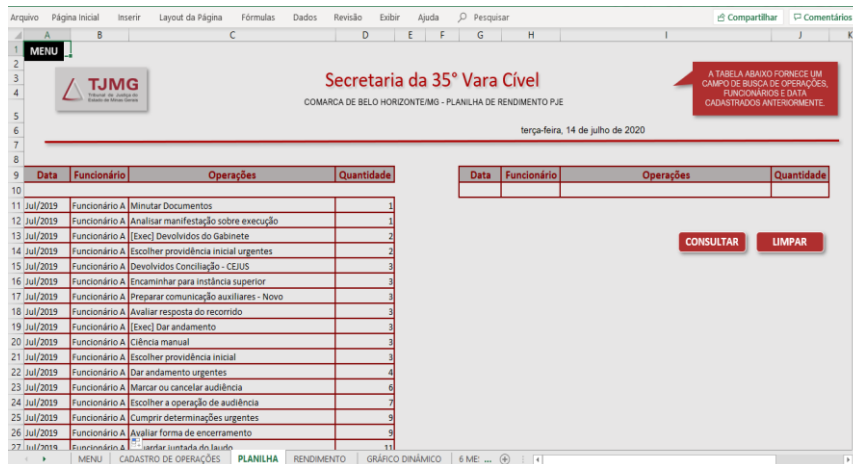Source: Developed by the first author

*Figure 3.* **Servant's PJE transactions report downloaded**
Source: TJMG public access

The database can be consulted, just by clicking in "Planilha de Controle" on the Menu. Rolling the page down, the user will have access to all operations registered in the system, from the oldest to the newest one. In the case when consulting the database is necessary, the servant can use the dynamic filter on the right to seek specific transactions.



*Figure 5.* **Control Sheet – Access to all transactions registered**
Source: Developed by the first author

***Figure 6.* Personalized access to servants' KPIs**
Source: Developed by the first author

The system provides three different analyses of KPIs. By clicking on the button "Rendimento" the user has access to a personalized tool to compare the performance of servants within different periods. It is possible to choose two between different periods to compare the performance of a specific public servant, the charts in the left present the percentage of growth or shrinking. In the right, the charts, considering the first period chosen, also expose a comparison with the results of its past 6 months. The analyses are made for each one of the three transactions determined as KPIs.

During the interviews, it was noticed that the department clerk needed a chart unifying information of all servants with the comparison of the past six months. For this reason, the spreadsheet also provides charts of the total productivity of the past semester. Other analyses might be personalized by the use of a dynamic chart and table available in one of the sheets. They are configured by the database updated in the system, and the user might generate charts and tables by choosing other transactions, and different public servants.
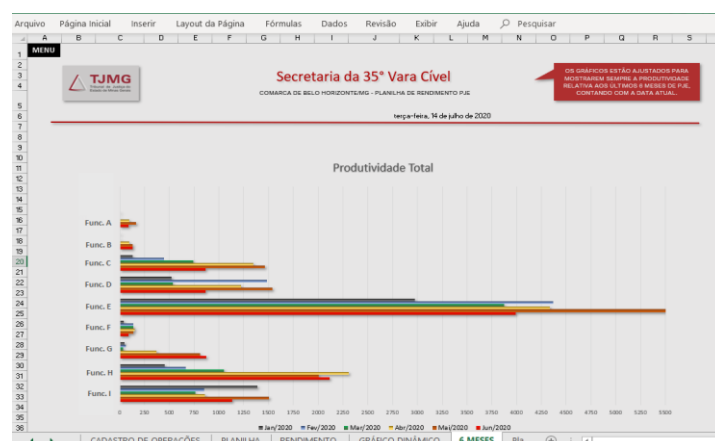


***Figure 7.* Total productivity of the past six months**
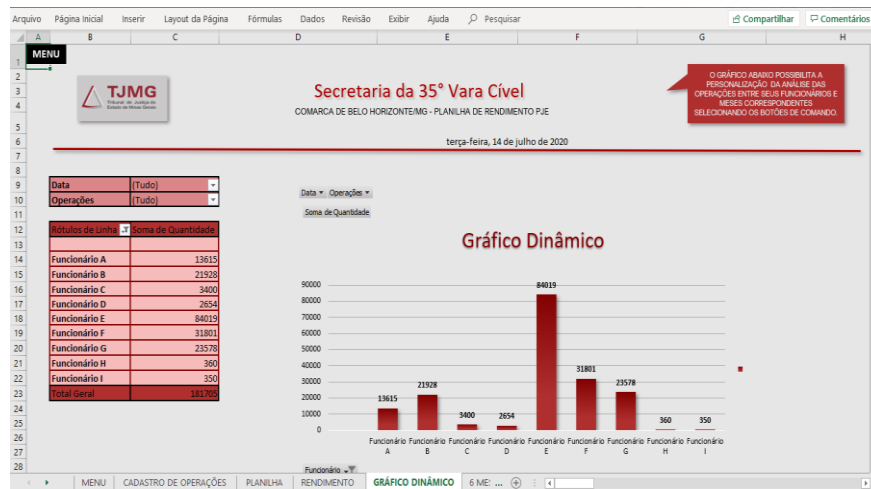Source: Developed by the first author

*Figure 8.* **Dynamic chart and table**
Source: Developed by the first author

(V) Evaluation of the Implementation

As the artifact has been used in a restricted way, by the same team that was interviewed for its deployment, a complete evaluation with other users will be carried out in the next phases of the research, as described in the conclusions.

**Discussion**

Considering the described challenge, PJE has been a great advance in information management, due to its capacity to collect and store data. In order to guarantee the integrity, authenticity, and security of the electronic process as well as protecting it against tampering, the PJE uses digital signature and electronic certification requirements. Among the several contributions of the platform, it is possible to highlight the reduction in the bureaucracy in the access to judicial courts all over the country and the implementation of telecommuting.

The development of this work was extremely important to expand the knowledge of the students involved, currently studying Law and Business Administration, about the PJE and the importance of its management. They were able to deal with a real-case challenge that Management Information System (MIS) faces in organizations, and its potential to reduce process slowness and intensify employees' performance analysis.

As a prescriptive methodology, DSR proved to be efficient for the development of the proposed artifact as it changed an initial situation - the difficulty of accessing information for performance management - and allowed the creation of a practical solution to facilitate this process. As Nogueira et al. (2012) argues, this change of the context allowed the institution to exercise its duties in a better way. Pereira & Brito (2018) also support this idea, as they argued that the use of information technology can guarantee the compliance with the constitutional principles of economy and celerity.

According to Sadek (2009), the performance of the Judiciary depends strictly on internal management. The tool enabled a reduction in the bureaucracy in the data access, providing more

information for the decision process related to PJE. In the past, before the implementation of the spreadsheet as a management tool, the division demanded a long time carried by the selected servant to generate the analyses. They also did not have any customized visualizations to improve the decision-making process of the court clerk. The use of the artifact by the division implied in the improvement of this assignment, saving time and providing more effective managerial information that contributed to the reduction of the slowness inside the division.

In order to ensure that the NPM theory would be applicable to this methodology, the identification of KPIs followed the principles described by Grateron (1999) that attributed effectiveness, efficiency, and economy to the analysis. The selection of the three judicial transactions as KPIs analyzed by the quantitative character, enhanced the quality of public services (Pollitt & Bouckaert, 2011), and impacted in a more fluid general workflow between different divisions, which are interconnected.

**Conclusions**

We believe that the tool developed as the main objective of this work contributes to the principle of efficiency described in the Constitutional Amendment No. 19, 1998.

The 35th Civil Division of the Courts of Minas Gerais has been using the spreadsheet for the management of the PJE since September 2019. According to the current feedback from the TJMG servants involved in the research, the application of the technology has brought improvements to the management of PJE, in terms of both saving time for public servant evaluation and the quality of the information obtained. The artifact has also been used to support the creation of performance goals and the development of strategies to achieve them.

DSR has allowed the students, in a scientific inception process, to align theory and practice for the development of an artifact as a practical result associated with the creation of knowledge in the research process. In order to conclude the Wieringa (2009) Regulatory Cycle for DSR, a complete evaluation with other users will be carried out in the next phases of the research.

However, some limitations of the artifact preclude its scale in the judiciary power. This is due to two main reasons: the lack of technical infrastructure and the bureaucracy in the public sector. The infrastructure challenge is related to the fact that divisions have access to LibreOffice, a free software that has Calc, a spreadsheet program similar to Excel - but does not support all functions available within Excel, jeopardizing some functionalities and analyses. So, it will be necessary to study technical alternatives to deploy the artifact in this scenario. Nonetheless, considering that the spreadsheet is expected to be accessed by only two users (the court clerk and the PJE elected servant to update the database), there is no need for institutionalizing Excel to all public servants, which facilitates its implementation in some divisions. The second challenge regards the difficulty to implement innovations within a bureaucratic institution due to its internal organization, its core functions, and hierarchy, which implies the reduction of the decision-making power and room for innovation in such an institution (Grangeia, n.d.). This characteristic may limit a wide acceptance that the artifact would have inside the divisions.

Taking into account the above-mentioned limitations, it becomes clear the necessity of continuing this discussion exploring the main barriers of the implementation of functional MIS inside the Brazilian judicial sector in a complementary article. Also, several opportunities for improvement of the current artifact may be identified in order to also mitigate and even eliminate the limitations, such as the association of the analyses of the KPIs with Application Programming Interfaces (APIs) connected to TJMG databases.

Finally, it can be concluded that the spreadsheet, in addition to improving the performance of PJE management, allows a discussion about the importance of more qualified and efficient administrative information in the judicial sector and what barriers allow such slowness in this state institution. In order to improve performance, it is imperative to conclude that innovation cannot be restricted to the private sector only, but it must be found in all areas that impact society.

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