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JUDICIARIES’ MODERNISATION THROUGH ELECTRONIC LAWSUITS: EMPLOYEES’ PERCEPTIONS FROM THE BRAZIL AND ARGENTINA FEDERAL JUSTICE SERVICES

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Abstract

This paper assesses the perceptions of a group of employees from the federal judiciaries of Brazil and Argentina regarding the impact of electronic lawsuits on individual performance and public service quality. A model is proposed and tested with data collected from fourteen interviews with public managers and employees. The results of this study suggest that court administrators should align task characteristics and individual characteristics to achieve better task-technology fit, individual performance and public service quality. These findings present important implications to understand the processes of the implementation of electronic lawsuits within courts and may provide guidance for future research about the judiciary.

Keywords: court management, judiciary, modernisation, electronic lawsuits, information systems, information and communication technology.
Introduction

Modernisation has become the core idea of many government programs. Current modernisation agendas include public sector and service performance improvement (Bertot et al., 2016), through better employee performance and service quality, development of Information Systems (IS) and Information and Communication Technology (ICT), and application of principles of Open Government, among others.

The judiciary has the responsibility to solve conflicts in difficult cases and to applicate the law impartially and fairly in a determined judicial system (Martinez-Villa and Machin-Mastromatteo, 2016). Judges’ work is directly linked to citizens’ desire to resolve litigation and bring about social peace (Silva et al., 2019). Currently, justice has a substantial prevalence in the Sustainable Development Goals documentation (Heeks and Renken, 2018), which shows the integration of justice and sustainability. Therefore, modernisation programs will continue to impact on courts and judiciary procedures (Raine, 2000).

Nonetheless, courts are organisations that typically resist administrative reform and have few managerial competences (Busetti and Vecchi, 2018). As part of the public sector but independent from government, judiciaries have been indirectly but increasingly affected by IS (Velicogna et al., 2018), even though little is still known about IS impacts, challenges, and pitfalls in the judicial branch of government (Sandoval-Almazán and Valle-Cruz, 2016).

Although judiciaries around the world continue to be among the least willing institutions to implement policies on transparency and access to information, generally because of their conservative tradition and lack of accountability practices, they are making progress toward developing IS to improve their processes and strengthen the relationships with stakeholders (Elena and van Schalkwyk, 2017). Among these
endeavours are Electronic Lawsuits (EL), Court Management Systems, Electronic Notifications, Electronic Signatures, and Electronic Communications.

In Latin America, there have been progressive reforms in judicial matters. Among them, IS appear (CEJA, 2014) as a possible solution to the problem of law losing its capacity for timely response in the dynamics of the current tech-society (Lezcano and Olivera, 2009). Countries should continue to advance in IS projects in the judiciary while sharing and exchanging good practices (CEJA, 2015). However, some studies suggest that developing countries should improve their capacity to use and sustain ICT and, in particular, human capacity for directing ICT toward improving citizen participation (Park and Oh, 2019). Therefore, IS implementation in judiciaries of Latin America becomes attractive to researchers.

Some investigations show that the importance of IS in courts has increased (Sousa and Guimarães, 2017) as they are institutionalized and ordinarily used with a high level of acceptance (Luzuriaga and Cechich, 2011). Moreover, previous studies show that IS positively influence performance measures in courts, such as efficiency, efficacy, effectiveness, and accountability (Joia, 2008, 2009), while the use of new ICT may bring users closer to the judiciary (Silva et al., 2019). This highlights the relevance of IS and ICT implementation in other courts and judiciaries, mainly those that are struggling with similar management problems (Guimarães et al., 2011).

However, several studies (e.g. Luzuriaga et al., 2009) and Luzuriaga and Cechich (2011)) are merely descriptive of the initiatives undertaken, thus lacking a rigorous theoretical background. Other studies were built on theories of intellectual capital (Joia, 2008, 2009), strategic planning and ICT strategies (Andrade, 2009; Andrade and Joia, 2012), innovation in the public sector and the role of resources and capabilities (Guimarães et al., 2011; Sousa and Guimarães, 2017), and research on open
judicial data (Elena and van Schalkwyk, 2017; Jiménez-Gómez, 2017; Sandoval-Almazán, 2017).

This suggests that few theoretical advances were made on this topic. A common problem in e-government literature is that articles often do not use specific theories as a foundation for the study (Belanger and Carter, 2012). Studies about the impact of IS on the judiciaries of Latin America using rigorous theoretical foundations are lacking. More research is needed to explore the main factors that impact the quality and performance of IS that automate processes and improve bureaucratic tasks in order to improve policies and governance of judiciaries (Sandoval-Almazán and Gil-Garcia, 2015). Research on these topics may enrich the needed reflection that is required to close gaps between theoretical models of justice and their application to reality (Martinez-Villa and Machin-Mastromatteo, 2016).

The present study aims to fill these gaps by assessing the following research question: How do EL impact on perceived individual performance and public service quality in the federal judiciaries of Brazil and Argentina? A model grounded on Task-Technology Fit (TTF) theory (Goodhue, 1995; Goodhue and Thompson, 1995) is proposed, and its relationships are assessed with perception data collected through interviews with public managers and employees.

This paper proposes a theoretical model on how EL can be assessed and focuses on how judicial modernisation projects affect perceived individual performance and public service quality. This study addresses a topic that has been relatively neglected by research. Courts have often been overlooked in public administration analysis because they are independent (Velicogna et al., 2018) and lie aside from what is usually considered to be the mainstream of public service, i.e. central and local government (Raine, 2000). This article has the potential to create knowledge in an area in which
there is a relative lack of studies and generate contributions that result in the improvement of IS management in courts (Sousa and Guimarães, 2017).

The study also has practical value as it contributes to the discussion of technology induced change by integrating the interaction of ICT, public employees and judiciaries institutional dynamics (Bellamy and Taylor, 1996). Court managers seek to understand the social and technological context created by IS in order to promote the development of effective public policies (Barbosa et al., 2013). The article examines the perceived effectiveness of two EL implemented in Brazil and Argentina, thus helping public administrators to successfully implement IS in courts. The social value of this research lies in that society is arguably more critical to courts than to other public institutions because their legitimacy depends, not on electoral mandates, but simply on their ability to command public respect and confidence (Raine, 2000).

This article opens with the literature review on IS implementation in Latin-American judiciaries. Then, the theoretical foundation and research model are presented. This is followed by the method and the results and their discussion. Finally, the conclusions are exposed.

**Literature review on IS implementation in the justice systems of Latin America**

Judiciaries in Latin America adopted many reforms since the democratic restorations of the ‘80s and ‘90s (CEJA, 2014). The major changes discuss modernisation, management improvement, better service offer, and generation of statistical data and performance indicators (Andrade, 2009). A recent study shows that Brazilian judges are concerned about the excessive demands on the courts, which can cause work overload, generate frustration and lack of motivation (Silva et al., 2019).
a solution, IS may counteract the daunting administrative task faced at courts in their workload management (Guimarães et al., 2011). E.g., the electronic notification spreads information faster and safer, along with visibility and transparency of the process (Luzuriaga and Cechich, 2011).

Another example are EL, which were proved to have a decisive role as a tool to improve work conditions in courts and access to justice (Andrade, 2009). EL facilitate standardisation and homogeneity of routines (Sousa and Guimarães, 2017) as they allow to manage and produce information from cases simplifying administrative tasks while documents are standardised (Luzuriaga and Cechich, 2011). EL help to achieve structural transformation and integrate organisational redesign within judiciaries (Andrade and Joia, 2012), which is especially important for developing countries where leaders of government organisations should seriously reconsider the workflow reengineering of their work processes (Park et al., 2015).

In Latin America, some academic studies describe and evaluate IS implementation in the judiciary. In Brazil, Joia (2008, 2009) measured the perceived variation of intellectual capital in 30 courts of justice involved in a government-to-government project, which links the Brazilian Central Bank and the Justice Department. Andrade (2009) identified different actors and institutions in the process of strategic planning and definition of IS strategies in the Brazilian justice system. Later, Andrade and Joia (2012) analysed the influence of the Brazilian judiciary organisational structure in the definition and implementation of IS strategies. Moreover, Guimarães et al. (2011) described administrative reforms involving management innovations undertaken at the Brazilian Superior Tribunal of Justice, while Sousa and Guimarães (2017) assessed the adoption of EL in Brazilian labour courts.
In Argentina, there are academic studies that described the design and implementation of the electronic signature and notification in the judiciary of Neuquén Province (Luzuriaga et al., 2009; Luzuriaga and Cechich, 2011). Sandoval-Almazán and Gil-Garcia (2015) proposed a framework to evaluate judicial websites, which was tested in 20 out of the 32 states of Mexico. Later, this instrument was refined by Sandoval-Almazán and Valle-Cruz (2016) to evaluate judiciary websites in a cross-country study of 25 countries in Latin America. Another cross-country study assessed existing conditions and current status of judicial data openness and its emerging impacts on 7 countries of Latin America: Argentina, Chile, Uruguay, Brazil, Costa Rica, México and Peru (Elena and van Schalkwyk, 2017).

These articles show that IS implementation in judiciaries is still done for administrative purposes, following policies to increase transparency. However, IS developments are not usually citizen-centred, thus failing to meet citizens’ needs as well as to improve justice service delivery. There is no evidence to confirm that the information from the judiciary may have been specifically planned for systematic use in the design of justice quality policies or might be used to improve court productivity or efficiency in terms of quality, quantity and duration of court processes (Elena et al., 2014).

As future research, Guimarães et al. (2011) recommend focusing on a broader sample of courts to deepen the understanding of their administration. Sousa and Guimarães (2017) call for the analysis of the adoption of innovations in other judicial fields and courts. More investigations are needed to examine how similar endeavours work in different countries in order to enhance external research validity (Andrade and Joia, 2012). Thus, a study that evaluates IS implementation in judiciaries of different countries becomes interesting. As far as we are aware, there are no academic articles
that assess the impact of the EL implemented in the federal judiciaries of Brazil and Argentina on perceived individual performance and public service quality. This paper aims to fulfil this gap by proposing the model that follows.

Theoretical foundation and research model

This research explores an extension of TTF theory (Goodhue, 1995; Goodhue and Thompson, 1995) in the federal judiciaries of Brazil and Argentina. In this theory, technologies are seen as tools used by individuals in carrying out their tasks and TTF suggests that a better fit between technology functionalities, task requirements and individual abilities will lead to a better perceived individual performance.

TTF focuses on the employee’s perspective, which was deemed suitable for the present study in which the perceptions of public employees about EL are explored. No empirical examination was performed using TTF to understand perceived individual performance and public service quality in the justice systems of Latin-American countries, thus creating an interesting gap of research.

TTF is also suitable because civil servants in public institutions are forced to use IS to deliver public services. This means that regardless of the assessment of EL by justice service employees, it is impossible to provide the service without using it. Recognizing the mandatory nature of IS use is important because one might reasonably suppose that when individuals are compelled to use a newly implemented corporate ICT, they may engage in resistance behaviours (Carter and Grover, 2015). In addition, when IS usage is mandatory, the constructs and relationships of Technology Acceptance Models (Davis, 1989) provide limited explanations of ICT acceptance and applying such models may lead to inappropriate organisational decisions (Brown et al., 2002).

Kim and Ammeter (2014) argue that when the acquisition of an IS occurs in an
organisation through an adoption decision made by senior managers or executives, the end-user has much less flexibility to choose to use it or not. This process places the majority of employees in a passive role, and an implicit assumption in TTF theory is that adoption has already occurred once IS are in the hands of end-users. Therefore, in the context of organisational adoption, TTF can be applied to evaluate IS impact on performance and its overall success.

Based on TTF theory, the proposed model (Figure 1) suggests that task characteristics and individual characteristics influence task-technology fit and a better fit will lead to better individual performance. This perceived impact at the individual level also affects at the organisational level on perceived public service quality.

[Insert Figure 1 here]

The definitions in Table 1 delimit the dimensions of the research model.

[Insert Table 1 here]

The proposed research model considers users’ evaluations to assess IS perceived impact on individual performance and public service quality (Petter et al., 2013), as stated in the following propositions.

**Task and individual characteristics: Task-Technology Fit**

ICT is designed for specific tasks (Burton-Jones and Grange, 2013). Users are aware of how an IS may fit their tasks context, how it differs from alternative ICT and the inconveniences it may bring to their work (Sun et al., 2016). Task characteristics
not only define the purposes and functionalities that are expected of an IS (Kim and Ammeter, 2014) but also affect users’ perceptions of the ICT they use in performing their tasks (Goodhue and Thompson, 1995). Therefore, different tasks must be supported by different ICT.

In general, government employees will be assigned to tasks that differ in content and complexity (Luarn and Huang, 2009). Tasks performed by public managers have implications for his or her IS use and ICT is more valuable to managers on routine tasks compared to less routine management tasks (Kraemer et al., 1993). Hence, employees may judge IS to be more useful for structured and routine tasks than for complex tasks.

*Individual characteristics* are often complex and may include needs and learning abilities, among other issues (Sun et al., 2016). Their consideration is important to assess whether users’ attitudes toward an IS are biased (Torkzadeh and Doll, 1999) and to achieve a high alignment between ICT and individual performance (Sun et al., 2016). In fact, articulating the intertwinement of ICT and individual identity is relevant to understand individuals’ behaviour with respect to ICT in embedded social contexts (Carter and Grover, 2015).

Users with greater computing experience are likely to rely upon ICT more extensively and find it more useful (Kraemer et al., 1993). Training, computer experience and motivation could affect how easily an individual uses ICT. People who are more competent, better trained, or more familiar with IS will find that they meet their needs more completely and give higher evaluations to IS (Goodhue, 1995; Goodhue and Thompson, 1995). Venkatesh et al. (2016) found that gender had no effects on the intentions of citizens to use two e-government services, while age and self-efficacy of the Internet had significant effects on both services, and education was substantial only in one of them. Recent research based on TTF proposes that social
influence, performance expectations and effort expectations affect IS use (Muslimin et al., 2017).

A single IS could get very different evaluations from users with different task needs and abilities, and there are significant contributions from users’ task characteristics (Ahmed et al., 2017) and individual characteristics (Muslimin et al., 2017) in TTF perceptions. Hence, the first two propositions of this research state:

\textit{P1: Task characteristics influence users’ evaluations of TTF.}

\textit{P2: Individual characteristics influence users’ evaluations of TTF.}

\textit{Individual performance}

\textit{Individual performance} refers to a specific task performance outcome accomplished with an IS at the individual level (Serrano and Karahanna, 2016) because it involves an evaluation of the degree to which the task outputs meets the task goals (Burton-Jones and Straub, 2006). In the current end-user ICT environment, both academics and practitioners recognize that IS success (DeLone and McLean, 1992, 2003) can potentially be measured through their impact on work at the individual level (Torkzadeh and Doll, 1999).

\textit{TTF} is essential in explaining task performance (Sun et al., 2016). In the context of e-government, public employee \textit{individual performance} is critical (Luarn and Huang, 2009). Better \textit{individual performance} is obtained with better \textit{TTF} (Goodhue, 1995; Goodhue and Thompson, 1995; Luarn and Huang, 2009) and employees’ perceptions of IS are a critical factor in determining their performance (Bharati and Berg, 2003). Thus, the third proposition of this investigation affirms:

\textit{P3: TTF influences individual performance.}
Public service quality

Improved service quality ultimately means improved organisational performance (Hays and Hill, 2006). Organisational performance depends on tasks accomplished by individuals (Kositanurit et al., 2006). First-order ICT effects arise at the process level, and they form second-order ICT effects at the organisational level (Barua et al., 1995). At the individual level, this research focuses on the effect of ICT on individual performance, while at the organisational level it focuses on public service quality.

The possibility that ICT investments in government agencies may improve their cost efficiency by compromising the quality of public services should not be ruled out (Pang et al., 2014). IS impact on employee performance influences service quality (Bharati and Berg, 2003). This means that employee performance (first-order effect) contributes to service quality (second-order effect). Hence, the fourth proposition of this investigation states:

P4: Individual performance influences public service quality.

Method

Unit of analysis

This research involves more than one unit of analysis: the federal judiciaries of Brazil and Argentina. They were analysed because of the object to be studied (Stake, 2003, 2005), i.e. EL impact on perceived individual performance and public service quality. Studying federal judiciaries may lead to a better understanding of an even greater collection of cases, thus illustrating possibilities and implications for the wider public sector (Raine and Willson, 1996).
Within Latin America, judiciaries modernisation through IS use is spreading to many tribunals (Andrade and Joia, 2012). Brazil has been a reference country in the computerisation of the judiciary (Andrade, 2009). Federal Law 11419/06 (December 19, 2006) permits IS use for the management of legal cases and it allows every unit to develop its own IS, although such development is not mandatory. This means that each agency has the freedom to choose the development model that best suits its own use, without the need to use the IS developed by the Council of Justice (Andrade and Joia, 2012). This is completely different from Argentinian federal courts, where there is only one specific type of software allowed to manage court records. Federal Law 26685 (July 7, 2011) authorized IS use in the judiciary and delegated IS development and implementation jointly to the Supreme Court of Justice and the National Council of the Magistracy, i.e. with governance at the national level.

In the last years, the Brazilian judiciary has been in the spotlight because of the investigations into money laundering and politicians’ corruption in the operation Carwash or Lava Jato (The New York Times, 2017). Meanwhile, the Argentinian judiciary is criticized as being among the costliest in the world, with staff benefiting from long vacations, which means the service is interrupted for 45 days a year (Infobae, 2017). The contemporary historical moment in both countries proves that court management is critical for society to remain without systematic and continued research attention (Guimarães et al., 2011).

In spite of the different contexts, the justice systems of Brazil and Argentina have similarities due to their geographical proximity, their reality as public institutions belonging to the judiciary and the application of the Roman-German legal system. Also, Brazil and Argentina are developing countries, where the use of e-government services is still at an early stage compared to developed countries, such as the US and the UK.
(Kumar et al., 2017). Experiences in emerging countries are worth documenting for greater comparison with developed countries (Barbosa et al., 2013).

Data collection and analysis

Perceptions of public servants of the federal justice systems of Brazil and Argentina were analysed. Fourteen semi-structured interviews were conducted, following a common questionnaire, but allowing the interviewer to ask new questions to record other peculiarities that were not included in the initial questionnaire (Yin, 2001). As building theory involves verifying relationships (Eisenhardt, 1989), the questions aimed to collect opinions regarding the rationality of the propositions defined a priori in this study.

The logic to obtain the sample was such that participants could better explain their experience regarding IS implementation in the judiciary. The interviewees were contacted through non-probabilistic and convenience sampling, which allows the identification of potential subjects when they are difficult to find (Hernández Sampieri et al., 2010). First, the potential interviewees were contacted and, then, each proposed others to complete the sample. To reach the end of the process, a theoretical saturation should be achieved. This is simply the point at which incremental learning is minimal and marginal improvement becomes small because researchers are observing previously seen phenomena (Eisenhardt, 1989). Hence, twelve people were interviewed until no newer concepts were found and, then, the last two interviews were conducted to confirm that no other relevant information was missing. This process was similar to the one conducted by Silva et al. (2019), where saturation point, when respondents begin to repeat the same answers, occurred after the thirteenth interview.
Different people have different values and forms of expression (Kumar et al., 2017) and interviews with key actors in different relevant social groups characterize the triangulation of data sources (Barbosa et al., 2013). Therefore, interviewees’ profiles were classified based on three criteria: Public Managers (PM), ICT Managers (ICTM), and Public Employees (PE). All references to interviewees are done with letters and numbers, according to their profiles and the order in which the interviews were conducted. The interviews were conducted personally in three different cities (Bahía Blanca and Buenos Aires in Argentina, and Porto Alegre in Brazil), with questions provided in Appendix A. Each interviewee was informed about the aim of the research, there were no right or wrong answer, and he/she should answer according to his/her perception. The country of each interviewee is shown in Table 2.

[Insert Table 2 here]

The interviewees were asked permission to record the interviews, which were literally transcribed (Kumar et al., 2017) into accessible text format for further analysis (Barbosa et al., 2013). Then, content analysis was carried out. This involves conducting a systematic analysis of the words and topics that emerge during the interviews, identifying the content and characteristics of the information contained in the text. In this phase, the three chronological steps proposed by Bardin (1977) were followed.

Content analysis was conducted using QSR NVIVO®, which provides management tools, such as coding, attribute creation, categorization and relationship determination. Data coding was done in nodes, which produces a structured view of the main concepts under study, thus facilitating the structuring, categorization and organisation of empirical data. The nodes were classified by inductive themes based on
the relationships proposed in the research model. Emerging relationships between constructs should fit the evidence. Sometimes a relationship is confirmed by the case evidence, while other times it is revised, or rejected due to insufficient evidence (Eisenhardt, 1989). Hence, one node was established for each proposition and sub-nodes were labelled based on the agreement, partial agreement or disagreement of the interviewees with each proposition.

In the following section, for each proposition a table is presented, in which the right column expresses the degree to which the evidence and proposition relate, based on the evidence representativeness as stated by different interviewees. Similar to da Silva et al., (2017), high was considered when the evidence was mentioned by more than half of the interviewees, medium when mentioned by four to seven, and low when mentioned by two or three. Next, the results and their discussion are presented.

Results and Discussion

As shown in Table 3, the interviewees perceived that due to EL judicial processes have not changed because a judge still makes the final decision without ICT use. On the contrary, they perceived that the lawsuit administrative flow has changed because it is faster and many operational activities are automatized (e.g. electronic notification). Similarly, Guimarães et al. (2011) found that management innovation affects administrative processes and lawsuits management but does not change the judging process.

[Insert Table 3 here]
Most interviewees support P1 as they believed that “the computer system has more repercussions in more repetitive tasks and less in the tasks that are of elaboration” (PM3). Previous literature highlighted that EL impact on courts enhances performance because of eliminated bureaucratic steps in the flow (Sousa and Guimarães, 2017). Among justice modernisation are activities automation (Andrade, 2009), such as an automatic mechanism for controlling deadlines, tasks or notification delivering (Luzuriaga and Cechich, 2011).

The interviewees also perceived a distinction between support and primary activities, which have different objectives and thus, different system functionalities. Guimarães et al. (2011) also found a sharp demarcation between primary and support activities. There was a differentiation between judges and their legal staff, on the one hand, and the non-legally trained staff members, responsible for conducting administrative support activities, on the other.

However, some interviewees disagree with P1 because “for everyone it's the same” (PE11), “it facilitates for all” (PE12), “if the system offers the tools for each of the tasks executed by that person, to solve his problem, i.e. his work...” (ICTM5). Likewise, Joia (2008, 2009) concluded that there was no cognitive dissonance between judges’ and employees’ perceptions about a positive impact on the intellectual capital variation in courts and the value accrued from an IS endeavour.

[Insert Table 4 here]

The interviewees perceived that individual characteristics affect users’ evaluations of TTF because “it depends on how people adapt to the changes” (ICTM2) and “there is always a resistance to something new” (ICTM5). Like any other change in
the justice system, IS incorporation does not occur quickly, especially because IS could be seen as a risk factor that challenges political interests and resistance from judges and employees exists (Sandoval-Almazán and Valle-Cruz, 2016). Previous studies showed that when individuals are compelled to use IS, they may engage in resistance behaviours (Carter and Grover, 2015), such as minimal use, complaining or personal withdrawal (Lapointe and Rivard, 2005). Nonetheless, with time resistance to work with electronic processes, indicators and computerized operations may be overcome (Guimarães et al., 2011).

Sousa and Guimarães (2017) also found a cultural resistance associated with the generation gap, i.e., older court management staff and judges would be more likely to resist the adoption of innovations. The interviewees also highlighted issues related to age as “those of us who were not born in the digital age are going to have much more... complications when interacting with these technologies than younger people” (PM4). In fact, “it has to do with age, but not because of physical age, because of attitude, because of their life experience with technology” (PE14).

However, other interviewees believed that age was not an issue “because technology is so present in people’s lives today... Honestly, I do not see it, aside from those one or two cases of older people who still have a bit of difficulty.” (PE10). Besides, “there are attitudinal issues... that have to do with a commitment to work” (PM4) as “the interest of each one to learn” (PE11). In this sense, individual skills management is essential to EL successful implementations (Sousa and Guimarães, 2017).

[Insert Table 5 here]
The interviewees seemed to agree with P3 since “when the issue is attached to technology, the results are always more precise than when they depend on a human being” (PE13). This suggests that EL turn attendance into a standard (Andrade, 2009; Guimarães et al., 2011; Andrade and Joia, 2012) well-understood process capable of solving citizens’ requirements in less time and with more accurate responses (Luzuriaga and Cechich, 2011). TTF was perceived to help to “generate automatic actions” (ICTM1) and “spend less time in bureaucratic tasks to gain more time in the quality of service provision” (PE9). Correspondingly, a previous investigation found that standardised routines and eliminated steps in the flow speed up the process and procedural times (Sousa and Guimarães, 2017). This affects individual performance and improvements are seen; “in times of physical process... we manage to reach an average of, working at our hardest, 200 judgments per month... Here we already reached 700 processes judged per month. You see the difference in productivity, agility, process production” (PE10).

To acquire TTF and its consequent impact on individual performance, the interviewees perceived that the IS division has to “continue to improve the system... to make the activity of the individual operator more efficient” (ICTM1). Some public servants believed that “the person who makes the technical tool does not talk much with the one who is going to use that tool. So sometimes there is a communication conflict” (PE11). Public managers also felt there needs to be “feedback... so that a user can propose... the steps of the procedure to be done in a different way” (PM6). This suggests that for IS to be successful, there should be effective communication of goals, schedules and deliverables. In order to help reach support, the IS division should listen to opinions and adjust the IS accordingly. This may make participants become involved in the process and be willing to support its implementation. Installing a help-desk
service for communication and support (Luzuriaga and Cechich, 2011) and communication actions about system changes (Sousa and Guimarães, 2017) were found in previous research to be essential because users must easily get assistance (Goodhue, 1995).

However, some interviewees perceived that the relationship between TTF and performance might be compromised if there is a service shutdown. IS must be reliable; they should be available when needed without frequent problems and crashes (Goodhue, 1995). This means that IS should not be subject to unexpected or inconvenient downtimes, which makes it harder to work (Goodhue and Thompson, 1995). Reliability of the network, capability of providers, and service availability should be assessed in such a way that low quality does not affect service provision (Luzuriaga and Cechich, 2011). In Brazil and Argentina, Internet access might be a large concern as there are regions with electricity and connection problems (Sousa and Guimarães, 2017). IS need technological infrastructure, which is one of the most important drivers (Park and Oh, 2019) in achieving solutions for a meaningful and beneficial implementation of e-government in developing countries (Park et al., 2015).

[Insert Table 6 here]

Interviewees perceived that individual performance is related to public service quality as “the person who operates the system has a profound influence on how the information and the product come out” (PE13). For a judge “the operator is very important... you can have top technology... and an operator who is not very committed to the task he is doing, who is little motivated, or little interested in the final result... and yes, it does influence service quality a lot” (PE14). Hence, “many times public
service quality is linked to the public servant quality” (ICTM8) because for “individual performance, obviously the individualities in any organisation... determine the functioning of everything, of the whole organisation” (ICTM1).

Other interviewees highlighted that “one thing is linked to the other... quality and productivity always have to be together” (PE11), and “you have to balance them... which is complicated” (PE9). Similar results were found in previous research in which judges stated that “implementation... has really improved the quality of service delivery and the quality of the professionals that work here” (Guimarães et al., 2011: 305) and “Quality, basically, depends on people.” (Guimarães et al., 2011: 307).

Nevertheless, some interviewees perceived that other factors influence the relationship between individual performance and service quality. Among them, managers highlighted employees’ training because “if the user misuses the system, whether it is intentionally, unintentionally, or due to lack of training or for whatever reason, the system stops working in the way it should work. Then, the evaluation or the valuation of the quality will be impacted” (PM6). In this sense, in order to achieve service quality, management of individual skills may be needed, including the diagnosis and identification of skill-development needs, and the lack of budget for employees’ training and learning is a huge barrier (Sousa and Guimarães, 2017) to EL success.

Conclusions

This research aims to study judiciaries’ modernisation by assessing the perceptions of a group of employees from the federal judiciaries of Brazil and Argentina regarding EL perceived impact on individual performance and public service quality. There are gaps in the study of EL perceived impact on individual performance and public service quality in judiciaries of Latin America using a sound IS theoretical
foundation. The literature presents some studies that do not combine these issues and treat them in isolation.

Hence, the first contribution of this work is the development of a theoretical model grounded on TTF theory (Figure 1) on how judiciaries’ modernisation through IS interventions can be assessed. The second contribution is the adaptation of the propositions, which are based on IS literature for companies and were adjusted to be applied in the public sector, i.e. in the federal judiciaries of Brazil and Argentina. The third contribution is that this article advances in the study of IS implementation in different judiciaries. Previous studies tend to analyse judiciaries from a single country or province. In this sense, the proposed model was applied in different user populations and different contexts (Wang and Liao, 2008).

This qualitative study with court managers and employees through interviews suggests that the model adheres to the reality of the federal judiciaries of Brazil and Argentina. The interviewees perceived that, when implementing EL, task characteristics and individual characteristics should align to achieve better task-technology fit, individual performance and public service quality.

A limitation of this research is that the perceptions of a relatively small sample of employees within the Brazilian and Argentinian judiciaries were considered. Although the sample does not contain an extensive number of officials, it provided a significant mass of data (Myers, 1997) and helped to understand the processes of IS implementation within a complex political environment (Yildiz, 2007). Participants may have been difficult to find because judicial institutions are among the least willing to implement policies on transparency and access to data (Elena, 2015).

In future research, the proposed model could be tested with a bigger number of officials being interviewed at different times and in a broader context of judiciaries in
order to compare results. Also, a quantitative data collection instrument may be required to obtain a larger sample in different places for greater generalization (Wang et al., 2007). A survey may be applied to gather public employees’ perceptions of EL and their perceived impact on individual performance and public service quality. The results of this kind of quantitative study could be further discussed in fresh interviews with public officials.

This paper addresses gaps in knowledge by complementing existing IS and public modernisation research through their study in the judiciary. This contributes to the academy by assessing the relationship between IS and application areas like the justice system. The perceived effectiveness of the EL implemented in the federal judiciaries of Brazil and Argentina is examined, thus suggesting how courts can lead to successful EL implementations in Latin America. It is hoped that this research can reinforce and provide guidance for future court management research. For managerial practice, this study aims to clarify the interaction between IS and employees in an organisational context, so that court administrators understand how IS affect perceived individual performance and public service quality.

The results that emerged from interviews with public managers and employees suggest that judiciaries should move beyond digitisation to transform judicial processes. Judiciaries should exercise greater responsibility for developing their own modernisation projects to suit their particular circumstances and conditions. Modernisation presents not only a considerable challenge but also an opportunity for judiciaries to revitalise the relationship with stakeholders, who demand independent and effective judiciaries. IS may re-empower courts to take a more assertive role in the process of developing a framework for the administration of justice that commands public respect, confidence and legitimacy (Raine, 2000).
IS are closely related to the current Open Government initiatives, which promote transparency and citizen engagement through equipped ICT tools and open data accessibility (Park and Oh, 2019). The importance of increased public access to courts and lawsuits data (Andrade, 2009) reinforces the need for better IS implementation in the justice system. Justice needs to open up, modernise and provide alternatives to technical structures if data justice for development is to be delivered in practice (Heeks and Renken, 2018). In this sense, this investigation is expected to help managers reduce gaps between policy and design of EL in other Latin-American countries, thus guiding further IS endeavours, open data policies and modernisation by practitioners.

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Table 1. Definitions.

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<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Author</th>
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<tbody>
<tr>
<td>Task characteristics</td>
<td>Perceived characteristics and requirements of the tasks that the user must perform using ICT.</td>
<td>Goodhue (1995)</td>
</tr>
<tr>
<td>Individual characteristics</td>
<td>Perceived attributes related to the individual that could affect how he or she utilizes ICT.</td>
<td>Goodhue (1995)</td>
</tr>
<tr>
<td>Task-technology fit</td>
<td>Perceived degree to which a technology assists an individual in performing his or her portfolio of tasks.</td>
<td>Goodhue (1995)</td>
</tr>
<tr>
<td>Individual performance</td>
<td>Perceived extent to which a particular IS enables an employee to effectively and/or efficiently execute his or her tasks.</td>
<td>Goodhue and Thompson (1995)</td>
</tr>
<tr>
<td>Public service quality</td>
<td>Perceived degree to which an IS facilitates the competent delivery of efficient services to help citizens, businesses and agencies in achieving their governmental transactions.</td>
<td>Tan et al., (2013); Alanezi et al., (2012)</td>
</tr>
</tbody>
</table>
Table 2. Interviewees.

<table>
<thead>
<tr>
<th>Code</th>
<th>Country</th>
<th>Code</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICTM1</td>
<td>Argentina</td>
<td>ITM8</td>
<td>Brazil</td>
</tr>
<tr>
<td>ICTM2</td>
<td>Argentina</td>
<td>PE9</td>
<td>Brazil</td>
</tr>
<tr>
<td>PM3</td>
<td>Argentina</td>
<td>PE10</td>
<td>Brazil</td>
</tr>
<tr>
<td>PM4</td>
<td>Argentina</td>
<td>PE11</td>
<td>Brazil</td>
</tr>
<tr>
<td>ICTM5</td>
<td>Argentina</td>
<td>PE12</td>
<td>Brazil</td>
</tr>
<tr>
<td>PM6</td>
<td>Argentina</td>
<td>PE13</td>
<td>Argentina</td>
</tr>
<tr>
<td>PM7</td>
<td>Brazil</td>
<td>PE14</td>
<td>Argentina</td>
</tr>
</tbody>
</table>
Table 3. *P1: Task characteristics influence users’ evaluations of TTF.*

<table>
<thead>
<tr>
<th>Sub-dimension</th>
<th>Evidence</th>
<th>Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE10: “Everything that is related to the flow, notifications, separate requests... the process comes and goes several times, it suffers from “n” movements... it involves much more technology... much more automation... It has a series of tools in the process, if that happens, what is going to happen next? That it is automatized... [On the other hand, in] the final analysis of the process to be judged... it is less useful... The process moves very little... we analyse the pieces of the process to make the sentence, only one document... That is totally personal, totally human, without technology.”</td>
<td>Agree</td>
<td>High</td>
</tr>
<tr>
<td>PE9: “The software includes all the support activity and all the primary activity.”</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>PM6: “It depends on the objective pursued by the use of technology... the system should not be evaluated in the same way... because the functionality that that part of the system is going to have is another... As the objective is different, the conceptualization of the system to achieve this goal will be completely different and the evaluation... will also be different.”</td>
<td></td>
<td>Low</td>
</tr>
</tbody>
</table>
Partially agree - -

Disagree PE14: “If the technology is well oriented for everyone’s task... it is useful for all of them; for the person at the service desk to search for a file; for the one who is going to notify something because it is done through the system, so it is much more... agile than going out and driving; for the judge’s assessor who is writing, he can correct, save, paste... while writing he is looking for jurisprudence” Medium
Table 4. *P2: Individual characteristics influence users’ evaluations of TTF.*

<table>
<thead>
<tr>
<th>Sub-dimension</th>
<th>Evidence</th>
<th>Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE12: “whenever IS people say ‘from this moment on you will have to use this system’… many were like ‘…are they going to change systems again? Do we have to do it again? I’m used to doing it this way.’… being open to adapting, adaptability is fundamental.”</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>ICTM5: “Individual characteristics clearly change… at their age… although there are many people who are capable of learning regardless of their age… because learning about technology is an intelligence.”</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>ICTM1: “In the public sector you often have what you have and you do not dismiss the person, the person remains. Then individual characteristics obviously condition work. If the person is no longer or is not properly committed to the service, technology does not matter; we are talking about something else… It has to do with issues related to incentives and human profiles.”</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>Partially agree</td>
<td>Disagree</td>
<td></td>
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<tr>
<td>----------------</td>
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<td></td>
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<tr>
<td>PM3: “In informatics, there is a paradigm that it is harder for older people than for younger ones. However, many young people are very reactive to informatics also, or at least, they are very reactive to informatics at work, although perhaps in their personal lives they use social media and Google... On the other hand, older people, in general, have more difficulty with informatics, but many old people have been very innovative. Therefore, we do not allow ourselves to work under that kind of statements because it does not usually work that way.”</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
Table 5. P3: TTF influences individual performance.

<table>
<thead>
<tr>
<th>Sub-dimension</th>
<th>Evidence</th>
<th>Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>ICTM8: “TTF allows you to automate more or establish the workflow in a clearer way, which will end up reflecting on his performance because it will help him to perform his functions in a clearer and more objective way, without so much interference from the individual… by having a better orientation, he will achieve a better performance”</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>PE13: “The technology that is going to be applied to… a certain task… cannot be imported, it has to be created specifically for that task… the fit of the technology to the task… obviously improves the performance”</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>PM4: “there must be permanent feedback between the system user and the analysts… to make the changes or the improvements that are required in that sense”</td>
<td>Medium</td>
</tr>
<tr>
<td>Partially</td>
<td>PE9: “people still experience internet crashes, slowness in the system… As there are many more people using the internet, and much more information circulating, the internet ends up being slower, the system crashes”</td>
<td>Low</td>
</tr>
<tr>
<td>agree</td>
<td>Disagree</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 6. P4: Individual performance influences public service quality.

<table>
<thead>
<tr>
<th>Sub-dimension</th>
<th>Evidence</th>
<th>Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>PM7: “public service quality is inherently associated with me as a public servant”</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>PE11: “quality and productivity, the two are allied. Because in a courtroom, for example, where there is heavy workload, the public servant can do 80 dispatches per day. Here I do not have that workload, the employee does 1, 2, 3 dispatches per day, it takes a week to make a sentence, but the complexity is much greater.”</td>
<td>Low</td>
</tr>
<tr>
<td>Partially agree</td>
<td>PE12: “He can work faster, more efficiently, research better, better assist the judge... I think it helps quality”</td>
<td>Medium</td>
</tr>
<tr>
<td>Disagree</td>
<td>PM3: “within quality management, a fundamental element is education or permanent training of employees and civil servants... not only in technological aspects but also in the aspects of the specific legal task”</td>
<td>Low</td>
</tr>
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<td></td>
<td>-</td>
<td>-</td>
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</tbody>
</table>
Figure 1. Proposed research model.
APPENDIX A – Interview Script

1. Do you think that individual performance of the employee using the electronic lawsuit can improve public service quality?
2. Do you think that the fit between the functionalities of the electronic lawsuit and the tasks to be developed with it allows obtaining a better individual performance?
3. Do you think that individual characteristics affect the evaluations made of the fit between the functionalities of the electronic lawsuit and the tasks developed with it?
4. Do you think that tasks characteristics affect the evaluations made of the fit between the functionalities of the electronic lawsuit and the tasks developed with it?