

# E-Justice: A Review and Agenda for Future Research



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**Abstract** As governments are increasingly adopting digitalization reforms to improve public services, the justice domain is no exception. Although not as rapidly grown as the other e-government initiatives, electronic justice or e-justice practices are developed and implemented to make justice services and their administration more open, accessible, effective, efficient, and less expensive for all actors. On the other hand, there are also specific challenges or risks involved in the digitalization of this area, such as the delicacy of the processes, legal restrictions, ensuring the independence of the judiciary, system design, and good user experience, and high interoperability. As a result of the relatively immature nature and the diversity of e-justice systems being used around the world, an integrated research framework outlining the specific areas and topics of research for e-justice and identifying future research directions is still lacking. In light of this gap, this chapter systematically reviews scholarly research on e-justice to present an integrated research framework. We identify 36 key research publications related to e-justice employing Web of Science and Google Scholar and review them to highlight what we know and do not know about e-justice. The study reveals four broad areas of foci about e-justice research in general: Identification of success and risk factors, assessment of the impact of e-justice implementation, examination of e-justice user satisfaction and experiences, and evaluation of judicial websites. For each of the research areas outlined, theoretical foundations, specific research aims, and main findings, and suggested directions for future research are summarized. A future research agenda informed by the results of the review is proposed.

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## 1 Introduction

With the ongoing advancements in the technology field, there arise endless opportunities for the public sector to modernize public service delivery. One of the key public service areas that have significantly benefited from these digitalization initiatives is the justice system. Defined as “the use of information and communication technologies (ICT) in the judiciary/justice system”, the “electronic justice” (e-justice) concept has been on the agenda of public policymakers for many years. Although not as rapidly grown as the other e-government initiatives, electronic justice or e-justice practices are developed and implemented to make justice services and their administration more open, accessible, effective, efficient, and less expensive for all actors.

Along with that, there is a growing interest in academia to understand the effects of these developments for various stakeholders, and also to examine specific challenges or risks involved in the digitalization of this area. On the other hand, as a result of the relatively immature nature and the diversity of e-justice systems being experienced around the world, an integrated research framework outlining the specific areas and topics of research for e-justice and identifying future research directions is still lacking.

In light of these, the purpose of this chapter is to provide an overview of the extant literature on e-justice and identify the gaps to propose a research agenda for the future. By systematically analyzing the existing studies, it seeks to outline what we know and do not know about ICT use in the justice area and to classify their main focus. Overall, the chapter aims to contribute to developing a “scientific base” for digital governance by documenting the existing knowledge on e-justice area as a sub-field of digital governance, categorizing its focus, and proposing a research roadmap, thus “opening the pathway for systematic and reproducible solutions to identified problems, without the danger of repeating research or missing opportunities for application” (Charalabidis & Lachana, 2020a: 383).

In the following sections, first, the meaning and dimensions of the e-Justice concept/phenomenon are explained in detail, including key applications of e-justice that are examined from various aspects. Then, the main functions and benefits of using e-justice systems are explained, and outstanding examples of e-justice applications from different parts/countries of the world are summarized. Next, the methodology of the study is presented. It is followed by the analysis part, where findings from the systematic review of the studies are outlined and discussed, and an integrated research framework is developed. Finally, a future research agenda informed by the results of the review is proposed.

## 2 Conceptual Framework

e-Justice, in its simplest form, can be defined as “the use of information and communication technologies in the judiciary/justice system”. Using technology in the judicial system is not a new phenomenon. According to Politis et al. (2008: 42), the “first generation” of e-justice applications emerged as the introduction of computers in courts during the 1980s. The next (second) generation that followed the computerization/automation phase was the introduction of the information and communication technologies (ICTs), and most notably the Internet, which started in the early 2000s (Politis & Papasteriadou, 2003; Schneider, 2002). Since then, many e-justice applications have been actively used in the judicial systems of many different countries. As early as 2009, Martínez and Abat performed a systematic study of e-justice systems being used throughout the world.

How do e-justice applications relate to the broader topic of e-government? The argument that e-justice is merely the application of e-government in the judiciary is debatable. For example, Politis et al. (2008: 41) believe that e-justice cannot be a simple extension of e-government in the judiciary because of the autonomous position of the judiciary within the government, due to the separation of powers principle. Besides, e-justice applications not only aim to achieve the automation of the existing structure and functioning of the judiciary, but they also aspire to re-engineer and ultimately transform the justice system.

Within this context, the objectives to be achieved by using technology in the justice system can be divided into two, as administrative and political objectives: On the one hand, from an administrative perspective, the objective is to create a justice system that works easier, faster, cheaper, free from human error as much as possible and in a more citizen-oriented manner (Çam & Tanrikulu, 2012: 207–210; Politis & Papasteriadou, 2003). The political objectives, on the other hand, are to increase the legitimacy of the justice system and citizen trust by making the justice system more transparent, accountable, and auditable (Çam & Tanrikulu, 2012: 207–210; Martínez & Abat, 2009: xiii-xiv; United Nations, 2018: 172).

Both administrative and political objectives are compatible with the 2030 Global Sustainable Development Goals set by the United Nations Development Program (UNDP) (United Nations, 2018: 1, 137, 172, 186). For example, within the “Peace, Justice and Powerful Institutions” Goal, which is the 16th Sustainable Development Goal, the sub-objective of “effective management based on the rule of law” perfectly represents the objectives of utilizing e-justice systems (UNDP, 2019).

Several factors triggered the use of e-justice applications (Kengyel & Nemessányi, 2012). These factors were the increase in e-commerce, and significant competitive advantages in a global economy for a country that has an e-justice system, and the rise of the idea of open justice (Sandoval-Almazan & Gil-Garcia, 2020). Reflecting the idea of open justice, Warren (2014) argued that the ubiquitous use of technology, and especially the advent of social media platforms, necessitated the justice systems to embrace technology to make them more transparent and accountable to the public.

Triggered by these factors, many e-justice systems emerged throughout the World. One of the most important applications at the supranational level is the European E-Justice Portal, which is available at "<https://e-justice.europa.eu/>". On this website, various information and documents about the EU member countries' judicial systems are presented in 23 different EU languages. These information and documents have been prepared to assist both citizens and other actors of the judicial system such as government agencies, private companies, and lawyers. For example, a citizen can use the European E-Justice Portal to find a lawyer or a notary public. Private companies can learn about the intricacies of judicial processes in EU member countries. Lawyers can access comparative legal analysis across Europe in the area of their legal expertise.

Another remarkable example of e-justice implementation is the Brazilian e-Justice System, which offers certain benefits, as well as some serious problems. On the one hand, Brazilian courts worked relatively faster and cheaper under the new system. Access to justice services has become easier for some citizens. On the other hand, digital divide problems are experienced as it has become harder for members of the lower socioeconomic groups to have access to the e-justice system (Andrade et al., 2012).

Using technology to make justice systems work faster, cheaper, and more citizen-oriented, as well as more transparent, accountable, and auditable is a proposition no one would object to. However, this is a tall order, and whether e-justice applications indeed achieve these purposes need to be measured and evaluated. Therefore, along with the growing interest in e-justice applications around the world, several studies addressed the observable and measurable outcomes of these initiatives. For example, Doty and Erdelez (2002) examined the impact of the increasing use of ICTs at local courts in the state of Texas, USA, and found no evidence of significant gains in service quality or stakeholder satisfaction. On the other hand, Oktal et al. (2016) surveyed 8840 internal users of judicial services in Turkey and found that they found the e-justice system easier to use and more satisfactory. Lupo (2019) argued that e-justice systems should not be evaluated only from an administrative efficiency perspective. They also need to take into account the values of rule of law, judges' independence and impartiality, equality of access, fair trial, and procedural transparency. Yu and Xia (2020) emphasized the complexity of the evaluation of e-justice systems when they discussed in detail the measurement and evaluation of the technology, management, economy, and societal effects of the e-justice systems in China.

Such evaluation studies need to measure two interconnected phenomena: First, whether there is an increase in efficiency arising from automation in the functioning of the justice system; second and more importantly, whether reengineering of the judicial system justifies the resources spent for this purpose (Çam & Tanrikulu, 2012: 205). Contini and Lanzara (2014), however, argue that redesigning judicial systems at the national level is necessary but not enough for evaluating the outcomes and impacts of e-justice systems. By analyzing the Wales, England, Italy, Portugal, and Slovenia examples, the authors emphasized the necessity to examine and ensure the interaction and coordination of national judicial systems not only with each other but also with transnational levels of justice, such as that of the European Union.

Unfortunately, using e-justice systems is not a magic wand to solve all the problems of the justice system (Martínez & Abat, 2009). On the contrary, they have created several implementation problems. After closely examining the e-justice systems in many countries including the USA, Australia, Belgium, Bosnia and Herzegovina, Brazil, England, Spain, Italy, and Russia; Martínez and Abat (2009) identified the most common implementation problems as information security at organizational and/or national level, protection of the privacy of personal data, and judicial personnel's resistance to technological change.

The risk factors that increase the probability of failure in e-justice systems are also examined. These factors can be listed as deficiencies in technological infrastructure, problems arising from language and communication, coordination and communication challenges among different levels of government, problems in increasing and measuring the quality of service in the field of e-justice, lack of information and training experienced by stakeholders about the functioning of the e-justice system, the possibility of weakening the face-to-face relationship between the citizen and the public administration/justice system (Rosa et al., 2013: 250), as well as the presence of groups that resist e-justice systems (Lupo & Bailey, 2014: 356; Unal & Cherry, 2016: 443, 446).

Although all these implementation problems and risks need to be taken into consideration and be dealt with, there is also great future potential in e-justice systems. The technology that will probably have the highest impact on the justice systems is that of artificial intelligence (AI). As early as 2004, Kiškis and Petrauskas suggested the use of artificial intelligence in classifying judicial data in the Lithuanian e-justice system due to the complexity and difficulty of such a classification. Today, it can safely be foreseen that artificial intelligence applications will be increasingly used in most or all e-justice systems in the long run.

The potential uses of artificial intelligence applications in the judicial system are examined with the help of several country examples in a 2017 special issue of the "Artificial Intelligence and Law" journal (Bex et al., 2017). According to these examples, as a future scenario, artificial intelligence will be introduced as an add-on to the existing justice systems. For example, potential plaintiffs, who are undecided about whether to file a lawsuit or not can easily ask for a prediction from the artificial intelligence application about the probable course, cost, and outcome of the case—within a certain margin of error—if they chose to go to court. Based on this prediction, they may decide to file a case or not.

In an alternative scenario, AI will not be complementary to the justice systems, but it will be a replacement. This second scenario predicts a system in which judge, prosecutor, and/or lawyer robots equipped with AI and autonomous decision-making capabilities or purely artificial intelligence employed in the judicial systems without a physical intermediary will take over justice systems. In other words, "judicial public service robots" with artificial intelligence will dominate the judiciary. Despite the risks borne by human errors in the justice system, the preference of not eliminating the "human element/touch" will likely overrule the overwhelming use of AI and/or AI-assisted robots in justice systems, at least in the short term (Morison & Harkens, 2019).

Finally, a second major contribution to e-justice systems comes from big data analysis. The justice data produced and collected by the e-justice systems can be used for big data analysis and data mining (Chatfield & Reddick, 2020; Lyon et al., 2015). Consequently, data-driven public policies can be designed to predict and prevent problems before they arise in the justice system.

### 3 Methodology

The research methodology adopted for this study is a systematic literature review, which includes systematic identification of the relevant literature on the chosen topic and doing content analysis. (Clarival et al., 2020; Jabbour et al., 2020). This section details the review protocol that guided the analysis.

The main literature search was conducted in the Web of Science Core Collection (WoSCC) database of Thomson Reuters in April and June 2020. Boolean expressions of “e-justice” or “electronic justice” in the “topic” section (title, abstract, and keyword) were applied for identifying the target publications in the first sequence. Since the keywords are put in the “topic” section, not in the “title” section, some related words like “digital justice” are assumed to be covered by the Boolean search. The year of publication was not indicated in the search. 85 publications meeting the initial search criteria were obtained, including journal articles, book chapters, conference proceedings, editorial material, and a book. Publications not written in English were eliminated from the results; after this step, 74 titles remained. Next, the researchers screened these publications to choose the ones that directly focus on the use of ICTs in justice. Thus, all the selection criteria used in the study resulted in 33 major publications to be reviewed, including journal articles, an edited book, book chapters, and conference proceedings. Besides, the authors screened Google Scholar using “e-justice” or “electronic justice” keywords to analyze any key publications that might have been omitted in the previous search. One journal article, one book chapter, and one conference proceeding that directly addressed the e-justice topic were identified. Ultimately, 36 publications were systematically reviewed in the study.

The analysis part of the study was conducted, first, by recording the type and year of each publication, research questions/purposes of the studies, theoretical frameworks (if any), main findings, and the suggested directions for future research. Next, the studies are reviewed in depth by two researchers to extract some keywords and propose a classification for their foci. Each of the researchers read the publications separately and completed a table containing the extracted keywords for the main research themes and their proposed categorization. The content analysis findings were then compared for each paper. In the case of a disagreement on classification, a third researcher was involved in the process and a consensus was reached. Finally, a categorization of the existing research on e-justice is achieved, revealing four main research streams. Based on this analysis and the identification of the research gaps in the existing studies, a future research agenda on the e-justice area is proposed.

## 4 Analysis and Findings

### 4.1 Description of the Publications

A detailed summary of the publications reviewed is provided in Appendix. Looking at the chronological distribution of the publications first, as shown in Table 1, the time span covered by the reviewed publications runs from 2006 through 2020. It is observed that there is a growing interest in the studies addressing e-justice, especially in the last two years (2019, 2020). In addition, 2009 is highlighted as a year that the e-justice topic was trending. The analysis of the three publications published in 2009 (including an edited book with 12 chapters) indicates that they tend to focus on different countries’ experiences with e-justice.

Examination of the type of publications reveals that 13 of the 38 reviewed publications are peer-reviewed journal articles, 6 of them are book chapters, 1 of them is an edited book with 12 chapters, and 5 of them are conference proceedings. In terms of the Web of Science Categories, the subject areas of the publications tend to be “Law”, followed by “Computer Science Information Systems”, “Computer Science Interdisciplinary Applications”, and “Information Science Library Science”. Moreover, the reviewed journal articles are mainly published in *Social Science Computer Review; Informatics; Aslib Journal of Information Management; International Journal of Law, Crime, and Justice; and Government Information Quarterly*.

The most commonly used methodological approach in the analyzed publications is the qualitative method, including case studies of e-justice implementation based on different countries’ experiences. It is followed by conceptual papers addressing different dimensions of e-justice. Notably, there are also a few quantitative studies that develop and test some models in the e-justice area.

**Table 1** Chronological distribution of the reviewed publications

Year	Number of publications
2020–June	4
2019	5
2018	2
2017	2
2016	1
2015	2
2014	1
2013	1
2011	1
2010	2
2009	3 (including one edited book with 12 individual chapters)
2006	1

Although not frequently observed, there are various conceptual backgrounds and theoretical lenses used in the reviewed publications, such as formal system theory; collaborative governance framework; public value framework; socio-technical perspective; task-technology fit theory; technology acceptance model and internal user satisfaction model; tight and loose coupling; ICT governance framework; digital convergence; and policy networks.

The content analysis of the publications and related findings are discussed in detail in the following section.

## ***4.2 Content Analysis and Findings***

Two researchers separately analyzed the titles, abstracts, keywords, and the overall focus of the studies to identify what the common themes and research motivations in e-justice research are. For each study, each researcher manually coded the main research focus with some keywords related to the studies. These two groups of content analysis findings were then compared with each other to propose some common categories of research themes, based on the researcher-identified keywords. Overall, the analysis of the studies revealed that it is possible to extract four main categories of research motivations from the reviewed publications:

- (a) Identification of success and risk factors or problem areas for e-justice implementation (lessons learned from country case studies)
- (b) Assessment of the impact of e-justice implementation, and developing and testing an assessment framework
- (c) Examination of e-justice user satisfaction and experiences, and related technology design principles
- (d) Evaluation of judicial websites.

Accordingly, Table 2 presents the categorization of the reviewed publications based on their research focus, sorted by the date of publication.

Most of the reviewed publications fall under a single category of focus, whereas four papers appear to deal with more than one subject related to e-justice. When examined chronologically, the research orientations of the publications tend to be more diverse in the last five years, compared to the earlier years. The main research motivations of the studies, an overview of the major findings in each research area, and avenues for future research are elaborated in detail in the following sections.

### **4.2.1 Research Focus: Identification of Success and Risk Factors or Problem Areas for E-Justice Implementation**

The most commonly addressed issue in the studies stands out as the identification of challenges, risks, and problems experienced in e-justice implementation in different countries, as well as the critical success factors for e-justice projects. More



**Table 2** Categorization of the reviewed publications based on their research focus

Publication ID#	Date	Success and risk factors for e-justice implementation (lessons learned from country case studies)	Assessment of the impact of e-justice implementation; along with developing and testing an evaluation framework	Individual experiences and user satisfaction with e-justice; and related technology design principles	Judicial website evaluation
27	2006		X		
26	2009	X			
6	2009	X			
7	2009		X	X	
8	2009		X		
9	2009		X		
10	2009		X		
11	2009	X			
12	2009	X			
13	2009	X			
14	2009	X			
15	2009	X			
16	2009	X		X	X
17	2009	X			
18	2009	X			
25	2010			X	
5	2010	X			
20	2011	X			
24	2013	X			
34	2014			X	
22	2015			X	
35	2015		X		
21	2016			X	
19	2017			X	
3	2017				X
28	2018	X			
36	2018		X		
23	2019	X			
29	2019	X			
31	2019	X			

(continued)

**Table 2** (continued)

Publication ID#	Date	Success and risk factors for e-justice implementation (lessons learned from country case studies)	Assessment of the impact of e-justice implementation; along with developing and testing an evaluation framework	Individual experiences and user satisfaction with e-justice; and related technology design principles	Judicial website evaluation
32	2019			X	
4	2019		X		
1	2020	X	X		
2	2020	X			
30	2020				X
33	2020		X	X	
Total		19	10	9	3

specifically, 19 of the 36 publications reviewed focus on the lessons learned from country experiences with e-justice applications in that respect; some of them included comparisons.

Analyzed studies suggest that there are various factors, parameters, and dimensions that could be attributed to all the stakeholders as policy designers, users, partners, and judicial personnel to varying levels. Among these, we have observed various technical, organizational, administrative, and legal concerns that could affect the design, initiation, implementation, sustainability, and smooth functioning of the e-justice frameworks and systems.

First of all, studies in the analyzed literature attribute importance in the design and initiation process. For example, Rosa et al. (2013) point out a finding that “the initial design phase and the continuous development scrutiny. If the initial architecture is poorly planned due to misinterpretations of the requirements, the entire project may be at risk” (p. 254). Kitoogo and Bitwayiki (2010) assert the necessity for strategy, guidelines, and a steering committee for the implementation, an inventory of existing procedures, projects, and synergies for the sake of integration and internal and intra-organizational sharing, raising the awareness concerning existing and future campaigns of e-Justice. Regarding the pre-implementation process, Poulet (2009) asserts that a pilot case or an experimental approach may serve as functional “to progressively convince all the stakeholders of the benefits of the project and to hear from them their expectations about such a project” (p. 187). Similarly, Gascó and Jiménez (2011) give importance to the existence of a pilot project that would be very effective in detecting error or failure possibilities.

Regarding the pre-design processes of e-justice frameworks and systems, some studies warn about the types and styles of how the administration and institutions of the judiciary being set and functioning. It has crucial importance of analyzing how the

organizational systems are set up and how they are organizationally and procedurally functioning, among others, before commencing to inject any additions into them. Similarly, Rosa et al. (2013) argue that “the introduction of information systems as a tool to help in an organization structure changes the organization itself. People in the organization have to be aware of these changes. To avoid shocks related to the use of new information systems, people should take part in training sessions. The training sessions should cover two aspects: general ICT skills and specific information system skills.” (p. 255).

As simply put by Contini and Cordella (2009) “the right match between the nature of the coupling in the organization activities and procedures and the nature of the information (p. 126) is crucial to evaluate since the effects of ICTs do not define the way in which organisational procedures are performed but rather emerge as a result of their interplay with organisational elements.” (p. 130). In a similar vein, Filho and Veronese (2009, p.136) argue that the introduction and development of ICTs into a country’s judicial system should be a consolidation of novel technologies with managerial arrangements through law-based standards. According to them (2009, p. 136), the introduction and functionality of the e-Justice system, as managerial arrangements, “are built after a critical observance of everlasting problems”. In this context, Fabri (2009) argues that the advancement of ICTs development in the judicial context is just a requirement for the successful implementation of e-Justice, not sufficient for achieving the end targets alone.

Secondly, there are many concerns raised regarding the implementation process. We have observed a great number of risk and success factors. Rosa et al. (2013) argue that the question of how the development team of the e-justice system would be picked, in-house or outsourced, is decisive on the sustainability of the system. “More than the development model, the subsequent maintenance model adopted may also be of significant impact in terms of support and development of new features (Rosa et al., 2013, p. 254). Because, according to them (2013) in e-justice systems, if there is a knowledge gap between design and use deriving of the inconsistency, then this may impair the whole system and functioning. For a related perspective, Kitoogo and Bitwayiki (2010) put forward very substantial considerations as to who will govern the implementation of e-Justice and how given the additional legal issues and challenges to emerge following the introduction of e-Justice initiatives. Gascó and Jiménez (2011) argue that training and communication could be decisive elements to reverse the resistance, in addition to stating that participation and collaboration of key actors are important. Henning and Ng (2009) state that since the e-justice systems represent “the nexus of technological innovation and organisational and institutional change. In order to achieve the expected benefits from ICT in public organisations, work processes need to be re-engineered, whilst responsibilities and authority locations are shifting.” (p. 27). Mediation, according to them, constitutes one of the important parameters in the implementation process of e-Justice systems and frameworks.

There would probably be some sort of impracticality, the existence of too many techno-legal barriers, and difficulty in using the infrastructure and the services provided (Velicogna et al., 2020) since the e-Justice frameworks include various

stakeholders, including those who never face a series of judicial processes. Fabri (2009) argues that several factors affect the success of e-Justice systems, particularly in the implementation process, as interoperability issues between intra-, inter-organizations, and country systems, ICTs literacy, or negative perceptions at the end-user side but employee and institutional competency at provider side. Gascó and Jiménez (2011) assert that interoperability is the crucial element due to its provision of harmonic and cohesive functioning of different judicial systems and frameworks. The perception of whether the introduction of ICTs is the end goal, or a mediator to reach the end goal is effective on the smooth implementation of e-Justice systems. Martínez (2009) takes attractions to the “plurality of actors with competencies in the administration of justice and the lack of mechanisms” for coordination (p. 98).

Taking a solely organizational point of view, Contini and Cordella (2009) argue that the organizational structures, loosely or tightly coupled, are of crucial importance in the e-justice systems. Contini and Cordella (2009) make a distinction on the effects of ICTs in judicial administration between organizational structures in such a way that the implementation of ICTs under information system perspective to automate existing procedures smoothly seems to have positive effects on the management of tightly coupled systems (p. 130). According to them (2009, 130) loosely coupled e-Justice systems are supposed to be supported through the implementation of either independent or ad hoc implementation of ICTs, particularly emerging as a result of projects starting from the bottom up. Filho and Veronese (2009) assert that e-Justice systems and frameworks are dynamic, not static. Thus, it is important to think of the e-Justice design process is not reflected as an end-product, not to be evaluated as a formation of a steady state. Additionally, according to Martínez (2009), difficulty to get the relevant and necessary information on judicial matters poses a risk for the smooth functioning of the e-Justice system since the judiciary is one of the powers forming the state, independent of executive and legislative powers. Filho and Veronese (2009) take attraction to the risk of integrating novel and revolutionary technological tools in a very competitive and highly changeable environment where things are continuously evolving, including both quantitative and qualitative transformations on the business of courts and judicial personnel. For the sake of systemic integration, Pouillet (2009) argues that the internet in general and the ICTs in particular, generally speaking, have the potential to present an opportunity concerning judicial systems but they also require an “absolute need to integrate the different databases” (p. 187).

Potter et al. (2009) argue that countries are supposed to be conscious of their strengths, and should be in continuous need of looking to other centers of expertise around “to weigh up those advances against the demands of local justice system” (p. 181). They (2009) also argue that technology integration and interoperability issues among the different components of the judicial system could deter if the system fails to keep up with the necessary developments as an entity. In addition to cultural issues, conservatist behaviors among judicial personnel and early resistance, and “a reactive approach to technology” (p. 166) use should be taken into full consideration.

Thirdly, we have observed some concerns following the implementation or post-implementation process. For example, Fabri (2009) takes attraction to the lack of

project evaluations. According to Wallace (2009), whether and how technology is used “to create an accessible, inexpensive, transparent, and efficient system of justice could be evaluated as success factor” (p. 219). Sarantis and Askounis (2009) state that, though the presence of some challenges deriving from organizational, systems, and other stakeholders’ aspects, citizen satisfaction and positive perception regarding the use of ICTs has been substantial on e-Justice systems and frameworks. Particularly some factors concerning design, legal and regulatory framework, actors, stakeholders, cooperation, the transformation of administrative culture, risk management are of importance concerning the smooth functioning of e-Justice systems. Gascó and Jiménez (2011) assert that the adoption and sustainability of ICTs in the judiciary seem to conditional upon access to justice, coordination among institutions, and strengthening the judicial system.

Fourthly, there are also various success/risk factors and concerns pointed out concerning security and privacy issues. Fabri (2009) has found that information and data security issues are of crucial importance. Privacy requirements and security concerns and issues of data protection, in addition to those posed by separation of powers, are at stake for e-justice systems (Pouillet, 2009). In a similar vein, Trochev (2009) argues that the decentralized nature of the judiciary may have effects on smooth functioning concerning e-Justice frameworks and systems, resulting in a more sporadic appearance. Trochev (2009) asserts that the e-Justice efforts would have fruits on a persistent base “if only to ease the burden of an overloaded judiciary and to improve its reputation” (p. 200). Borisova and Afanasiev (2019) argue that differentiation between theory and practice may occur (conflicts between the law and departmental acts may emerge). There also could be non-consistent provisions in both judicial and e-Justice systems, and thus, the need for continuous checks throughout the systems is at stake. They state that “the main obstacle for e-justice is a lack of a centralized unified regulatory framework governing the legal relations” (p. 404).

#### **4.2.2 Research Focus: Assessment of the Impact of E-Justice Implementation, and Developing and Testing an Assessment Framework**

The content analysis indicates that the second most common motivation in the reviewed studies is the assessment of the impact of e-justice implementation, with 10 publications addressing this matter. Publications that fall under this category usually include case studies of different e-justice technologies or projects, discussing the specific technologies and their effects in the justice area. Also, a few studies develop and test an evaluation framework for measuring the outcomes of e-justice.

The publications listed in this category generally suggest that e-justice systems lead to higher operational effectiveness, efficiency, and standardization in court administration, as well as enhanced openness and accessibility of justice (Chatfield & Reddick, 2020; de Vuyst & Fairchild, 2006). Particularly, access to digitized court documents and electronic data interchange help judges and lawyers speed up trial

judgment, and increase access and convenience, simplify procedures, and reduce the cost for the court users (Tokarev et al., 2019; Tyler, 2009). For example, Kramer et al. (2018) argue that e-justice simplifies the actual access to court (and out-of-court) proceedings, by distance court hearings and allowing the online submission of claims. Besides, findings indicate that an important impact of e-justice is the modernization of the judicial systems as a whole (Arias & Maçada, 2020), which in turn expands the quality of public services and transparency of court proceedings, and prevents corruption (McMillan, 2009; Poblet et al., 2009).

Studies also imply that e-justice technologies may affect various justice stakeholders (judges, lawyers, court managers and employees, and ordinary citizens) differently in various contexts. For example, Poblet et al. (2009) highlight a web-based application “Juriservice” particularly developed for judges, where “the judge describes the problem at hand, and the application responds with a list of relevant question–answer pairs that offer solutions to the issue, together with a list of relevant judgments”. Thus, the impact of e-justice systems may be evaluated by utilizing the perspectives of different users, or by employing different evaluation criteria or “values”, for example, in terms of their effects on judges’ or employees’ efficiency and effectiveness, or on citizens’ satisfaction, or considering the overall contributions to achieving procedural justice in social security (Adler & Henman, 2009).

In line with this, Arias and Maçada (2020) propose an evaluation framework that integrates technology functionalities, task requirements, and individual characteristics. In a similar vein, Lupo (2015) develops an e-justice assessment framework that combines efficacy-related variables such as system and information quality, user satisfaction, and organizational benefits with variables that focus on the judicial values that e-justice should support, such as independence, equal access, and impartiality.

### **4.2.3 Research Focus: E-Justice User Satisfaction and Experiences; and Related Technology Design Principles**

A third category of focus in the reviewed articles is e-justice user satisfaction and experiences; and related technology design principles. Eight publications listed under this category generally aim to address what the experiences of the users with e-justice systems are, and how the design of the technologies may be improved to fit them better to the specific needs of the justice context.

From the in-depth analysis of the studies in this category, a number of conclusions and avenues for future research emerged. First, it is emphasized that adjusting e-justice systems, particularly court websites, according to the needs of various users of the judicial system, such as judges, lawyers, law-enforcement agencies, actual litigants, the general public and scholars is a must for a successful e-justice system (Trochey, 2009; Poblet et al., 2009). The studies suggest that these users may have different expectations and concerns in using the e-justice interfaces; thus, the design of the applications needs to consider how users with various profiles interact with these systems. For example, internal users are found to prefer a simplified system

interface and also expect the technical specialists to have sufficient experience on the system to provide the essential technical support (Oktal et al., 2016). Open data, transparency, and interoperability emerge as additional requirements related to citizen-oriented designs (Cano et al., 2015). Thus, it is proposed that in the design and implementation of e-justice initiatives, consultation with judges and other court staff as well as engagement with other potential users can be highly beneficial to achieving positive outcomes, and to ensure acceptance of the e-justice systems.

Similarly, it is argued that a better task-technology fit may enhance individual performance and public service quality (Arias & Maçada, 2020: 14). For instance, automatic template filling, semantic enrichment of the judicial folder through audio and video processing, and enhanced transcription process are found to be the qualities that judges and lawyers tend to appreciate in e-justice applications (Fersini et al., 2010). On the other hand, in a discussion of the digitalization in justice case, Shahbazov (2019: 53) underline the concerns related to the design of the electronic monitoring systems for offenders. While considered to be useful, “tech-savvy” and “creative” offenders can find ways to get around this technology and restrictions imposed upon them.

A related significant point raised by the reviewed works is that, while contemporary e-justice applications are developed by third-parties with a more user-centric approach and contribute to an innovative and smarter service provision, they may also “open justice services up to the risk of compromising institutional values and destabilizing consolidated practices” (Velicogna, 2017: 14).

#### **4.2.4 Research Focus: Judicial Website Evaluation**

In the final category of research orientation, three of the reviewed publications are concerned with the evaluation of judicial websites. They specifically analyze the contents of the judicial websites as to the type, quantity, and quality of information, openness, and participative characteristics. Some publications additionally propose a judicial website evaluation model or offer comparative studies on the judicial websites of different countries.

According to the reviewed publications, judicial websites mainly serve as a source to inform the public and the mass media about court decisions. In line with this, it is emphasized that the availability of up-to-date and accurate information, accessibility, openness, and protection of the confidential data on the websites are the major features that should exist in these systems (Abdulvaliev, 2017; Trochev, 2009). In addition, in one of the studies evaluating judicial websites, one noticeable finding was that most judicial websites are not oriented toward citizen participation or engagement (Sandoval-Almazan & Gil-Garcia, 2020).

Studies also point out that well-maintained and well-designed court websites can be effective in improving the administration of justice and promoting the image of the judiciary in the eyes of the public (Abdulvaliev, 2017; Trochev, 2009; Sandoval-Almazan & Gil-Garcia, 2020).

## 5 Discussion: A Research Agenda for E-Justice

This section elaborates on a future research agenda for e-justice informed by the results of the systematic literature review. The discussion includes an overview of the gaps in e-justice research identified by the reviewed publications themselves, as well as the insights gained from the analysis of the main motivations, findings, and conclusions in the reviewed publications.

The four main research areas identified in the e-justice research with their main underlying issues are summarized in Table 3.

Constituting the bulk of the studies in e-justice, identification of success and risk factors or problem areas for e-justice implementation is a major concern for research in this area. Analyzed literature in this category draws some potential prospects and point out future directions as well. According to Velicogna et al. (2020), more studies are needed in the direction of ensuring “careful monitoring of the change, early discovery of problems, and the possibility of quick intervention where necessary”. Kitoogo and Bitwayiki (2010), taking a comparative perspective, argue that there is a need for studies to “contribute significantly to the sharing of experiences towards the implementation of e-justice that will culminate in a cohesive framework” (p. 48). In a similar vein, Fabri (2009) calls for prospective studies particularly focusing on organizational structuring of judicial administrations with a particular emphasis on the effects of ICTs. Thus, according to Fabri (2009), the presence or lack of a steady “exchange of information between scholars, practitioners, and policymakers to share

**Table 3** Main research areas in e-justice domain

E-Justice research area	Description
Identification of success and risk factors or problem areas for e-justice implementation	Investigating the challenges, risks, and problems experienced in e-justice implementation in different countries; Comparing e-justice systems in different countries; Identifying the critical success factors for e-justice implementation
Assessment of the impact of e-justice implementation	Conducting case studies of different e-justice technologies or projects; Discussing the specific technologies and their effects in the justice area; Developing and testing an evaluation framework for measuring the outcomes of e-justice
E-justice user satisfaction and experiences; and related technology design principles	Examining what the experiences of different users with e-justice systems are; Exploring how the design of the technologies may be improved to fit them better to the specific needs of the justice context
Judicial website evaluation	Assessing the type, quantity, quality, security, and accessibility of information on the judicial website; openness, and participative characteristics; development of a website evaluation model



the knowledge that has been attained in different contexts” (p. 13) would be of greater importance. Martínez (2009) asserts that, since the analysis of e-Justice frameworks is not well-developed yet, there is a growing need for papers to focus on the regulation of the ICTs in the administration of justice, examination of sociological perspectives, and how to conduct extended learning programs for the stakeholders, particularly for the operators, in the field.

For organizational and administrative dimensions, Contini and Cordella (2009) pledge for studies to conduct on the ICT development issue for loosely coupled organizations and the studies on the integration of “the loose coupling of judges and prosecutors with the tight coupling of the administrative staff” (p. 131).

Filho and Veronese (2009) point out that, not just normative or judicial perspectives, there is also a need to focus on social, technical, or theory-related studies concerning e-Justice system and frameworks, studies of comparative nature and focusing on harmonization, for intra-, inter-organizational, and governmental levels. In a similar vein, Gascó and Jiménez (2011) propose more conceptual, theoretical, and empirical studies Poullet (2009) directs prospective studies on focusing on data protection, user privacy, and security issues. Sarantis and Askounis (2009) argue that there is a need to evaluate why “the judiciary world seems to be afraid that computers will take away some of its independence”? (p. 133).

Borisova and Afanasiev (2019), taking a comparative perspective, argue that papers and documents about successful implementations of e-Justice cases abroad are of importance when the evolutionary nature of e-Justice systems is taken for granted.

Henning and Ng (2009) point out a need that “future studies should therefore investigate how tension between the need for flexible arrangements (such as collaboration protocols) and the need for accountability can be resolved” (p. 42).

Given the complexity and multidimensional nature of the e-justice systems, the reviewed studies in the assessment of the impact of the e-justice implementation category highlight the requirement for more research on the evaluation of open justice and e-justice implementations. It can be argued that future research needs to analyze a greater number of and diverse justice users with different profiles in impact evaluations of e-justice. For that purpose, it is suggested that quantitative studies may be designed. Particularly, the reviewed publications call for a greater number of empirical studies in developed and developing countries. Furthermore, they imply that issues such as the distributional implications of e-justice or the impact of the “digital divide” should also be considered in evaluative studies of e-justice.

Overall, the reviewed publications in the examination of e-justice user satisfaction and experiences category highlight the need to consider users’ perspectives in designing justice-related technologies. Notably, it is observed that the effects of demographic and socioeconomic characteristics of the e-justice users are not sufficiently addressed in the existing studies. Thus, future investigations on e-justice may focus on developing models for user-centered evaluation that integrate individual and organizational dynamics. Also, it is suggested that the generalizability of such studies needs to be improved through quantitative studies with larger samples, and comparisons across different times and places.

Finally, in terms of the research gaps in judicial website evaluation topic, the reviewed publications highlighted the need to know more about the structure, usability, content, and impacts of judicial websites, and how they are linked with e-justice and open justice concepts (Sandoval-Almazan & Gil-Garcia, 2020). It is emphasized that future studies may focus on the main factors, such as political influences, that might relate to the openness, participation, and collaboration features of the judicial websites. Along with that, evaluative frameworks may be developed and updated to better analyze citizen perceptions, attitudes, and behaviors related to judicial websites in light of new information needs, and growing developments in ICTs (Sandoval-Almazan & Gil-Garcia, 2020).

As we have noted in the previous sections, given the relatively immature nature and the diversity of e-justice systems, there is a need for integrated research frameworks outlining the field for e-justice, and thus, we, in this part, aim to identify future research directions. There are four research areas that this study addresses after conducting the SRL. Regarding the first research focus, it should be noted that most of the studies examined fall in this category. However, just as the justice system is country-specific, benchmarking among these fields could hardly yield practical results. However, identification of risk and success factors would be beneficial particularly for policy transfer among justice systems when and where possible. Thus, this research focus should be particularly addressed by both qualitative and quantitative prospective studies. The second research focus is on the assessment of e-justice systems. There are various studies in the related literature focusing on the assessment of e-justice systems, mainly on country-specific. As we argued previously, countries adopt or adapt justice systems from some sources; however, these systems follow their path in time. Thus, studies directed to assess any e-justice systems could also be beneficial for other countries, particularly for newcomers in this regard. Specifically, qualitative case studies could be insightful for this purpose. The third research focus is on a more micro-level when compared to the first two other research focuses. Regarding this focus, we think that efforts directed to the e-justice field could have yielded more practical and end-user results. Therefore, studies targeting this research focus should be more addressed when political and societal motives are at stake. The last research focus is more suitable when benchmarking efforts are taken for granted since website design is crucial when citizens and all other shareholders are taken into consideration. Thus, we plea there should be more research devoted to the last focus if the international audience is targeted. In addition, quantitative large N studies may further help with identifying the patterns in factors affecting e-justice adoption around the world.

## 6 Conclusion

As proposed by Charalabidis and Lachana (2020b: 216), “the lack of scientific foundations in the Digital Governance domain seems to hinder unlocking the real transformative value and full potential to all its stakeholders, from researchers to industry and

SMEs”. They further suggest that “by organizing and documenting systematically the (existing) knowledge and practice of the domain there will be a lot to be gained for societies and administration” (2020: 216). While the advantages of implementing e-justice initiatives have been widely recognized around the world, less is known about the current state of the art on use of ICTs in the justice area. As a sub-field of the digital governance area, an integrated research framework is still lacking in the e-justice domain. Accordingly, this study has systematically reviewed the existing studies to identify what we know and do not know about e-justice, classified the main foci of the existing research, and proposed future directions for research.

Overall, this chapter contributes to the development of a digital governance science base (Charalabidis & Lachana, 2020b: 218), mainly by decomposing the e-justice research domain and proposing a research road map. More specifically, it presents an outline of the existing studies on e-justice using a wide-ranging time span and categorizes them to provide a more integrated research framework. Besides, the study reveals research gaps in the extant literature to promote future investigations on e-justice. Finally, by identifying the critical success factors, risks, and challenges related to e-justice initiatives in the reviewed studies, the study offers practical lessons for practitioners in this area.

The main themes of the reviewed studies generally imply that e-justice research is more oriented toward the analysis of practical problems that may arise in the implementation of ICT projects in the justice area, and understanding the extent to which e-justice achieves the desired outcomes. Although this is reasonable and highly valuable considering the delicacy of the justice services, diversity of the stakeholders, and the complexity added by ICT use, it can be argued that e-justice research needs to develop further in its theoretical foundations as well. In doing so, particular attention needs to be paid to develop evaluative frameworks that include a diverse set of values. As emphasized by Lupo (2015), integration of efficacy-related variables such as system and information quality, user satisfaction, and organizational benefits, with the variables related to judicial values, such as independence, equal access, and impartiality can be fundamental in developing assessment frameworks of e-justice. In addition, it is suggested that the distributional implications of e-justice in light of the digital divide framework are explored further in future e-justice studies.

Lastly, this study has some limitations as well. Concerning the methodology, it should be noted that this systematic literature review is limited to the publications including specific keywords in the title, abstract, and keyword areas, and written in English. The review is also limited to examining the content of publications found in the Web of Science mostly. Therefore, there may be additional publications addressing the e-justice topic, which were left out of the study sample.

## Appendix: Description of the Reviewed Publications

	Full citation of the publication	Publication type (conference, book chapter, journal article)	Research question(s)/purposes of the study	Theoretical foundations (if any)
1	Chatfield and Reddick (2020)	Journal article	“What are key enablers and inhibitors for strategic alignment between the open justice ecosystem and the e-justice ecosystem?”	Formal system theory; Collaborative governance framework; Public value framework
2	Velicogna et al. (2020)	Journal article	How do EU institutions manage and perform harmonization and facilitation of judicial cooperation given a dynamic environment where laws, technologies, economies, and cultures of EU and member states co-evolve?	Making a theoretical link between e-justice and the notion of open justice (an initiative to combine the open justice principle and open government discourse)
3	Abdulvaliev (2017)	Conference proceeding	To analyze the quality, openness, and availability of the websites of law courts of the Federal Republic of Germany and the Russian Federation	None
4	Tokarev et al. (2019)	Book chapter	To evaluate the development of e-justice and its impacts in Russia	None
5	Kitoogo and Bitwayiki (2010)	Conference proceeding	Is there a justified need in moving the e-Justice implementation as a sector? If so, what is the current status and developments concerning ICTs in e-Justice in Uganda?	None

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	Full citation of the publication	Publication type (conference, book chapter, journal article)	Research question(s)/purposes of the study	Theoretical foundations (if any)
6	Fabri (2009)	Book chapter	How is the diversity of ways by which the EU members are “harnessing ICTs to support the operation of their legal systems, and it identifies different strategies as well as tools developed” by taking Italy as a case study for comparison?	ICT governance framework
7	Poblet et al. (2009)	Book chapter	To examine the experiences of Spanish judges with Iuriservice, a Web-based system designed to provide the Spanish judiciary with a tool to facilitate knowledge management in daily judicial practice	None
8	McMillan (2009)	Book chapter	To elaborate on the issue of judicial corruption and how automated system functions may help reduce corrupt practices	None
9	Adler and Henman (2009)	Book chapter	To evaluate the impact of ICTs on the operation and transformation of procedural justice in social security	None
10	Tyler (2009)	Book chapter	To discuss the impact of online dispute resolution (ODR)	None
11	Martínez (2009)	Book chapter	How electronic media can be used in the administration of justice to improve the development of e-justice?	None

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	Full citation of the publication	Publication type (conference, book chapter, journal article)	Research question(s)/purposes of the study	Theoretical foundations (if any)
12	Contini and Cordella (2009)	Book chapter	How the institutional context deeply affects the deployment of ICT, tools to improve the management, operational efficiency, and the consistent application of rules to strengthen the governance of the system in the judiciary?	The concepts of tight and loose coupling and their application in the field of organisational theory
13	Filho and Veronese (2009)	Book chapter	How ICTs are included in and are shaping the future of the Brazilian judiciary?	Digital convergence
14	Potter et al.(2009)	Book chapter	The paper looks “at the pressures ICT has created on traditional courtroom workflows, and how Australian courts have responded to them” (p. 166) by tracing the historical path ICTs follow concerning courtrooms and their effects. The paper also evaluates whether, if so how, benefits and drawbacks are uniquely attributed to the country case	None
15	Poulet (2009)	Book chapter	If computerization is at stake for all Courts and Tribunals in Belgium with the help of ICTs for all stakeholders, then what “legislative measures that have been taken, mainly in relation to data protection and legal value of the documents generated by the use of the electronic procedure” would be?	None

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	Full citation of the publication	Publication type (conference, book chapter, journal article)	Research question(s)/purposes of the study	Theoretical foundations (if any)
16	Trochev (2009)	Book chapter	To focus on “websites of Russian courts as the virtual gateways” and discuss challenges of adapting Russian court websites to the needs of various users of the judicial system” (p. 196)	None
17	Wallace (2009)	Book chapter	To discuss Australia’s experience in the field of e-Justice from past to date	None
18	Sarantis and Askounis (2009)	Journal article	Description and analysis of the computerization process of the paper-based criminal record system in a public organization in a particular country case (Greece)	None
19	Velicogna (2017)	Journal article	“To analyze EU e-Justice experience with the ‘API-for-Justice’ project, which investigates the challenges of opening up the European e-Justice Digital Service Infrastructure to external service providers by means of Application Programming Interfaces (APIs)” (p. 1)	Socio-technical perspective
20	Gascó and Jiménez (2011)	Conference proceeding	What factors conditioned the implementation of interoperability modules in the e-justice field? Additionally, the paper also aims to find answers about implementation, success factors, key actors, and lessons to be drawn	None

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	Full citation of the publication	Publication type (conference, book chapter, journal article)	Research question(s)/purposes of the study	Theoretical foundations (if any)
21	Oktal et al. (2016)	Journal article	To develop an evaluation model for the National Judiciary Informatics System (NJIS), and to propose a framework for describing both the dimensions of satisfaction and the acceptance of the e-justice system by the internal users	Technology Acceptance Model and Internal User Satisfaction
22	Cano et al. (2015)	Conference proceeding	To discuss using ICTs, how a more open justice with the citizen as the first requirement for a judicial system can be considered	None
23	Borisova and Afanasiev (2019)	Book chapter	“To reveal collisions and gaps of a legislative framework containing rules of digital technology application in the administration of civil justice to highlight the prospects for the unification of the procedural legislation” (p. 403)	None
24	Rosa et al. (2013)	Journal article	To analyze and make discussions on various e-Justice experiences worldwide and put a special emphasis concerning risk factors on the design, development, and implementation of e-Justice systems. Then, to focus on the development of an e-justice information system of a particular country case (Cape Verde)	None

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	Full citation of the publication	Publication type (conference, book chapter, journal article)	Research question(s)/purposes of the study	Theoretical foundations (if any)
25	Fersini et al. (2010)	Conference proceeding	“The main aim of this paper is to show how JUMAS has provided judicial users with a powerful tool to fully exploit the knowledge embedded into multimedia judicial folders.” (p. 51)	None
26	Henning and Ng (2009)	Journal article	“What is the role of legal frameworks for mediation and legitimization of collaborative implementation in inter-organisational e-justice projects?” (p. 27)	the concerted action of multiple policy actors in the context of policy networks
27	de Vuyst and Fairchild (2006)	Conference Proceeding	To evaluate e-justice in Belgium	None
28	Kovalenko and Bernaziuk (2018)	Journal article	“To interrogate and reveal the current issues of financing electronic legal proceedings” in a particular country case (Ukraine) (p. 100)	None
29	Nikolaychenko and Nikolaychenko (2019)	Book chapter	To identify “the features of the regulatory framework and the existence of ‘e-justice’ in Russia and the world by analyzing barrier-free legal services in the justice administration and the transformation of the procedural duties of the courts” (p. 379)	None

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	Full citation of the publication	Publication type (conference, book chapter, journal article)	Research question(s)/purposes of the study	Theoretical foundations (if any)
30	Sandoval-Almazan and Gil-Garcia (2020)	Journal article	“To explore the characteristics of judicial websites, highlight some differences between judicial and executive branch websites, and propose an assessment framework for judicial websites that can be used to understand both electronic justice and open justice” (p. 336)	None
31	Valeev and Nuriev (2019)	Journal article	To analyze” the general patterns of development of e-justice elements in the administration of constitutional, civil, administrative, and criminal justice” (p. 1)	None
32	Shahbazov (2019)	Journal article	“To provide insights into the attitudes of Azerbaijani students and criminal justice professionals toward electronic monitoring as a method to rehabilitate offenders and deter crime” (p. 52)	None
33	Arias and Maçada (2020)	Journal article	How do electronic lawsuits impact perceived individual performance and public service quality in the federal judiciaries of Brazil and Argentina from the perspective of the employees?	Task-Technology Fit Theory

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	Full citation of the publication	Publication type (conference, book chapter, journal article)	Research question(s)/purposes of the study	Theoretical foundations (if any)
34	Lupo and Bailey (2014)	Journal article	To illustrate and elaborate upon the system design and design management principles for the implementation of e-justice that might impact a system's ability to improve access to justice	None
35	Lupo (2015)	Book chapter	To propose an e-justice assessment framework that integrates efficacy-oriented variables with variables that focus on the judicial values that e-justice should support	None
36	Kramer et al. (2018)	Book chapter	To map and evaluate the development of digitization in the Netherlands, with a focus on civil justice	None

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