

Multiple Dimensions of Inequality and Compound Intersectionality in ICT-Mediated Access to Justice

Katy Maria Nogueira Morais¹ , Diana Cruz Rodrigues^{2,3} , Eden do Carmo Soares Junior⁴ , João Paulo dos Santos da Silva² 

¹ Universidade Estadual do Maranhão, Centro de Ciências Sociais Aplicadas, São Luís, MA, Brazil

² Universidade da Amazônia, Programa de Pós-Graduação em Administração, Belém, PA, Brazil

³ Museu Paraense Emílio Goeldi, Belém, PA, Brazil

⁴ Controladoria Geral da União, Brasília, DF, Brazil

How to cite: Morais, K. M. N., Rodrigues, D. C., Soares, E. C., Junior., & Silva, J. P. S. (2026). Multiple dimensions of inequality and compound intersectionality in ICT-mediated access to justice. *BAR-Brazilian Administration Review*, 23(3), e250104.

DOI: <https://doi.org/10.1590/1807-7692bar2026250104>

Keywords:

administration of justice; disadvantaged groups; information society; social exclusion; social inequality.

JEL Code:

D63

Received:

July 11, 2025.

This paper was with the authors for four revisions.

Accepted:

May 30, 2026.

Publication date:

August 10, 2026.

Corresponding author:

Katy Maria Nogueira Morais
Universidade Estadual do Maranhão, Centro de Ciências
Sociais Aplicadas
Av. Lourenço Vieira da Silva, n. 1000, Jardim São Cristóvão,
CEP 65055-310, São Luís, MA, Brazil

Funding:

The author stated that there is no funding for the research

Conflict of Interests:

The authors stated that there was no conflict of interest.

Editor-in-Chief:

Ricardo Limongi 
(Universidade Federal de Goiás, Brazil)

Associate Editor:

Marcos de Moraes Sousa 
(Instituto Federal Goiano, Brazil)

Reviewers:

Fabício Castagna Lunardi 
(Escola Nacional de Formação e Aperfeiçoamento de
Magistrados, Brazil)
Two anonymous reviewers.

Peer Review Report:

The disclosure of the Peer Review Report was not
authorized by its reviewers.

Editorial assistants:

Eduarda Anastacio and Simone Rafael (ANPAD, Maringá, Brazil).

ABSTRACT

Objective: this study proposes a multidimensional analytical framework that encompasses both organizational and individual dimensions to examine access to justice mediated by information and communication technologies (ICTs), with a particular focus on the intersectional effects of citizens' disadvantages. Debates about access to justice amid digital transformation have become increasingly relevant, especially in settings marked by high levels of inequality. Compound intersectionality has been recognized as an important analytical lens for ICT-mediated access to justice; however, a gap remains in integrating digital technological conditions into existing intersectional analytical models. **Methods:** the framework was developed through a systematic literature review and then applied, for validation, in a case study of family court proceedings at a Brazilian tribunal. **Results:** the findings identified intersectional effects in ICT-mediated access to justice, primarily associated with female gender, low income, low educational attainment, and Black racial identity, along with one case indirectly involving a person with a disability. **Conclusions:** the framework made digital technological conditions visible and foregrounded the role of intermediary actors in the analysis. The multidimensional framework proved analytically productive in surfacing intersectional effects and in exposing the limitations of digital inclusion measures that fail to address citizens in their full complexity.



Data Availability: Morais, K. M. N., Rodrigues, D. C., Soares Junior, E. do C. & dos Santos da Silva, J. P. (2026). Multiple dimensions of inequality and compound intersectionality in ICT-mediated access to justice [Dataset]. Zenodo. <https://doi.org/10.5281/zenodo.21385755>.
BAR – Brazilian Administration Review encourages data sharing but, in compliance with ethical principles, it does not demand the disclosure of any means of identifying research subjects.

Plagiarism Check: BAR maintains the practice of submitting all documents received to the plagiarism check, using specific tools, e.g.: iThenticate.

Peer review: is responsible for acknowledging an article's potential contribution to the frontiers of scholarly knowledge on business or public administration. The authors are the ultimate responsible for the consistency of the theoretical references, the accurate report of empirical data, the personal perspectives, and the use of copyrighted material. This content was evaluated using the double-blind peer review process. The disclosure of the reviewers' information on the first page is made only after concluding the evaluation process, and with the voluntary consent of the respective reviewers.

Copyright: The authors retain the copyright relating to their article and grant the journal BAR – Brazilian Administration Review, the right of first publication, with the work simultaneously licensed under the Creative Commons Attribution 4.0 International license (CC BY 4.0) The authors also retain their moral rights to the article, including the right to be identified as the authors whenever the article is used in any form.

INTRODUCTION

This study proposes a multi-dimensional analytical framework for access to justice mediated by Information and Communication Technologies (ICTs). It examines the relationship between organizational and individual conditions, with a specific focus on the compounding effects of intersectionality. While intersectionality is recognized across various studies on access to justice and e-justice as a critical analytical lens (Hamedanian & Arjmand, 2026; Leitch, 2025; Murray, 2021; Young & Billings, 2023), its analytical operationalization remains a challenge. It requires interactive approaches and variables associated with digital inequalities, elements that have yet to be integrated into existing frameworks (Young & Billings, 2023). Therefore, this article contributes to the field by developing and applying a framework that integrates multiple dimensions of access to justice through a relational perspective, incorporating digital technological conditions.

Multiple forms of societal inequality affect citizens' access to justice, including social, economic, legal-educational, and, more recently, ICT-related skill and access inequalities embedded in the digital transformation of justice systems (Bailey et al., 2013; Bedner & Vel, 2010; Donoghue, 2017; Dussan & Avellaneda, 2018; Hamedanian & Arjmand, 2026; Lozanovska & Shapkoski, 2021; Rampim & Igreja, 2022; Razmetaeva & Razmetaev, 2021; Santos, 1997; Schmitz, 2020; Warner, 2020; Williams, 2021). These inequalities create barriers to full access to justice for citizens in disadvantaged positions, including those living in poverty, those with limited accessibility due to disabilities, and those facing discriminatory barriers based on gender, sexual orientation, age, or ethnocultural background (Bala & Singhal, 2018; Donoghue, 2017; Dussan & Avellaneda, 2018; Lozanovska & Shapkoski, 2021; Mulcahy & Tsalapatani, 2022; Pukdeewut & Setthasuravich, 2024; Schmitz, 2020). Recognizing these multiple dimensions of inequality that affect citizens' capacity to access justice is therefore essential to any inclusive approach.

Before the digital transformation of justice systems, research had already identified various conditions affecting citizens' access to justice (Dussan & Avellaneda, 2018; Schmitz, 2020; Torlig & Gomes, 2021). These conditions include the economic costs of access (e.g., transportation and legal representation), time spent, the type and quality of legal representation, citizens' educational level, and the communicative capacity between the justice system and citizens (Lozanovska & Shapkoski, 2021; Pukdeewut & Setthasuravich, 2024; Schmitz, 2020). The incorporation of ICTs into justice services has produced varied effects on these previously documented conditions and has also brought new

forms of inequality to the fore. On the one hand, ICT use can reduce transportation costs and the time required for citizens' interactions with the justice system (Fabri, 2021; Prescott, 2017; Wallace, 2008). On the other hand, digital exclusion and inequality in internet access quality and digital skills can represent barriers to access to justice for significant portions of the population (Shi et al., 2021; Van Deursen & Helsper, 2015; Wei et al., 2011).

Although prior studies address multiple barriers to ICT-mediated access to justice (Dussan & Avellaneda, 2018; Leitch, 2025; Murray, 2021; Torlig & Gomes, 2021), the complexity of the interactions and inequalities at play demands frameworks grounded in relational and intersectional approaches. Much of the research on the intensified use of ICT in judicial systems has focused on measuring efficiency and procedural performance, emphasizing variables such as the speed and cost of accessing the judicial system from a technological-organizational perspective (Gontijo, 2015; Schmitz, 2020). These investigations, however, tend to neglect relational analyses centered on citizens' access to the justice system across different societal conditions (Donoghue, 2017) — an approach that requires examining both organizational and citizen characteristics.

Intersectionality has been used as an analytical lens to capture the power relations in society that produce structural and dynamic inequalities through the interaction of two or more axes of subordination and discrimination (Crenshaw, 2002; Rankin et al., 2021). Studies on access to justice have shown that intersectional effects increase barriers to access, as individuals simultaneously experience two or more overlapping conditions of social disadvantage (e.g., being poor, Black, and disabled) (Young & Billings, 2023). As digital transformation in justice systems accelerates, inequalities in citizens' digital access, use, and skills interact with other dimensions of inequality, reshaping the constitution of intersectionality and making it necessary to incorporate these dimensions into analytical models.

This study therefore proposes a multidimensional analytical framework for examining inequalities in ICT-mediated access to justice and their compounded intersectional effects. The framework is grounded in a literature review on access to justice and draws on scholarship on digital exclusion and socio-digital inequality. Intersectionality is analyzed at the individual level, i.e., from the perspective of citizens seeking justice services, across sociodemographic, economic, educational, and technological dimensions, and within the operational context of the justice system (organizational dimensions).

The framework is applied to four case files from the Court of Justice of the State of Maranhão (*Tribunal de*

Justiça do Maranhão [TJMA]) in Brazil. This selection is justified by the high levels of inequality in Maranhão and in Brazil more broadly. Brazil exhibits high rates of social and economic inequality, as evidenced by a Gini coefficient¹ of 0.518 in 2022 (Organisation for Economic Co-operation and Development [OECD], 2023), and faces significant challenges in internet access and digital inclusion. In 2022, Maranhão and Acre were the Brazilian states with the lowest proportions of daily internet users, 79.1% and 77.8%, respectively, nearly ten percentage points below the national average of 87.2% (*Instituto Brasileiro de Geografia e Estatística* [IBGE], 2023). Moreover, Maranhão ranked last among Brazilian states in the proportion of individuals aged ten or older who owned a personal mobile phone in that same year, at 73.9%, more than twelve percentage points below the national average of 86.5% (IBGE, 2023). Maranhão thus constitutes a critical and analytically productive context for examining the multiple dimensions affecting ICT-mediated access to justice. The underlying assumption is that contexts marked by high inequality exhibit both a greater diversity of inequality dimensions affecting ICT-mediated access to justice and a greater intensity of those inequalities. It is precisely this multiplicity of inequality dimensions bearing simultaneously on the same citizens that motivates the study's focus on compounded intersectional effects.

THEORETICAL FRAMEWORK: THE DIGITAL TRANSFORMATION OF JUSTICE AND THE SOCIO-DIGITAL CHALLENGE

The digital transformation of justice

The integration of ICTs into judicial services, known as electronic justice or e-justice, marks a profound shift in how judicial systems function and deliver services (Agrifoglio et al., 2013; Contini & Cordella, 2007; Rampim & Igreja, 2022). This transformation can be understood as an evolutionary trajectory, often conceptualized in stages analogous to the industrial revolutions (Corvalán & Sá Zeichen, 2018; Schwab, 2017).

The initial phase, 'Justice 1.0,' was entirely paper-based and in-person, subject to rigid formalities. The advent of basic electronic devices, such as telephones and fax machines, marked 'Justice 2.0.' A more significant advance came with 'Justice 3.0,' driven by the widespread adoption of personal computers and the internet, which enabled digital archiving systems, electronic case management, and initial online access (Corvalán & Sá Zeichen, 2018). Subsequent advances in ICT and the development of digital platforms gave rise to a further phase, conceptualized as 'Justice 4.0,' characterized by the intensive use of artificial intelligence for case prediction and management, big data analyt-

ics, blockchain-based document security, the Internet of Things, and the normalization of virtual hearings and telepresence (Reiling & Contini, 2022; Resolução n. 354, 2020; Schwab, 2017). Justice 4.0 promises greater efficiency, speed, and transparency, as well as reduced physical and economic costs for the system and some of its users (Fabri, 2021; Rampim & Igreja, 2022; Razmetaeva & Razmetaev, 2021).

The literature highlights several benefits of this digitization, including new channels for interaction between the justice system and citizens through digital tools, improved access to case information and data, and greater speed and security in handling and archiving digital case files (Fabri, 2021; Rampim & Igreja, 2022; Razmetaeva & Razmetaev, 2021). However, this evolution has been analyzed predominantly from an organizational and technological perspective focused on gains in procedural efficiency (Gontijo, 2015; Schmitz, 2020). A critical gap remains in understanding how digital transformation reconfigures barriers to access to justice for citizens engaging with the judiciary, particularly in contexts of high social inequality. Inequalities in citizens' capabilities and opportunities (Reiling & Contini, 2022; Sen, 2008; Young & Billings, 2023) can curtail the reach of these positive developments and even generate new barriers and asymmetries in access to justice, a phenomenon captured by the notion of socio-digital inequalities (Hargittai & Hinnant, 2008). The prevailing discourse of technological progress frequently overlooks the relational and capability-based impacts on the primary stakeholders: the citizens (Mergel et al., 2019; Tangi et al., 2021).

The right to an effective remedy and to a fair trial makes citizens' access to justice a fundamental requirement, embodied in a justice system with fair procedures and effective, available, concrete solutions (Palombella, 2020). The right to access a judge aligns with the classical conception in which justice is understood as synonymous with the judiciary (Junqueira, 1996). This conception, however, risks being reductionist insofar as it equates access to justice solely with access to the courts; subsequent scholarly developments have broadened the concept, linking it to access to a just legal order (Watanabe, 2019).

The operationalization of the concept of access to justice is complex, as it is open to multiple meanings and applicable to a wide range of citizens in markedly different social circumstances (Bailey et al., 2013). The justice system is accordingly required to be equally accessible to all while simultaneously producing outcomes that are both individually and socially just, a dual imperative that renders the concept inherently complex and multifaceted (Moraes et al., 2019).

Socio-digital exclusion as a new frontier of inequality in access to justice

Although ICTs can mitigate traditional barriers to access to justice, such as costs and travel time (Prescott, 2017; Wallace, 2008), they also introduce and exacerbate a new dimension of exclusion: socio-digital inequality. Digital exclusion refers not only to physical access to the internet or devices (first-level exclusion), but also to inequalities in digital skills, uses, and the benefits derived from online activities (second- and third-level exclusion) (Hargittai, 2002; Van Deursen & Helsper, 2015; Scheerder et al., 2017).

In the context of Justice 4.0, socio-digital inequalities translate into concrete barriers to accessing justice. Citizens may lack the necessary equipment, be unable to afford a stable broadband connection, or lack the digital literacy needed to navigate complex judicial platforms, complete electronic forms, or participate effectively in virtual hearings (Mulcahy & Tsalapatanis, 2022; Rampim & Igreja, 2022; Shi et al., 2021).

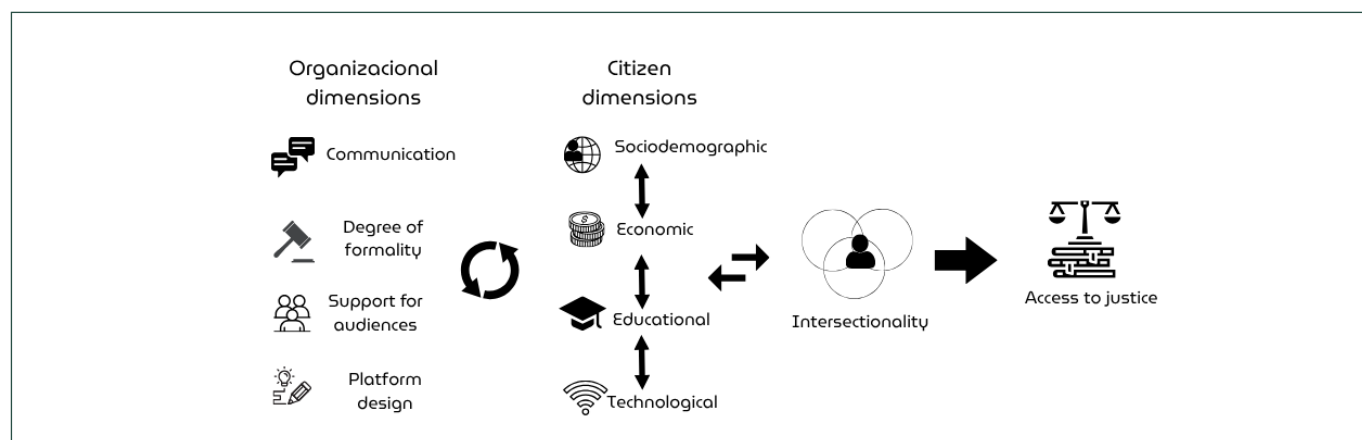
Analyzing levels of digital exclusion is necessary to address inequalities in digital transformation processes, and such research has been conducted at the individual, organizational, and global levels (Riggins & Dewan, 2005). Inequality in digital access can be measured by citizens' ownership of home computers and their capacity to use them, by organizations' investment in ICT, and by national ICT expenditure (Rampim & Igreja, 2022; Wei et al., 2011). The asymmetries in digital outcomes among individuals in accessing and using ICTs have profound consequences, including the reinforcement of existing social inequalities

(Scheerder et al., 2017). These disadvantages are not randomly distributed; rather, they are systematically linked to sociodemographic, economic, educational, and technological inequalities.

An intersectional analytical framework for ICT-mediated access to justice

To systematically analyze how overlapping inequalities affect access to justice in the digital age, we propose a multidimensional framework grounded in intersectionality. Intersectionality illuminates how various axes of social disadvantage, such as gender, race, and class, converge within individuals, producing unique, compounded experiences of discrimination and structural barriers (Crenshaw, 2002; Young & Billings, 2023). In the context of Justice 4.0, a citizen who faces multiple disadvantages encounters barriers that are not simply additive but interactive and mutually reinforcing.

The implementation of new systems carries an inherent risk of creating new barriers and impediments (Park & Humphry, 2019). In this regard, there is a relationship between the structural transformations of judicial systems and procedures and the dimensions of disadvantage that citizens already face. This relationship must be examined to understand how organizational changes in judicial systems and procedures affect citizens differently across their sociodemographic, economic, educational, and technological conditions (Figure 1). The judiciary must establish socio-digital inclusion measures within the organizational dimension of the justice system to mitigate the intersectional effects on citizens' access to justice.



Source: Developed by the authors.

Figure 1. Relationship between organizational and citizen dimensions, mediated by intersectionality, in access to the judiciary within a digital transformation context.

The transition to digital justice risks producing a model ill-suited to the diverse needs of citizens, potentially deepening existing inequalities (Kistemaker, 2021; Reiling & Contini, 2022). As Brooke (2004) observed, technology can tip the scales of justice in favor of those with the resources to access legal databases, communicate effectively with the court, and manage electronic documents. For the socio-digitally excluded, the cost of justice may rise, requiring greater effort, reliance on public access points, and exposure to privacy risks (Bailey et al., 2013). Digital transformation can thus reinforce entrenched social inequalities if it is not deliberately designed with inclusion in mind.

Figure 1 illustrates the multiple organizational dimensions that affect citizens' access to the judiciary, alongside individuals' own conditions (sociodemographic, economic, educational, and technological), which shape each citizen's capacity to exercise that access. These citizen-level dimensions are also inter-

related, and their effects are compounded by the intersectionality of social disadvantages. The relationship is interactive: organizational changes affect citizens' access conditions in ways mediated by multiple inequalities and intersectional effects, ultimately shaping both the means by which citizens engage with the judiciary and the outcomes they obtain.

When changes arise from the digitization of justice, access analysis requires integrating multiple variables examined at the organizational level (Reiling & Contini, 2022; Ter Voert et al., 2022). It is necessary to broaden the range of variables analyzed simultaneously to examine socio-digital disadvantages, encompassing inclusion processes across both modalities of citizen engagement (in-person and digital) and their interactive effects with intersectionality. Drawing on the literature review, Table 1 integrates the multiple variables affecting citizens' access to justice and classifies them into four organizational dimensions.

Table 1. Structure of the judiciary's multiple organizational dimensions.

Dimension	Variables	References
Communication	Accessible channels	Hughes (2013); Shi et al. (2021)
Communication	Accessible language	Prescott (2017)
Degree of formality	Dress code requirements (in-person/digital court)	Schmitz (2019, 2020)
Degree of formality	Strictness regarding participation rules and seating arrangements in the hearing room	Rossner et al. (2021); Bailey et al. (2013)
Degree of formality	Extrajudicial mechanisms	Schmitz (2019, 2020)
Support for hearings	Digital inclusion access points (digital modality)	Legg and Song (2021); Rossner et al. (2021)
Support for hearings	Digital literacy support (digital modality)	Shi et al. (2021)
Support for hearings	Special testimony rooms (in-person modality)	Legislation: Article 7th of Resolution 299/ 2019 (Resolução n. 299, 2019)
Support for hearings	Available multidisciplinary team (in-person modality)	Dussan and Avellaneda (2018)
Platform design	Integration and multifunctionality	Prescott (2017); Rossner et al. (2021); Reiling and Contini (2022)
Platform design	Internet connection speed and stability	Rossner et al. (2021)
Platform design	Accessibility	Prescott (2017)
Platform design	Ease of use (intuitive design)	Mulcahy and Tsalapatanis (2022)

Note. Developed by the authors.

Regarding the dimensions of formality and platform design, the usability of judicial systems must be considered to ensure that citizens asserting a right can understand the process. The judiciary's liturgy typically imposes a degree of formality unfamiliar to lay citizens and is dominated by actors internal to the system (judges, lawyers, and court clerks) (Prescott, 2017). In this regard, platform design can extend beyond questions of access tools and modalities to encompass ease of use and broader accessibility. The formality of the traditional courtroom need not be reproduced in the virtual environment (Rossner et al., 2021).

These organizational dimensions interact with the proposed variables of communication and hearing support. The availability of multiple channels respon-

sive to citizens' needs (OECD, 2019) and the provision of adequate support for effective access (Legg & Song, 2021) are fundamental to the meaningful inclusion of citizens in judicial proceedings. The organizational dimensions of the judicial system are interrelated and directly shape the extent to which social dimensions affect access to justice.

The multidimensional citizen-level framework, summarized in Table 2, operationalizes the intersectional approach by identifying and integrating the dimensions and variables that shape a citizen's capacity to access ICT-mediated justice. It thereby enables a shift from isolated or partial analyses to a more integrated, intersectional examination of how disadvantages cluster and interact.

Table 2. Structure of multiple citizen-level dimensions for analyzing ICT-mediated access to justice in high-inequality contexts.

Dimension	Variables	References
Sociodemographic	Gender (women, transgender persons)	Dussan and Avellaneda (2018); OECD (2019); Hamedanian and Arjmand (2026); Young and Billings (2023)
Sociodemographic	Age (children, older adults)	Blank and Groselj (2014); Pearce and Rice (2013); Young and Billings (2023)
Sociodemographic	Disability or comorbidity	Dobransky & Hargittai, 2016; Prescott (2017); Young and Billings (2023)
Sociodemographic	Race/skin color (Black and Indigenous populations)	Dussan and Avellaneda (2018); Hughes (2013); Young and Billings (2023)
Sociodemographic	Ethnocultural origin (immigrants, religious minorities)	Dussan and Avellaneda (2018)
Economic	Income (low-income individuals)	Schmitz (2020); Lozanovska and Shapkoski (2021); Hamedanian and Arjmand (2026); Young and Billings (2023)
Economic	Legal representation (self-representation, public defender, private attorney)	Schmitz (2020); Williams (2021); Rampim and Igreja (2022)
Educational	Knowledge of rights and responsibilities	Bailey et al. (2013); Hamedanian and Arjmand (2026)
Educational	Educational level (low literacy)	Hargittai and Hinnant (2008); Schmitz (2020); Young and Billings (2023)
Technological	Internet access (poor or no connectivity)	Marche and McNiven (2003); Mulcahy and Tsalapatanis (2022); Rampim and Igreja (2022)
Technological	Equipment (lack of devices)	Legg and Song (2021); Shi et al. (2021); Mulcahy and Tsalapatanis (2022); Rampim and Igreja (2022)
Technological	Digital skills (low proficiency)	Warner (2020); Razmetaeva and Razmetaev (2021)

Note. Developed by the authors.

The citizen-level analytical dimensions can overlap, enabling examination of intersectionality and its potential interactions with the judiciary's organizational dimensions. This is significant because populations marginalized along different sociodemographic axes face barriers that are often invisible to the state (Dussan & Avellaneda, 2018). These barriers, beyond affecting access to the judiciary, are frequently associated with economic and educational variables such as low income and low educational attainment (Hamedanian & Arjmand, 2026; Lozanovska & Shapkoski, 2021; Schmitz, 2020; Young & Billings, 2023). The intersectional effect compounds inequalities, whereby multiple variables simultaneously constrain citizens' access (Hargittai & Hinnant, 2008; Young & Billings, 2023).

The digital transformation of public services directly engages with these inequality variables. Technological-dimension variables, such as low connectivity (Marche & McNiven, 2003; Mulcahy & Tsalapatanis, 2022; Rampim & Igreja, 2022), lack of equipment (Legg & Song, 2021; Mulcahy & Tsalapatanis, 2022; Rampim & Igreja, 2022; Shi et al., 2021), and low digital literacy (Razmetaeva & Razmetaev, 2021; Warner, 2020), are intertwined with economic, educational, and sociodemographic variables, creating intersectionality across dimensions. Therefore, the analysis of citizens' access conditions to the judiciary cannot be adequately conducted using isolated variables.

The dimensions presented in Tables 1 and 2 serve as integrated analytical tools and can also be used to structure diagnostic assessments of access to justice. They guide the investigation of how variables across

different dimensions, such as low income (economic), low educational attainment (educational), and lack of equipment (technological), converge within a single individual, exponentially compounding barriers to accessing a virtual hearing (organizational). The effects of ICT mediation in justice are accordingly assumed to be non-neutral: they tend to amplify existing advantages for some citizens while deepening disadvantages for others, depending on each citizen's intersectional condition. Results section presents the application of this framework to empirical cases to illuminate these dynamics and validate its analytical utility.

The proposed framework aligns with a bottom-up perspective on access to justice analysis (Hamedanian & Arjmand, 2026), directing attention to the concrete challenges citizens face in securing access, in contrast to most existing frameworks, which adopt an organizational or institutional perspective centered on court efficiency and digital procedural reform (Gontijo, 2015; Rampim & Igreja, 2022; Reiling & Contini, 2022; Schmitz, 2020). Beyond linking organizational and citizen-level dimensions, the framework integrates sociodemographic, economic, and educational factors with citizens' explicitly articulated technological conditions. This contribution advances intersectionality scholarship on access to justice in the context of digital transformation, as prior intersectionality studies had not yet operationalized the technological component in their analyses (Hamedanian & Arjmand, 2026; Young & Billings, 2023). Thus, the framework makes an original contribution by proposing the analytical integration of organizational and citizen-level dimensions in the

study of access to justice and by incorporating variables of technological disadvantage into the examination of intersectional effects.

METHODOLOGY

The research design is grounded in the case study approach (Simons, 2014) and aims to examine the multiple dimensions affecting citizens' ICT-mediated access to justice in a context of high inequality. Drawing on the proposed set of dimensions affecting individuals' access to justice and considering the intersectional effects elaborated in the preceding section, the analytical framework is applied to four judicial proceedings from units of the Court of Justice of the State of Maranhão (TJMA) in Brazil. Through the analysis of these cases, we expect the proposed framework to shed light on the interactions among the multiple organizational and citizen-level variables at play in access to justice mediated (or not) by ICT.

This study was approved by a Research Ethics Committee under Opinion No. 5,559,368, dated August 3, 2022.

Context and cases

The study examined four cases involving family law disputes at the TJMA, which is a mid-sized court with an annual budget of approximately USD 395 million in 2023 (based on the year's average exchange rate)². It encompasses 107 judicial districts, 254 courts, and 34 small claims courts distributed across 12 judicial hubs (CNJ, 2023; TJMA, 2023). Conducting the research in the Brazilian context, specifically in the state of Maranhão, is justified by the high levels of inequality

characteristic of that setting, which are precisely the conditions for which the analytical framework was developed, enabling the analysis of multiple compounding disadvantage factors.

The selection of family court cases is justified by the considerable weight of family-related matters in citizens' access-to-justice demands in Brazil. According to the National Council of Justice (CNJ, 2023), family matters rank first in surveys of citizens' perceptions and evaluations of the Brazilian judiciary, accounting for 22.7% of respondents, followed by labor disputes (15.4%) and issues involving banks and financial institutions (9.4%). Family justice generally concerns conflicts arising in individuals' personal lives, including marital separation, paternity suits, and the division of assets and rights such as inheritance, alimony, and child custody (CNJ, 2023; Hughes, 2013).

The selected cases came from two court units: the 1st Judicial Center for Conflict Resolution and Citizenship (*Centro Judiciário de Solução de Conflitos e Cidadania* [CEJUSC]) in São Luís (the state capital) and the 2nd Court of the municipality of Pinheiro. The inclusion of cases from two municipalities was intended to introduce variability between a metropolitan area (São Luís) and a smaller municipality (Pinheiro). Four cases were selected from these units, as summarized in Table 3. The selection was initially designed to achieve variability in procedural categories across the first three cases, with a similar claimant profile offering greater predictability of disadvantages; the fourth case maintained a similar procedural category while varying the claimant profile, yielding lower predictability of disadvantages.

Table 3. Summary of the selected cases.

Selected cases	Case 1	Case 2	Case 3	Case 4
Type of proceeding	Extrajudicial	Judicial	Judicial	Judicial
Type of hearing	Pre-procedural	Conciliation	Preliminary and judgment	Conciliation
Start of proceeding	2022	2022	2019	2022
Procedural category	Post-mortem paternity recognition	Child support	Recognition and dissolution of common-law marriage and division of assets	Recognition and dissolution of common-law marriage, child support, and division of assets
Hearing modality	In-person	Hybrid	Virtual and hybrid	Virtual
Claimant profile (citizen)	Young Black woman, low-income	Mature mixed-race woman, mother of a child with a disability, low-income	Mature Black woman, low-income	Mature mixed-race woman, high-income

Note. Developed by the authors.

Research stages and procedures

The research was conducted in four stages, as shown in Table 4, comprising: a literature review to construct the

analytical framework; an exploratory study to familiarize the researchers with the research setting and to select cases; and stages of data collection and case analysis.

Table 4. Research stages.

Stages	Methods and techniques	Details
Stage I Literature review	Bibliographic survey with narrative literature review	Survey of articles from national and international databases (Scopus), supplemented by a search for published books and institutional reports, using a combination of the keywords 'acesso à justiça,' 'access to justice,' 'audiência virtual,' 'virtual hearings,' 'justiça eletrônica,' 'e-justice,' 'desigualdade sociodigital,' and 'socio-digital inequality.' This was followed by a narrative review to understand the theme's conceptual development and propose the analytical framework.
Stage II Exploratory study	Non-participant observation of virtual hearings	An exploratory study was conducted through non-participant observation of 25 hearings: 3 in-person, 3 virtual, and 19 hybrid. This stage provided an initial engagement with the research field and with the variables selected for the analytical framework.
Stage III Case data collection	Documentary research	Collection of regulations and normative instruments issued to guide the digital transformation process within the TJMA and the implementation of new service formats.
Stage III Case data collection	In-depth interviews	Data generation through individual interviews with parties to the proceedings, conciliators, and a magistrate, aimed at understanding their lived experiences, perceptions, and any difficulties or facilitating factors encountered in relation to access to justice (under ICT-mediated and non-mediated conditions).
Stage IV Case analysis	Textual analysis with coding	Data were processed, coded, and categorized according to the dimensions and variables of the analytical framework. This stage was divided into two phases: (1) individual analysis of each case (intra-case analysis); (2) examination of the interactions between organizational and citizen-level dimension variables across the full set of cases (inter-case analysis).

Note. Developed by the authors.

The stages were sequentially linked. The analytical framework developed in Stage I identified the variables that guided the non-participant observation in Stage II. Stage II was designed as an exploratory study with a dual purpose: to validate the feasibility of analyzing the variables proposed in the framework and to identify participant profile characteristics, thereby defining the cases to be selected for in-depth study. Non-participant observation was carried out throughout 2021 in three cycles of hearing selection, through which we sought exposure to a diversity of procedural categories, hearing types, and claimant profiles. The cases selected for the study were identified at the close of this stage, based on the variability criteria outlined in Table 3 and on the parties' agreement to participate in the subsequent research stage.

Once the cases were selected, data collection (Stage III) and analysis (Stage IV) were conducted. Documentary research was conducted in 2022 and 2023, including a survey of regulations applicable to the TJMA and requests for case-specific documentary data (hearing schedules and basic case information). Semi-structured interviews were the primary data source at this stage, given the objective of understanding citizens' lived experiences of access to justice in light of the new digital formats available to them, as well as the barriers and facilitators they perceived. The diversity of data types (documents and interviews) and sources (interviewees) was intended to support data triangulation in accordance with case study methodology.

The interviews were conducted between October 2022 and January 2023, using both in-person and virtual formats, in the cities of São Luís and Pinheiro, following a script organized around the dimensions of the analytical framework (Tables 1 and 2). Seven participants were interviewed: four claimants involved in the selected cases and three court personnel connected to

those cases, including one magistrate and two conciliators. A summary of participant profiles is provided in Table 5. A supplementary data update was conducted in 2024 and 2025 to record the resolution of the cases.

For the data analysis stage (Stage IV), all interviews were recorded, transcribed, de-identified, and imported into Atlas.ti alongside the relevant documentary sources. Interviews and documents were then coded in the software according to the dimensions set out in Tables 1 and 2, enabling a systematic description and analysis of interviewees' experiences of access to justice and technological mediation. Analysis proceeded in two steps: first, individual case analysis (intrinsic, intra-case analysis) to understand each citizen's experience of accessing justice; and subsequently, an examination of interactions between organizational- and citizen-level dimension variables across the full set of cases (instrumental, inter-case analysis of the framework) to systematize insights into the intersectional effects on ICT-mediated access to justice.

RESULTS

The digital transformation of the justice system through ICT-mediated processes introduces a new dimension of inequality in access to justice within an already complex, multidimensional social context (Rampim & Igreja, 2022; Scheerder et al., 2017). A relational, analytical examination that captures interactions between organizational variables (justice system) and citizen-level variables and considers their intersectional effects is necessary to advance mechanisms that mitigate inequalities and broaden citizens' access to justice. Accordingly, this study analyzed four access-to-justice cases at the Justice Court of the State of Maranhão (TJMA), situated within a context of digital transformation and high inequality.

Case 1: Avoidance of technological mediation

This case involves an extrajudicial proceeding, conducted through an in-person hearing, for the post-mortem paternity recognition of a young woman (under 25 years of age) who is Black and did not complete secondary school. Her mother is also Black and worked as a domestic day laborer in the home of the case's plaintiff, one of the deceased father's recognized daughters, who decided to assist in establishing her half-sister's paternity, which the father had refused to acknowledge during his lifetime. The mother and daughter had not pursued judicial recognition of paternity until that point, despite being entitled to do so. The recognized sisters facilitated the DNA test at a private laboratory to establish the beneficiary's paternity.

Following the positive DNA result, the sisters filed an extrajudicial post-mortem paternity recognition proceeding with the TJMA. The plaintiff's sister holds a law degree and has completed a conciliation training course, both of which she identified as facilitating her engagement with the judiciary. She thus served as an intermediary, securing access to justice for her unrecognized sister, the case's primary beneficiary.

During the pre-hearing phase, the plaintiff maintained communication with the court through available channels, submitting documentation and receiving the hearing date notification via WhatsApp (Rampim & Igreja, 2022). She reported receiving support from court staff who mediated the service interaction and noted that the extrajudicial mechanism felt less formal than standard judicial proceedings.

The hearing was conducted by a conciliator. The conciliation room is itself a less formal environment than a standard courtroom – seating arrangements are less rigid, and the conciliator's attire differs from that of a magistrate (Schmitz, 2019, 2020). The absence of formally appointed legal counsel further reduces the ritualistic formality and specialized legal language typically associated with judicial proceedings.

The hearing was held in person. Before the hearing began, the security desk contacted the conciliator because the participants had not brought their vaccination cards, which were required for building entry during the COVID-19 pandemic, causing a delay. In the interview, the conciliator noted that participants are sometimes denied entry to the courthouse altogether and that inappropriate attire is another common reason for such impediments (Schmitz, 2019, 2020). The conciliator also informed the parties of a laboratory that offers free DNA testing, a service they had been entirely unaware of, highlighting a significant gap in the justice system's communication of available services to the public.

The choice of an in-person hearing was the plaintiff's deliberate decision, as she explained: "The hearing was only in person because they [her sister and her mother] did not have the setup needed to hold an online hearing." The reasons given for opting for an in-person session were the lack of equipment ("she doesn't have a computer") and uncertainty about digital proficiency ("we didn't know how capable she was with it"). During the hearing, limited familiarity with basic digital tools became apparent when the conciliator asked the parties for their email addresses. The mother was unable to provide one, stating she had forgotten it, a response that may signal little day-to-day engagement with basic technological tools.

On the one hand, the beneficiaries' limited access to equipment and digital skills would likely have posed significant obstacles to engaging with electronic justice services, compounded by limited awareness of their rights and of available justice services. These barriers are well documented in the literature (Fabri, 2021; Hamedanian & Arjmand, 2026; Legg & Song, 2021; Shi et al., 2021; Van Deursen & Helsper, 2015). On the other hand, the plaintiff reported making effective use of the court unit's WhatsApp service channel, attesting to its ease of use: "I contacted CEJUSC via WhatsApp; all the documentation I submitted via WhatsApp." She also highlighted the speed of the court's response through digital intermediation (Arias & Maçada, 2020; Prescott, 2017; Rampim & Igreja, 2022):

I thought it was fast. We sorted out everything we needed to, and we were seen quickly. So, I think it met what we were looking for; it was even faster than we expected, because the decision came through in under a month.

The compound intersectional effects in this case are clearly visible in the barriers to access to justice faced by the unrecognized daughter and the mother who raised her without paternal recognition. Multiple variables converge: being a woman (gender), being Black (race/skin color), having low income (economic dimension), having lower educational attainment and limited awareness of one's rights (educational dimension), and lacking ICT equipment and skills (technological dimension). The technological dimension was explicitly identified by the plaintiff as a potential additional barrier for the beneficiary, one that compounded the negative effects of the other dimensions already well established in the access-to-justice literature (Crenshaw, 2002; Dobe, 2016; Young & Billings, 2023). The choice of an in-person hearing is thus interpreted as a deliberate avoidance of technological mediation.

Case 2: Deepening of inequalities

This case concerns a judicial proceeding to adjust child support payments for a ten-year-old child with autism spectrum disorder (ASD), filed at the mother's request. The mother, the plaintiff, sought an increase in the father's monthly support, which had remained at BRL 150 since the couple's separation in 2013, nine years earlier, and was no longer commensurate with the child's needs.

The plaintiff (mother), aged 26 to 45, had a low income (one minimum wage), had completed secondary school and earned a nursing technician qualification, and worked at a local health center. Her son, the primary beneficiary of the action, had been diagnosed with ASD. The defendant, the child's father, reported an income of 1.5 minimum wages.

The plaintiff explained that she had delayed seeking judicial recourse since the couple's separation in 2013, despite her family's encouragement:

At first, my family kept telling me, 'Go and claim your rights, go on,' but I didn't listen. I kept thinking, 'No, maybe he'll help.' But then I went ahead on my own. I finally decided: you know what, I'm going to claim my son's rights.

She reported that, after deciding to pursue legal action, she went in person to the local branch of the Public Defender's Office of the State of Maranhão (*Defensoria Pública do Estado do Maranhão* [DPEMA]) to formalize her request. Recognized as economically vulnerable, she was taken on by the DPEMA, which filed the initial petition in the Electronic Judicial Process (PJe) system in mid-2022.

The plaintiff reported, however, that her in-person contact had been exclusively with DPEMA administrative staff, with no interaction with the public defender assigned to her case: "I never met the public defender. My only contact was with the people at the front desk. I never had contact with the public defender." This account is corroborated by the absence of any DPEMA representative at the virtual hearing observed by the researchers. The conciliator offered the following explanation in her interview: "There was a previous public defender who participated in all hearings. Since the change of public defender, he had started attending, but he participated more in other hearings than in maintenance hearings, the ones where the conflicts were more serious." The magistrate of the unit, however, held a different view:

The public defender is the judicial representative of that party. It is therefore their legal duty to accom-

pany the party at every stage of the proceedings, not only the acts conducted through judicial hearings, but also those conducted through petitions, a defense, a response to a motion filed by the opposing party, an appeal.

The conciliation hearing was held in a hybrid format on the TJMA's official platform, with the conciliator present at the courthouse and all other participants joining remotely from various locations across the municipality. Because the plaintiff had no internet access at home, she traveled to the Rural Workers' Union: "So I went to the rural workers' union and used the Wi-Fi there, I know someone there, and I stayed in a little room, and that's where I managed to get access." Even so, she reported multiple connection failures throughout the session that disrupted the hearing. These accounts reveal significant limitations in equipment and connection quality, illustrating concrete manifestations of socio-digital inequality (Shi et al., 2021; Van Deursen & Helsper, 2015). In her own words:

I had difficulty because sometimes the connection failed, and I couldn't understand what he [the defendant] was saying, and neither could she [the conciliator]; sometimes the voice would cut in and out. So yes, we do have that difficulty in virtual proceedings.

No agreement was reached at the hearing. The conciliator advised the defendant to retain a lawyer or contact the DPEMA to contest the monthly support amount the magistrate would set; the defendant subsequently hired a private attorney. The plaintiff felt that the electronic format had placed her at a disadvantage, compounded by her limited understanding of procedural stages:

We'd be talking about one thing, then another, and sometimes I wanted to speak, but she [the conciliator] would say I couldn't; it was his [the defendant's] turn, you know... I did find it difficult, I won't lie. ... She [the conciliator] said that since there was no agreement, '[Defendant], you have 15 days to respond, but that doesn't mean you're going to win the case.' What happened was, he [the defendant] went and filed a response with his lawyer without me knowing. I had no idea, so I just waited.

This passage reveals that the plaintiff was unable to express herself fully during the virtual session, owing to both the reported connection problems and her limited understanding of the procedural rules governing the conciliation, specifically the rule governing each

party's speaking turn. While such rules apply in in-person sessions as well, they constitute an unusual and alienating formalism in the virtual modality (Warner, 2020). Despite the plaintiff's nominal participation in the session, her situation can be characterized as unjust inclusion (Sen & Kliksberg, 2010): she took part in the virtual hearing under conditions of socio-digital inequality that limited her capacity for full and meaningful participation, without the assistance of her public defender. It should also be noted that the proceedings had not concluded by the end of the research period, indicating a prolonged resolution timeline.

It is further worth noting that, given the involvement of a child with a disability (ASD), the judiciary's multidisciplinary team, composed of specialists in psychology, social work, and pedagogy, could have been called upon to assess the particularities of the case and potentially expedite the process. The plaintiff, however, reported no contact with or awareness of this team.

As in Case 1, this case exhibits a cluster of characteristics that intersect to affect the plaintiff: female gender, mixed racial identity, low income, limited legal knowledge, and lack of home internet access, as well as her child, a minor with a disability. These characteristics are well recognized in the intersectionality literature, with the added dimension of socio-digital inequality now made explicit (Crenshaw, 2002; Dobe, 2016; Young & Billings, 2023). Notably, connectivity limitations were already apparent before the hearing, as the plaintiff's communication with the DPEMA and, through the DPEMA, with the TJMA, had been conducted almost entirely in person. The ICT-mediated hearing represented yet another perceived barrier in the plaintiff's access-to-justice journey, demonstrating that the technological dimension did not counteract pre-existing inequalities; on the contrary, it reinforced them.

The plaintiff's sense of deepening disadvantage during the hearing and her recourse to an informal intermediary (the Rural Workers' Union) to obtain internet access warrant particular attention. Despite the court's potential to provide guidance, she received no adequate informational support before the initial hearing. After the session, the defendant informed her that he would make no further payments until a judicial decision was issued. The case was ultimately resolved in 2023, after the interview phase of this research had concluded, with the court ordering an increase in the defendant's child support obligation.

Case 3: The convenience of the hybrid model

This case concerns a judicial proceeding with virtual preliminary and judgment hearings to recognize and dissolve a common-law marriage and divide shared as-

sets. The couple had lived together for 36 years and had nine children together, all of legal age. The proceedings were initiated in 2019 and had been ongoing for three years at the time of data collection, during which one prior attempt at settlement had been made. The plaintiff is a Black woman, aged 46 to 59, who works as a farm laborer, has only a primary school education, and sought legal assistance through the DPEMA, all indicators of low income.

The plaintiff's first contact with the Public Defender's Office was in person, as were the initial stages of the proceedings. As she recounted: "When I went there, they would tell me how the process was going, how it wasn't going. And then they explained: the time will come when you'll be called." At the first preliminary hearing before the magistrate, the plaintiff participated remotely because she reported being ill. She joined the virtual session from her home, a mud-brick dwelling, while her ex-husband (male, Black, over 60) joined from his lawyer's office.

The plaintiff reported owning neither a smartphone nor a computer and participated in the session using her daughter's mobile phone. Her daughter also helped her access the session link sent by the court clerk: "I don't have a mobile phone. I can't manage on my own; I don't know how, and I don't use it. So, they help me." Without her daughter's support, she would have been unable to participate in the virtual session, given her lack of equipment and limited digital skills. Regarding connectivity, she reported having Wi-Fi at home, and her daughters, who live nearby, also have mobile data on their phones despite living in a rural area. Once again, the case illustrates the role of informal intermediaries in mediating the relationship between the justice system and the citizen, providing both communicative and technical support.

The plaintiff's experience with the virtual hearing was positive:

I couldn't go, I was sick. ... It was actually good, because sometimes, given the situation I was in, sometimes you just can't go, right? And then it feels like you're already failing to comply by not showing up. So, I thought: when you're well, you go in person. But since it worked online, it was wonderful. I liked it.

At the second hearing, held in a hybrid format, the plaintiff chose to attend in person, noting that "here, which was further away, it worked very well; there, it would certainly work even better." The defendant offered a settlement proposal, which the plaintiff rejected because it would have left her with less than half of

the assets in dispute. The proceedings continued until mid-2023, when they concluded with a judicial decision ordering the division of assets acquired during the common-law union.

In this case, the plaintiff similarly presents a convergence of intersectional characteristics: she is a Black woman with low educational attainment and low income, and lacks both the technological skills and the equipment required for digital participation (Crenshaw, 2002; Dobe, 2016; Young & Billings, 2023). However, she benefited from her daughters' assistance throughout the process, which substantially mitigated the intersectional effects, particularly in the technological dimension. She also reported receiving adequate support from the public defender's office. With the necessary assistance to compensate for deficiencies in equipment and digital competence, the plaintiff was able to take advantage of the hybrid service model's flexibility, participating virtually or in person according to her preference, and came away with a positive overall perception of the experience.

Case 4: I didn't imagine it would be so fast

This case concerns an action for the recognition and dissolution of a common-law marriage, with division of assets and determination of child custody, involving a couple who had lived together for over twenty years and had two children, one of legal age (20 years old) and one young child (three years old). Following the marital breakdown, the parties had been living separately for two years. An attempt at an amicable settlement, initiated by the mother, had proved unsuccessful, leading to the filing of the lawsuit.

The plaintiff is a mixed-race woman, a mature adult (aged 26 to 45), and a businesswoman, and was represented by a private attorney. The defendant, a mixed-race adult male, was also represented by a private attorney and was absent from all hearings. Although income data were not available, the parties' occupations and their engagement of private legal counsel suggest that neither party is low-income.

Both hearings were conducted virtually by a conciliator. At the first hearing, the plaintiff attended with her attorney, while the defendant's attorney represented him and expressed willingness to settle. The conciliator suspended proceedings and scheduled a follow-up hearing within three days to present a formal settlement proposal. At the second hearing, again without the defendant present, his attorney presented the proposal. The plaintiff's attorney requested a brief recess to consult with her client and returned to the virtual session with confirmation of acceptance. Both sessions proceeded swiftly.

It should be noted that the parties' technological conditions or digital skills could not be observed in detail, as the plaintiff participated from her attorney's office, with the attorney effectively conducting the interaction, and the defendant was similarly represented throughout. This highlights an important dynamic: the support provided by law firms, enabled by the parties' economic capacity to retain them, also underwrites the parties' technological participation, potentially offsetting any deficiencies in personal equipment, connectivity, or digital competence.

The plaintiff stated that, to avoid complications and to benefit from her attorney's guidance, she chose to attend the session at the attorney's office. The presence of a young child was also a factor in her decision to remain in the company of her legal representative. As she recounted the attorney's instructions: "You come here to the office; you'll be called by video because right now it isn't being done in person. We'll have to do a video call, and that's how it went."

Although the plaintiff reported having both internet access and a computer at home, she preferred to conduct the session at her attorney's office, where the attorney also handled all communications regarding the case's progress. The plaintiff reflected on her experience with the virtual hearing:

I thought there would be more difficulties, but it was very straightforward. For me, it was very straightforward. There were no problems at all. It was very fast. Everyone connected, everyone was there, and everyone reached an agreement back and forth. Everything went smoothly. I found it very practical.

She also commented on the speed of the process: "In my case, it was very fast. I didn't even imagine it would be that fast. I thought it would drag on much longer."

In this case, intersectional effects were markedly reduced for the plaintiff, who held positions of social advantage across the economic, educational, and technological dimensions (Crenshaw, 2002; Dobe, 2016; Hamedanian & Arjmand, 2026; Young & Billings, 2023). Although the plaintiff (a woman) initiated the judicial proceeding, her economic and educational resources — including access to professional legal support — contributed to an outcome perceived as both satisfactory and efficient. This case illustrates that the advantages of technological solutions are most pronounced when other dimensions, such as economic and educational conditions, are also favorable.

DISCUSSION

The analytical dimensions proposed in Tables 1 and 2 served as the basis for examining the cases presented in the preceding section and as a guide for identifying characteristics that may affect ICT-mediated access to justice, particularly in contexts of high inequality. A synthesis of the plaintiffs' perceptions across each case

is presented in Table 5. Applying the framework dimensions to the cases demonstrated the framework's utility in mapping potentially unfavorable conditions for access to justice and in illuminating the relational nature of the relationship between organizational and citizen-level dimensions, as shaped by intersectional effects.

Table 5. Analytical synthesis of cases and incidence of intersectional characteristics.

Dimensions and variables	Case 1 Avoidance of technological mediation	Case 2 Deepening of inequalities	Case 3 The convenience of the hybrid model	Case 4 I didn't imagine it would be so fast
Dimensions and variables	Intersectional markers: Woman, Black, low-income, lower education level, low digital skills	Intersectional markers: Woman, Parda (mixed-race), low-income, limited legal knowledge, child with a disability, no internet access	Intersectional markers: Woman, Black, low-income, low education level, lacks her own equipment and digital skills	Intersectional markers: Woman
Communication: Channels and accessible language	Positive perception via the intermediary action of another person (sister).	Despite seeking mediation through the Public Defender's Office, the perception of the communication process was negative, with a predominance of face-to-face communication.	Positive perception, with the help of an intermediary for digital access and a preference for face-to-face channels.	Positive perception with communications mediated by a retained lawyer.
Degree of Formality: Dress codes for entry, rigor regarding positions and participation rules, and extrajudicial mechanisms	Positive perception of extrajudicial mechanisms accessed through the intermediary action of another person (sister).	Negative perception regarding the rigor of speaking opportunities, even in an extrajudicial hearing.	Positive perception of judicial or extrajudicial procedures, whether in-person or virtual, with the support of intermediaries.	Positive perception, conducted by a retained lawyer.
Hearing Support: Digital inclusion points and digital literacy; special testimony rooms and an available multidisciplinary team.	Opted for an in-person hearing to avoid technological mediation.	Unaware of support opportunities; supported by the mediation of another organization (Labor Union).	Received support for hearing participation from family intermediaries.	Positive perception with support mediated by a retained lawyer.
Platform Design: Integration and multifunctionality, connection speed and stability, accessibility, and ease of use.	Opted for an in-person hearing to avoid technological mediation.	Connection instability on the official platform.	Positive perception, with the help of an intermediary.	Positive perception with support mediated by a retained lawyer.

Note. Developed by the authors.

Multiple markers of intersectionality were present in Cases 1, 2, and 3, affecting the plaintiffs' or potential beneficiaries' capacity to access justice. In the specific context of family justice, the most common characteristics identified were female (gender), Black (racial identity), low income (economic), and low educational attainment or limited knowledge of one's rights (education). These characteristics were also generally associated with low technological capacity, encompassing both equipment and digital skills. These characteristics are consistent with prior studies (Dobe, 2016; Young & Billings, 2023), confirming that the technological dimension tends to be intertwined with social, economic, and cultural dimensions.

The plaintiffs' experiences and perceptions were, however, significantly shaped by intermediaries' assistance in navigating barriers to access to justice, most notably in Cases 1, 3, and 4. The role of intermediaries emerged throughout the research as an important moderating factor in the plaintiffs' access-to-justice experiences, highlighting the need for digital transfor-

mation processes to be accompanied by cross-cutting, human-centered inclusion measures.

Case 4 served as a contrasting reference point for the intersectional markers present in the preceding cases, illustrating a reduction in intersectional effects. The diminishment of compounded disadvantages translated into an improved access-to-justice experience, including the effective offsetting of potential difficulties in the technological dimension. This case foregrounded the perceived advantages of ICT-based solutions for access to justice.

These cases collectively suggest that the way technological solutions are incorporated into the justice system tends to replicate existing social practices. The technological changes examined produced only incremental shifts in the possibilities for citizen-justice interaction, falling short of overcoming access barriers on their own. On the contrary, in cases marked by stronger intersectional effects, technological mediation can reinforce those barriers (Case 2) or make the intervention of intermediaries necessary (Cases 1 and 3). It is therefore

necessary to adopt cross-cutting socio-digital inclusion measures targeted at citizen profiles with a higher incidence of intersectional effects on access to justice, and to embed such requirements within the very process of developing technological solutions.

The application of the analytical dimensions and the evidence of intersectional effects lend support to the validation of the proposed framework. The analyses confirmed the relational nature of the organizational and citizen-level dimensions: the greater the intersectionality of social disadvantages, the more pronounced the likelihood of compounded inequalities, particularly in the absence of intermediaries. The framework thus proves capable of revealing the complex relationships between organizational structure and citizens' conditions for accessing justice, and of highlighting the need for deeper intra-group analysis, specifically of intersectional effects that require cross-cutting approaches to tackling structural inequality.

FINAL CONSIDERATIONS

This study proposed an analytical framework that integrates multiple organizational and citizen-level dimensions affecting ICT-mediated access to justice, with a focus on examining compound intersectional effects. The framework was developed through a literature review that sought to incorporate scholarship on intersectionality and socio-digital inequalities in access to justice and was subjected to initial validation through a qualitative study of four cases in Brazil, situated within a context of high socio-digital inequality. Although the number of cases is small, the analysis demonstrated that citizen-level dimension variables are pertinent for identifying overlapping disadvantages (intersectionalities) and that they interact with organizational dimensions in shaping citizens' access-to-justice experiences.

The framework makes several contributions to the field of access-to-justice research. It integrates the analysis of organizational- and citizen-level conditions and, crucially, incorporates variables related to equipment access, ICT use, and digital competence into the examination of intersectional effects. While intersectionality has been recognized as a theoretically and analytically relevant condition in numerous studies on access to justice and e-justice, few have proposed frameworks for operationalizing this analysis. The framework developed by [Young and Billings \(2023\)](#) is a notable exception, but even there, variables directly associated with the technological dimension had not been incorporated. The present study offers an initial validation of the proposed framework, which future research may apply, refine, and expand.

Developing integrated analytical models of intersectionality in access to justice, within the context of digital transformation, is also essential as a diagnostic and analytical guide for justice system organizations. Decision-makers, including those responsible for ICT, need to be sensitized to the importance of relational analysis that connects organizational structure and technological development with the lived experiences of lay users, as a prerequisite for effectively reducing socio-digital inequalities and broadening access to justice for disadvantaged citizens. The framework's integrated and intersectional perspective enables examination of why isolated social or digital inclusion measures are insufficient and invites reflection on the development of cross-cutting, integrative solutions through more inclusive and participatory technological governance processes.

This study was necessarily limited to a single jurisdictional area, family law, within one court of justice. Future studies could broaden the framework's application across the justice system as a whole. Analyses of other jurisdictional areas may reveal different intersectional dynamics and distinct managerial priorities. Criminal courts, for instance, are also marked by significant inequality, and analysis in that context could help expand the framework's analytical dimensions and characterize distinct priority profiles for targeted inclusion measures.

A further avenue for future research is analyzing citizen interaction with the full range of technological tools and systems within the justice system. The study focused primarily on the hearing moment, particularly when conducted virtually or in a hybrid format, without examining in depth other stages of citizen-justice interaction, such as filing or monitoring proceedings. Analysis of these stages should not focus exclusively on technological and organizational efficiency gains but should attend equally to inclusion and to the mitigation of the obstacles citizens encounter when seeking justice.

Finally, the application of the framework in future studies across diverse national and social contexts will be important. The framework was designed to be broad, encompassing a wide range of disadvantages in society as identified in the literature review. Its application in different contexts, however, may require adaptations to reflect the social cleavages most salient in each setting. In this framework, for example, the situation of immigrants was subsumed under the variable "ethnocultural origin," but in other contexts this may warrant treatment as a distinct variable. The framework is thus understood to be open to contextual adaptation while retaining its core characteristics of integrated and intersectional analysis.

ENDNOTE

1. An index used to measure income inequality within a population by assessing the concentration of income among specific groups (IPEA, 2004).
2. The TJMA's 2023 annual budget totaled BRL 1,969,229,000.00.

REFERENCES

- Agrifoglio, R., Lepore, L., & Metallo, C. (2013). Measuring the success of e-justice: A validation of the DeLone and McLean model. In P. Spagnoletti (Ed.), *Organizational change and information systems* (Lecture Notes in Information Systems and Organisation, Vol. 2). Springer. https://doi.org/10.1007/978-3-642-37228-5_9
- Arias, I. & Maçada, A. C. G. (2020). Judiciaries' modernisation through electronic lawsuits: Employees' perceptions from the Brazil and Argentina federal justice services. *Information Development*. Vol. 36 n° 1. <http://repositoriodigital.uns.edu.ar/handle/123456789/4775>
- Bala, S., & Singhal, P. (2018). Gender digital divide in India: A case of inter-regional analysis of Uttar Pradesh. *Journal of Information, Communication and Ethics in Society*, 16(2), 173-192. <https://doi.org/10.1108/JICES-07-2017-0046>
- Bailey, J., Burkell, J., & Reynolds, G. J. (2013). Access to justice for all: Towards an expansive vision of justice and technology. *Windsor Yearbook of Access to Justice*, 31(2). <https://doi.org/10.2139/ssrn.2605462>
- Bedner, A., & Vel, J. (2010). An analytical framework for empirical research on access to justice. *Law, Social Justice & Global Development Journal*, 15(1). https://www.researchgate.net/publication/239855859_An_analytical_framework_for_empirical_research_on_Access_to_Justice
- Blank, G., & Groselj, D. (2014). Dimensions of internet use: Amount, variety, and types. *Information, Communication & Society*, 17(4), 417-435. <https://doi.org/10.1080/1369118X.2014.889189>
- Brooke, H. (2004). The legal and policy implications of courtroom technology: The emerging English experience. *William & Mary Bill of Rights Journal*, 12, 699-728. <https://scholarship.law.wm.edu/wmborj/vol12/iss3/7/>
- Conselho Nacional de Justiça. (2023). Programa das Nações Unidas para o Desenvolvimento Pesquisa sobre percepção e avaliação do Poder Judiciário brasileiro. *Conselho Nacional de Justiça*. <https://www.cnj.jus.br/wp-content/uploads/2023/04/relatorio-pesquisa-percepcao-e-avaliacao-do-pjb.pdf>
- Contini, F., & Cordella, A. (2007). Information systems and information infrastructure deployment: The challenge of the Italian e-justice approach. *The Electronic Journal of e-Government*, 5(1), 43-52. https://www.researchgate.net/publication/30529676_Information_system_and_information_infrastructure_deployment_The_challenge_of_the_Italian_e-justice_approach
- Corvalán, J. G., & Sá Zeichen, G. (2018). *Justicia 4.0: El uso de inteligencia artificial para acercar la justicia a los ciudadanos. In Justicia abierta: Aportes para una agenda en construcción*. SAJ. <http://www.bibliotecadigital.gob.ar/items/show/1818>
- Crenshaw, K. (2002). Documento para o encontro de especialistas em aspectos da discriminação racial relativos ao gênero. *Revista Estudos Feministas*, 10(1), 171-188. <https://doi.org/10.1590/S0104-026X2002000100011>
- Dobe, D. (2016). Contesting essentialism: The role of pluralism and intersectionality in access to justice. *Queen Mary Law Journal*, 7(Special Conference Issue), 125-134. <https://www.qmul.ac.uk/law/research/journals/the-queen-mary-law-journal/media/law/docs/research/Contesting-Essentialism.pdf>
- Dobransky, K., & Hargittai, E. (2016). Unrealized potential: Exploring the digital disability divide. *Poetics*, 58, 18-28. <https://doi.org/10.1016/j.poetic.2016.08.003>
- Donoghue, J. (2017). The rise of digital justice: Courtroom technology, public participation and access to justice. *The Modern Law Review*, 80(6), 995-1025. <https://doi.org/10.1111/1468-2230.12300>
- Dussan, C. C., & Avellaneda, M. B. (2018). Acceso a la justicia alternativa: Un reto complejo. *Utopía y Praxis Latinoamericana*, 23(2), 163-177. <https://doi.org/10.5281/zenodo.1802160>
- Fabri, M. (2021). Will COVID-19 accelerate implementation of ICT in courts? *International Journal for Court Administration*, 12(2). <https://doi.org/10.36745/ijca.384>
- Gontijo, D. C. A. (2015). *O direito fundamental de acesso à justiça*. LTr.
- Hamedanian, F., & Arjmand, R. (2026). Access to justice for immigrant women facing domestic violence in Sweden. *Social & Legal Studies*, 35(1), 98-120. <https://doi.org/10.1177/09646639251330499>
- Hargittai, E. (2002). Second-level digital divide: Differences in people's online skills. *First Monday*, 7(4). <https://doi.org/10.5210/fm.v7i4.942>
- Hargittai, E., & Hinnant, A. (2008). Digital inequality: Differences in young adults' use of the internet. *Communication Research*, 35(5), 602-621. <https://doi.org/10.1177/0093650208321782>
- Hughes, P. (2013). Advancing access to justice through generic solutions: The risk of perpetuating exclusion. *Windsor Yearbook of Access to Justice*, 31(1), 55-70. <https://doi.org/10.22329/wyavj.v31i1.4308>
- Instituto Brasileiro de Geografia e Estatística. (2023). *Pesquisa Nacional por Amostra de Domicílios Contínua Anual: 4º trimestre de 2023*. <https://sidra.ibge.gov.br/tabela/7334>
- Instituto de Pesquisa Econômica Aplicada. (2004). *O Que é? - Índice de Gini. Desafios do Desenvolvimento*. https://www.ipea.gov.br/desafios/index.php?option=com_content&id=2048&catid=28
- Junqueira, E. B. (1996). Acesso à justiça: Um olhar retrospectivo. *Estudos Históricos*, 9(18), 389-402. <https://periodicos.fgv.br/rev/article/view/2025>
- Kistemaker, L. (2021). Rechtwijzer and Uitelkaar.nl: Dutch experiences with ODR for divorce. *Family Court Review*, 59(2), 232-243. <https://doi.org/10.1111/fcre.12570>
- Legg, M., & Song, A. (2021). The courts, the remote hearing and the pandemic: From action to reflection. *University of New South Wales Law Journal*, 44(1). UNSW Law Research Paper No. 21-55. <https://ssrn.com/abstract=3863754>
- Leitch, J. (2025). Technology and access to justice: Virtual justice or just virtual? In *Building Better Futures: Promoting Hope and Resilience Through Law and Advocacy* (Vol. 76). <https://journals.lib.unb.ca/index.php/unblj/article/view/35950>
- Lozanovska, I., & Shapkoski, V. (2021). Access to justice in the time of pandemic: Functioning of legal aid forms in North Macedonia. *Journal of Liberty and International Affairs*, 7(3), 84-98. <https://doi.org/10.47305/JLIA21170070shl>
- Marche, S., & McNiven, J. D. (2003). E-government and e-governance: The future isn't what it used to be. *Canadian Journal of Administrative Sciences*, 20(1), 74-86. <https://doi.org/10.1111/j.1936-4490.2003.tb00306.x>
- Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*, 36(4), Article 101385. <https://doi.org/10.1016/j.giq.2019.06.002>
- Moraes, C. M., Alencar, N. P. R., & Siqueira, N. S. (2019). Processo judicial em meio eletrônico e ampliação do acesso à justiça. *Revista do Tribunal Superior do Trabalho*, 85(3), 118-154. <https://hdl.handle.net/20.500.12178/165764>
- Mulcahy, L., & Tsalapatanis, A. (2022). Exclusion in the interests of inclusion: Who should stay offline in the emerging world of online justice? *Journal of Social Welfare and Family Law*, 44(4), 455-476. <https://doi.org/10.1080/09649069.2022.2136713>
- Murray, K. M. (2021). *Achieving Digital Equity in Access to Justice*. Legal Services Society of British Columbia. https://legaid.bc.ca/sites/default/files/inline-files/Murray_2021_LABC_Achieving_Digital_Equity_Final_Report.pdf
- Organisation for Economic Co-operation and Development. (2019). *Equal Access to Justice for Inclusive Growth: Putting People at the Centre*. OECD. https://www.oecd.org/content/dam/oecd/en/publications/reports/2019/03/equal-access-to-justice-for-inclusive-growth_a69ac7da/597f5b7f-en.pdf
- Organisation for Economic Co-operation and Development. (2023). *OECD economic surveys: Brazil 2023*. OECD Publishing. <https://static.poder360.com.br/2023/12/ocde-estudo-brasil-18dez2023.pdf>
- Palombella, G. (2020). Access to justice: Dynamic, foundational, and generative. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3609152>
- Park, S., & Humphry, J. (2019). Exclusion by design: Intersections of social, digital and data exclusion. *Information, Communication & Society*, 22(7), 934-953. <https://doi.org/10.1080/1369118X.2019.1606266>
- Pearce, K. E., & Rice, R. E. (2013). Digital divides from access to activities: Comparing mobile and personal computer internet users. *Journal of Communication*, 63(4), 721-744. <https://doi.org/10.1111/jcom.12045>
- Prescott, J. J. (2017). Improving access to justice in state courts with platform technology. *Vanderbilt Law Review*, 70(6), 1993-2050
- Pukdeewut, A., & Sethasuravich, P. (2024). Bridging the third-level digital divide: Socio-demographic determinants of digital outcomes in Thailand. *FWU Journal of Social Sciences*, 18(4). <https://ojs.sbbwu.edu.pk/fwu-journal/index.php/ojs/article/view/3487>
- Rampim, T., & Igreja, R. L. (2022). Acesso à justiça e transformação digital: Um estudo sobre o Programa Justiça 4.0 e seu impacto na prestação jurisdicional. *Direito Público*, 19(102). <https://doi.org/10.11117/rdp.v19i102.6512>
- Rankin, Y., Thomas, J., & Erete, S. (2021). Black women speak: Examining power, privilege, and identity in CS education. *ACM Transactions on Computing Education*, 21(4), Article 26. <https://doi.org/10.1145/3451344>
- Razmetaeva, Y., & Razmetaev, S. (2021). Justice in the digital age: Technological solutions, hidden threats and enticing opportunities. *Access to Justice in Eastern Europe*, 4(2), 104-117. <https://doi.org/10.33327/AJEE-18-4-2-a000061>
- Reiling, D., & Contini, F. (2022). E-justice platforms: Challenges for judicial governance. *International Journal for Court Administration*, 13(1), Article 6. <https://doi.org/10.36745/ijca.445>

Resolução n. 299 de 05 de novembro de 2019. (2019). Dispõe sobre o sistema de garantia de direitos da criança e do adolescente vítima ou testemunha de violência, de que trata a Lei nº 13.431, de 4 de abril de 2017. *Conselho Nacional de Justiça*. <https://atos.cnj.jus.br/atos/detalhar/3110>

Resolução. 354, de 19 de novembro de 2020. (2020). Dispõe sobre o cumprimento digital de ato processual e de ordem judicial e dá outras providências. *Conselho Nacional de Justiça*. <https://atos.cnj.jus.br/atos/detalhar/3579>

Riggins, F. J., & Dewan, S. (2005). The digital divide: Current and future research directions. *Journal of the Association for Information Systems*, 6(12). <https://doi.org/10.17705/jais.00074>

Rossner, M., Tait, D., & McCurdy, M. (2021). Justice reimaged: Challenges and opportunities with implementing virtual courts. *Current Issues in Criminal Justice*, 33(1), 94-110. <https://doi.org/10.1080/10345329.2020.1859968>

Santos, B. S. (1997). *Pela mão de Alice: O social e o político na pós-modernidade* (3ª ed.). Cortez.

Scheerder, A., Van Deursen, A. J. A. M., & Van Dijk, J. A. G. M. (2017). Determinants of internet skills, uses and outcomes: A systematic review of the second- and third-level digital divide. *Telematics and Informatics*, 34(8), 1607-1624. <https://doi.org/10.1016/j.tele.201707007>

Schmitz, A. J. (2019). Expanding access to remedies through e-court initiatives. *Buffalo Law Review*, 67(1), 89-140. <https://digitalcommons.law.buffalo.edu/buffalolawreview/vol67/iss1/3>

Schmitz, A. J. (2020). Measuring access to justice in the rush to digitalize. *Fordham Law Review*, 88(6), 1981-2012. <https://ir.lawnet.fordham.edu/flr/vol88/iss6/11>

Schwab, K. (2017). *The fourth industrial revolution*. Crown Business.

Sen, A. (2008). *Desigualdade reexaminada* (2ª ed.). Record.

Sen, A., & Kliksberg, B. (2010). *As pessoas em primeiro lugar: A ética do desenvolvimento e os problemas do mundo globalizado*. Companhia das Letras.

Simons, H. (2014). Case study research: In-depth understanding in context. In P. Leavy (Ed.), *The Oxford handbook of qualitative research* (pp. 455-470). Oxford University Press.

Shi, C., Sourdin, T., & Li, B. (2021). The smart court: A new pathway to justice in China? *International Journal for Court Administration*, 12(1). <https://doi.org/10.36745/ijca.367>

Tangi, L., Janssen, M., Benedetti, M., & Noci, G. (2021). Digital government transformation: A structural equation modelling analysis of driving and impeding factors. *International Journal of Information Management*, 60, Article 102356. <https://doi.org/10.1016/j.ijinfomgt.2021.102356>

Ter Voert, M., Pivaty, A., & Marique, E. (2022). Access to justice in the digital era. *Recht der Werkelijkheid*, 43(2), 3-12. <https://doi.org/10.5553/RdW/138064242022043002001>

Torlig, E. G. S., & Gomes, A. O. (2021). A urgência de repensar o acesso à justiça no século XXI: Antigos problemas, grandes desafios e novas oportunidades. In *Anais do Encontro de Administração da Justiça*. <https://www.enajus.org.br/anais/assets/papers/2021/sessao-18/1-a-urgencia-de-repensar-o-acesso-a-justica-no-seculo-xxi-antigos-problemas-grandes-desafios-e-novas-oportunidades.pdf>

Tribunal de Justiça do Maranhão. (2023). *Consulta das publicações: Íntegra da lei orçamentária e dos QDD internos*. <https://www.tjma.jus.br/transparencia/portal/pessoal/arquivos-gerenciador-conteudo/proposta-orcamentaria/lei-orcamentaria>

Van Deursen, A. J. A. M., & Helsper, E. J. (2015). The third-level digital divide: Who benefits most from being online? In L. Robinson, S. R. Cotten, & J. Schulz (Eds.), *Communication and information technologies annual* (Vol. 10, pp. 29-52). Emerald. <https://doi.org/10.1108/S2050-206020150000010002>

Wallace, A. (2008). Virtual justice in the bush: The use of court technology in remote and regional Australia. *Journal of Law, Information and Science*, 19(1), 1-21. <https://search.informit.org/doi/10.3316/agispt.20103834>

Warner, J. (2020). Judging in a time of COVID. *Family Court Review*, 58(4), 965-967. <https://doi.org/10.1111/fcre.12529>

Watanabe, K. (2019). *Acesso à ordem jurídica justa: Conceito atualizado de acesso à justiça, processos coletivos e outros estudos*. Del Rey.

Wei, K.-K., Teo, H.-H., Chan, H. C., & Tan, B. C. Y. (2011). Conceptualizing and testing a social cognitive model of the digital divide. *Information Systems Research*, 22(1), 170-187. <https://www.jstor.org/stable/23015630>

Williams, R. J. (2021). Taking a shot: Access to justice, judging and eCourt. *Family Court Review*, 59(2), 278-293. <https://doi.org/10.1111/fcre.12574>

Young, K. M., & Billings, K. R. (2023). An intersectional examination of U.S. civil justice problems. *Utah Law Review*, 2023(3), 487-540. <https://doi.org/10.26054/0d-zv1c-rh2z>

Authors

Katy Maria Nogueira Morais 

Universidade Estadual do Maranhão, Centro de Ciências Sociais Aplicadas

Av. Lourenço Vieira da Silva, n. 1000, Jardim São Cristóvão, CEP 65055-310, São Luís, MA, Brazil

katymorais@professor.uema.br

Diana Cruz Rodrigues 

Museu Paraense Emílio Goeldi

Av. Gov Magalhães Barata, n. 376, São Braz, CEP 66040-170, Belém, PA, Brazil

Universidade da Amazônia, Programa de Pós-Graduação em Administração

Av. Alcindo Cacela, n. 287, Umarizal, CEP 66060-902, Belém, PA, Brazil

dianarodrigues@museu-goeldi.br

Eden do Carmo Soares Junior 

Controladoria Geral da União

Setor de Autarquias Sul, Quadra 5, Bloco A, CEP 70070-050, Brasília, DF, Brazil

eden-jr@hotmail.com

João Paulo dos Santos da Silva 

Universidade da Amazônia, Programa de Pós-Graduação em Administração

Av. Alcindo Cacela, n. 287, Umarizal, CEP 66060-902, Belém, PA, Brazil

joaopssilva803@gmail.com

Authors' contributions

1st author: conceptualization (lead), data curation (lead), formal analysis (equal), writing - original draft (lead), writing - review & editing (equal).

2nd author: conceptualization (supporting), formal analysis (supporting), supervision (lead), writing - original draft (supporting), writing - review & editing (lead).

3rd author: formal analysis (supporting), validation (equal), visualization (equal), writing - review & editing (supporting), writing - review & editing (supporting).

4th author: conceptualization (supporting), validation (equal), visualization (equal), writing - review & editing (supporting).