



Article

Digital Access to Judicial Services in the Brazilian Amazon: Barriers and Potential

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Abstract: This study investigates the influence of geographical barriers and the challenges and advantages presented by information and communication technologies on digital governance within the judicial branch in the Brazilian Amazon region. The primary objective is to provide diagnoses and recommendations that can inform the construction of research for the development of policies aimed at enhancing access to judicial services by riverside populations. The methodology initially employed was a comprehensive literature review on digital governance within the judiciary and access to justice for vulnerable groups in a geographical context. Subsequently, a qualitative study was conducted, employing participant observation in the riverside communities of Itapéua and Boca do Una, situated along the Jaurucu River within the Porto de Moz District in the state of Pará. The insights garnered from respondent perceptions and participant observations were synthesized to formulate five key dimensions for digital governance and access to justice within Amazonian communities: (1) one's experience with justice, (2) access to information, (3) geographical barriers, (4) user-friendliness of technology, and (5) resources and infrastructure supporting technology use. The study concludes that there are compelling indications that tailored digital governance and technology utilization by the judiciary, adapted to regional nuances, can significantly contribute to streamlining access to judicial services.



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Keywords: New Public Governance; digital transformation in the judiciary; access to justice; Amazon region; riverside populations

1. Introduction

The digital transformation has exerted a profound influence on the Brazilian judiciary in recent years, particularly with the expansion of judicial services offered in a digital format. The “Justice in Numbers” report, compiled by the National Council of Justice ([Conselho Nacional de Justiça 2022](#)), establishes a correlation between the uptick in digitized cases and enhanced performance in quantitative terms. Nonetheless, the incorporation of new digital solutions within the judiciary necessitates an examination of additional barriers ([Maia and Correia 2022b](#)), conveniences, and opportunities ([Torlig et al. 2023](#)) linked to access to justice. It is crucial that digital governance takes into consideration the assessment of the organizational impact of employing novel technologies for such access. Despite considerable efforts directed toward addressing the issue of access to justice over the years, persistent geographical barriers in Brazil have impeded individuals and groups in vulnerable situations from exercising their rights in the geographical sense ([Torlig et al. 2023](#)).

In this context, the Brazilian Amazon region emerges as a pertinent focal point for research. It holds strategic geographical importance ([Moreira 1960](#)), encompassing roughly 60% of Brazil's territory ([Instituto Brasileiro de Geografia e Estatística 2023](#)). From a social and human standpoint, it is characterized by a predominance of riverside populations residing along its vast rivers, who often contend with substantial travel distances to access

urban centers concentrated with public goods and services designed to fulfill their rights (Calegare et al. 2013). Yet, despite this significance, there is a noticeable dearth of theoretical and empirical research on access to justice in the Brazilian Amazon region.

This article seeks to investigate the impact of geographical barriers, as well as the impediments and advantages presented by information and communication technologies, on the digital governance of the judiciary in the Brazilian Amazon region concerning access to digital judicial services and, consequently, to rights for riverside populations. The objective is to provide diagnoses and proposals that can inform the development of policies aimed at facilitating such access.

To achieve this goal, the methodology employed involves a literature review designed to assess the current state of digital governance within the judiciary and access to justice and rights for individuals and groups in vulnerable situations, particularly in the geographical context. Additionally, we scrutinized the life context of the riverside population in the Brazilian Amazon region and the municipality of Porto de Moz, Pará, through documentary research, data collection, and participant observation. Subsequently, we analyzed and deliberated on the data collected through participant observation and qualitative research based on interviews with residents of the Amazonian riverside communities of Itapéua and Boca do Una, focusing on their perception of digital access to justice. Both are situated on the banks of the Jaurucu River, belonging to the municipality of Porto de Moz. Finally, based on the observed results, we formulated diagnoses and present proposals to contribute to the construction of research for the development of policies that facilitate access to justice and rights for riverside populations, along with outlining a research agenda.

2. Digital Governance in the Judiciary and Access to Justice: A Theoretical Framework

Advancing digital governance within the judiciary as a means to enhance access to justice for individuals and groups facing geographical vulnerability is a policy in its nascent stages within the current Brazilian landscape. Nevertheless, its potential impact on social transformation is considerable. The existing body of academic research that intricately links these two themes is in the construction phase, especially considering the region chosen for the research. In an advanced search on Google Scholar, using the words “digital governance” and “access to justice”, 564,000 results were listed. When including the word “Amazon” in the same search, the location subject of this research, only 70,700 results were found.

Subsequently, we employed the keywords “digital governance” and “Amazon” on Google Scholar, along with “access to justice” and “Amazon” simultaneously in both English and Portuguese, refining our search parameters in the “subject” field within the “advanced search” mode. The results were meticulously read and examined to ensure alignment with the search criteria specified in the article titles. Regrettably, only three (3) articles were unearthed, underscoring the paucity of research on this vital subject. The situation of geographic vulnerability of riverside populations constitutes a relevant barrier to access to judicial services. Digital justice instruments have the potential to improve access to justice or accentuate rates of social and digital exclusion. Therefore, verifying the perception of the riverside population is an important basis for research on judicial policies in this scenario.

The following Table 1 delineates the scientific articles pertinent to the topic:

This context underscores the imperative for advancing both theoretical and empirical research that bridges the conceptual realms of digital governance and access to justice, particularly in the Brazilian Amazon, where the geographical vulnerability of riverside populations poses a significant barrier to accessing rights and justice. Initiatives aimed at enhancing the reach of digital justice can either ameliorate access or exacerbate rates of social and digital exclusion. Therefore, gauging the perception of the riverside population becomes a pivotal foundation for advancing judicial policies in this challenging setting.

Table 1. Current state of digital governance and access to justice in the Brazilian Amazon.

Paper Title	Author(s)	Country	Theme	Approach	Year
“Amazônia e acesso à justiça em tempos de pandemia” (“Amazon and Access to Justice in pandemic times”)	Melo, Sandro Nahmias and Corrêa, Igo Zany Nunes	Brazil	Access to justice, labor justice, itinerant justice, pandemic.	Theoretical	2022
“Access to justice, Labor Justice and the implementation of a 100% digital court in the Pará Amazon”	Andrey, José da Silva Gouveia and Andreza, do Socorro Pantoja de Oliveira	Brazil	Access to justice, 100% digital court, labor justice, the Amazon.	Theoretical	2023
“Indigenous lands in the Western Amazon: rights violations and narrow access to justice”	Padilha, Lindomar Dias and Salles, Denise Lopes	Brazil	Access to justice, demarcation of indigenous lands, the Amazon.	Theoretical	2019

Source: Prepared by the authors.

2.1. Digital Governance in the Judiciary

The evolution witnessed in public administration models is intrinsic to the dynamic way the state functions, especially within the realms of the economy and society (Resende et al. 2022). We transition from a producer/authoritarian state model, characterized by minimal social intervention, to a regulator/financier state. This shift was prompted by the imperative to proactively address the social devastation resulting from the two major world wars. Subsequently, the adoption of a partner/negotiator state model followed, necessitated by the need to seek external forces to counteract the deleterious effects of successive global economic crises in the 1970s (Maia and Correia 2022a). A context of heightened pressure on governments to become more efficient and effective emerged, transforming the initially hierarchical and bureaucratic model into what is now known as “New Public Governance” (Moraes et al. 2023). This new model encapsulates the plural essence of the contemporary state, wherein various actors contribute to the provision of public services and the formulation of public policies (Dickinson 2016).

In recent decades, the evolution of public governance has been closely tied to technological transformations culminating in the current digital age (Cepik et al. 2010). Alongside the societal shift towards digital transformation (Freitas et al. 2023), the use of information and communication technologies by public sector organizations has expanded, following a trend commonly referred to as “e-government” (Henning and Ng 2009).

The public administration recognizes that developing and implementing public policies using new information and communication technologies is a crucial mechanism for ensuring broader access, transparency, efficiency, and quality of public services while also promoting citizen participation in the decision-making process (Maia and Correia 2022b). The perception of the service user has gained prominence as a vital variable for constructing relevant public policies (Ye et al. 2023). Information and communication technology has become an indispensable means of exchange between the poles of public administration and citizen relationships.

In the digital governance era, information and communication technology ceases to be created and used solely for the internal management of administrative processes (Horobeț et al. 2023). Indeed, it becomes part of a holistic planning that encompasses the goals and purposes of the institution and engages with and serves the entire user base, being an integral part of the political and multi-sectoral reality of the public sector (Maia and Correia 2022a).

The use of digital technology in the judicial system would improve the ability to resolve conflicts and create opportunities to increase access and law enforcement (Kondori and Saeed 2021). It refers to the judiciary use of information and communication technologies to provide quality services and access to knowledge, thereby increasing citizen participation (Erkut 2020).

Therefore, digital governance transcends the mere implementation of innovative technologies for public services in electronic format (Ravšelj et al. 2022) since it also encompasses added value through innovation, fostering diverse relationships related to information, communication, and transactions. This includes enhancing accessibility, improving the quality of public services, internal efficiency, and increasing citizen participation in the political decision-making process (Maia and Correia 2022a).

The support of technology for the provision of judicial services has the potential to, in theory, increase the processing of cases in digital format, causing possible improvements in performance and increasing access to justice. The development of technologies in judicial systems must be in accordance with procedural law and fair adjudication. Therefore, solutions must be found within the scope of judicial governance (Reiling and Contini 2022).

In the judiciary, governance encompasses a set of factors essential for enhancing the delivery of justice, striving to achieve its intended goals with efficiency, quality, and humanity (Borba et al. 2023). It is a multifaceted and plural concept, representing the manner of conducting affairs within the organization, distinct from, and not presupposing, good governance itself (Akutsu and Guimarães 2015). Judicial governance is not limited to the implementation of new theories and management techniques, as it considers judicial independence as a central value (Ng 2011).

The Brazilian judiciary has undergone substantial impacts from the digital transformation process, particularly in the last three years, driven by an increased influx of innovation and technology within the post-pandemic justice system (Oliveira et al. 2023). Noteworthy are various programs and initiatives accelerating the adoption and implementation of information and communication technologies, the impact of which is meticulously assessed through data panels centralized by the Brazilian National Council of Justice (Conselho Nacional de Justiça 2022).

Initiatives like the digitization of the Brazilian justice system's backlog, computerization of judicial proceedings, virtual services offered by the virtual branch and the 100% digital court, and others incorporated into the Justice 4.0 Program have been instrumental (Conselho Nacional de Justiça 2023). Despite the most severe health crisis of the century (COVID-19), not only was judicial service uninterrupted, but innovations were introduced, improving the handling of the monumental procedural backlog and the duration of legal proceedings. This has yielded better performance rates, though not entirely sufficient to drastically reduce the national backlog of pending cases (Conselho Nacional de Justiça 2022).

The digital transformations implemented, especially after the start of the pandemic (COVID-19), focused on maintaining the functioning of the judicial service even with the closure of the physical structures of the judiciary. Inserting processes into digital systems, serving lawyers online, improving notary routines with the use of artificial intelligence, and holding hearings in digital format are some examples of the changes implemented in Brazil regarding digital judicial access (Conselho Nacional de Justiça 2022). However, nothing specific has yet been developed to increase access to judicial services for people who live in locations very far from urban centers. Geographical barriers related to access to justice have not yet been sufficiently addressed in Brazil.

Judicial governance practices aimed at influencing the accessibility and performance of the judiciary must extend beyond seeking improved productivity rates or a reduction in case backlogs. Consideration must be given to the axes of humanization and access to justice, especially for geographically vulnerable groups (Pereira et al. 2022). Furthermore, for justice to achieve its primary objectives, it must be embedded in a faster, more sustainable, and human-centered model.

Therefore, innovation places e-government in the judiciary as a means to leverage new information and communication technologies, rendering justice more accessible, effective, and accountable. However, alongside this opportunity, digital governance also presents the challenge of addressing problems associated with digital exclu-

sion/division/inequality, often rooted in pre-existing social inequalities and exacerbated by the digital age (Maia and Correia 2022b).

Collaborative efforts are necessary to ensure that digital governance not only enhances the performance of justice, but also becomes more accessible to vulnerable population groups. The use of information and communication technologies, in this context, can reshape interactions between citizens and public administration (Barbosa 2017). However, the specific challenges and risks involved must be observed, such as the relevance of the processes, legal restrictions, guaranteeing the independence of the judiciary, good system design, user experience, and high interoperability (Yavuz et al. 2022).

Thus, implementing changes that steer the judiciary toward the adoption of new strategic innovation solutions is important for overcoming existing barriers to access to justice for the most geographically vulnerable (Torlig et al. 2023).

Digital governance in the judiciary should not solely focus on implementing new information and communication technologies that drive the digital transformation process. It is equally important to align these implementations with the development of innovative judicial management and governance tools and processes capable of democratizing access to rights and justice (Henning and Ng 2009). Finally, it is crucial to align citizen participation in decision-making processes through online interactions (Maciel and Stéphanie 2020).

2.2. Access to Justice for People and Groups in Situations of Geographic Vulnerability

Access to justice is a topic that has been addressed for a considerable amount of time and is recurrent in the literature, both national and foreign. Research has focused on trying to find alternatives to enable a balanced legal system, in which people, especially in vulnerable situations, can achieve denied rights and, in this way, guarantee life in a greater context of possibilities (Torlig et al. 2023). However, what still exists in the Brazilian context is the existence of people and groups in vulnerable situations, especially in a geographical sense, for whom access to the most basic rights, such as the simple issuance of civil documents, can still be considered a challenge (Sadek 2009).

Although there is no single definition, access to justice was indicated by the World Justice Project as the ability of all people to seek and obtain effective solutions through accessible, impartial, efficient, effective, and culturally independent justice institutions (Voert et al. 2022).

Access to justice was treated by Cappelletti and Garth (1988) as a topic that is difficult to define, but which serves to determine two basic purposes of the legal system. The first relates to the way in which people can claim their rights and/or resolve their disputes, which must be truly accessible to everyone; the second purpose focuses on producing results that are individually and socially fair. To this end, the authors indicated the existence of three major waves relating to the barriers encountered to access to justice, which would be related to the indispensability of free judicial services for financially insufficient people, the judicial representation of diffuse and collective interests in access to justice, and new configurations of institutions and actors to promote the aforementioned access (Cappelletti and Garth 1988).

Furthermore, access to justice is highly important for societies concerned with combating inequality and the prevalence of fundamental human rights. Its denial could result in the denial of other rights (Pessoa 2016). The importance of the topic is corroborated by the treatment given to access to justice as a fundamental human right in international human rights treaties (UN-United Nations 1948) and in the UN 2030 Agenda, with the inclusion of one of the sustainable development goals (UN-United Nations 2015).

There are studies that differ in their focus on the type of subjects seeking access to justice. Some indicate everyone's right to obtain justice, while others refer to people who are in vulnerable conditions and, particularly, would face difficulties in accessing justice. Vulnerability, in this aspect, could affect any person, determined situationally and socially, as in the case of an imbalance of power between the parties to a legal relationship (Voert et al. 2022).

In Brazil, there are regions characterized by a high degree of geographical vulnerability, such as that experienced by populations inhabiting the Brazilian Amazon region. This vast tropical forest, occupying approximately 5 million km² (around 60% of the national territory), constitutes the Legal Amazon, spanning nine Brazilian states and 808 municipalities, hosting one-third of the planet's plant species ([Ministério do Meio Ambiente 2023](#)), with a total population estimated at 27,783,584 million inhabitants, according to the 2022 demographic census ([Instituto Brasileiro de Geografia e Estatística 2023](#)).

Hence, investigating the influence of geographical barriers and potentialities on access to justice and rights for the riverside populations of the Brazilian Amazon is imperative. Building on possibilities offered by digital governance in the judiciary, this investigation enables the formulation of diagnoses and proposals, which is essential for developing policies to enhance this access. Such measures are indispensable for constructing a judiciary that aligns more closely with democratizing its reach and effectively resolves conflicts and realizes rights, thereby determining the extent of its own legitimacy.

2.3. Digital Governance and Access to Justice in the Brazilian Amazon Region: Barriers and Potential

In order to investigate the possibilities of increasing access to judicial services through digital justice, the so-called riverside population of the Brazilian Amazon region was chosen as the research object, understood as people and family groups who reside on the banks of the rivers that run through the Amazon Forest in Brazilian territory. These groups live in communities characterized by their unique features and often lack roads for transportation. Consequently, they need to use boats to cover long distances in search of access to the public goods and services they require ([Lira and Chaves 2016](#)).

The riverside communities of the Brazilian Amazon represent a melting pot of diverse social groups that have traversed the region—indigenous people, northeasterners, and migrants from other regions. In itself, this reality entails various constraints, especially in terms of travel within the region to access the nearest urban areas where various public services are typically concentrated ([Gama et al. 2018](#)).

Designated as traditional Amazonian communities, these groups manage natural resources and social organization with a unique model, drawing on extensive knowledge to sustain and manage Amazonian resources. Inherited from their ancestors, this knowledge solidifies social relations, constructs social identities, supports common projects, and manifests diversity ([Lira and Chaves 2016](#)). Respecting a population's perception and way of life extends beyond acknowledging human beings and their cultural expressions; it serves as a means of preserving their identity and culture within the context of the natural biome of the vast and diverse Amazon rainforest ([Gama et al. 2018](#)).

The Amazon, a geographical region capturing global attention beyond political boundaries, is renowned for its immensity, environmental wealth, biodiversity, and its vital role in maintaining the planet's environmental balance. The region was conceptualized by [Moreira \(1960\)](#) from three different perspectives, namely, a hydrographic basin, referring to a river basin (Amazonian) that constitutes the largest drainage basin on the planet; a botanical concept in the face of the vast richness of its fauna and flora; and, finally, a political-economic concept, as it constitutes an area that integrates the northern region of Brazil (and other neighboring countries) and, given the exuberance of its landscapes, is the region of greatest geographical interest in the country ([Moreira 1960](#)).

Considering the situation of geographic vulnerability, the region becomes of interest for the field of study that interconnects the themes of digital governance and access to justice. The objective is to verify whether the implementation of new technological solutions in the judiciary can contribute to access for people who live in regions far from physical judicial courts. It is also important to analyze whether the use of new technologies would be able to mitigate social inequalities, especially in access to justice ([Omari 2018](#)). Therefore, it is important to analyze the possible barriers and potential in this context.

Investigating the riverside population's perception regarding the intricacies of access to digital justice is thus imperative for enhancing their living conditions. Progress in this field of study seeks to safeguard not only the individuals themselves, but also the cultural context and biodiversity of the Amazon—a geographical region of global significance. As the most geographically intriguing place in the country, the Amazon has contributed elements of well-being crucial to the planet's balance and very survival (Lira and Chaves 2016).

3. The Context of the Riverside Population of the Brazilian Amazon and the City of Porto de Moz, Pará, Brazil: Data Collection and Participant Observation

To scrutinize the context of the local population of Porto de Moz, Pará, Brazil, we conducted documentary research, coupled with participant observation, to procure data about the region and its inhabitants.

Arrival at the Boca do Una community takes place by boat, as shown in Figure 1.



Figure 1. A photograph of the arrival at the Boca do Una community in the municipality of Porto de Moz. Source: authors' personal archive.

The data collection transpired during our involvement in the “Itinerant Citizenship” initiative, carried out in the riverside communities of the Pará Amazon, specifically, Itapéua and Boca do Una, both of which are situated within the jurisdiction of Porto de Moz, Pará. This initiative was orchestrated under the guidance of the local judge and unfolded on 22 and 23 March 2023. Throughout the research period, the researchers were aboard a UBS boat—the municipal basic health unit—made available through a collaborative effort between the judiciary and the local city hall. The boat was the means used by the “Itinerant Citizenship” action to enable those involved to reach out to the riverside populations, as shown in Figure 2.

The municipality of Porto de Moz is situated in the north-central region of the state of Pará, positioned at the heart of the Brazilian Amazon, as shown in Figure 3. The different colors show the different municipalities.



Figure 2. A photograph depicting the primary access route for the local population of Boca do Una to the “Itinerant Citizenship” initiative, showcasing the boats of the community members. In the background, the UBS boat, utilized by the researchers for accommodation, is visible. Source: authors’ personal archive.

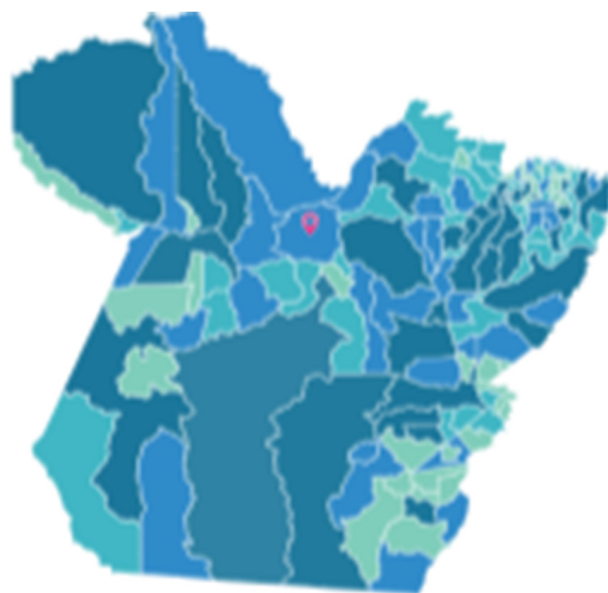


Figure 3. Map depicting the state of Pará, illustrating municipal divisions and pinpointing Porto de Moz. Source: IBGE website featuring the results of the latest demographic census ([Instituto Brasileiro de Geografia e Estatística 2023](#)).

A striking 82% of Porto de Moz’s territory falls within the Verde para Sempre extractive reserve, recognized as a Brazilian conservation unit dedicated to the sustainable utilization of nature. According to the latest census conducted by the IBGE in 2022, Porto de Moz is home to a population of 40,597 inhabitants, boasting a population density of 2.33 individuals per square kilometer and encompassing a vast territorial expanse of 17,423.017 km². The data also reveal that in 2020, the employed percentage of the population was 6.4%, and the average salary for formal workers in the same year stood at BRL 1.9 minimum wage. The IBGE defines the employed population as the portion of the population that, in a given reference period, worked under a formal employment contract ([Instituto Brasileiro de Geografia e Estatística 2023](#)).

Official data on the IBGE website regarding the specific use of technology by the riverside populations of the Amazon is currently unavailable. However, information on the Brazilian population at large, especially internet usage, indicates that 90% of households in the country had internet access in 2021, marking a six percentage-point increase from 2019 ([Instituto Brasileiro de Geografia e Estatística 2022](#)). Consequently, the absence of dedicated data hinders our ability to conclusively determine whether a situation of digital exclusion exists in the riverside communities of the Amazon region. On the other hand, it remains uncertain whether the adoption of new technological solutions could serve as a means to redress social inequalities concerning access to justice and rights for individuals and groups facing geographical vulnerabilities despite the considerable physical challenges associated with such access.

Hence, it becomes imperative to investigate whether and how digital governance in the judiciary might contribute to enhancing access to justice for the riverside population, as well as indicating barriers and possibilities. Recognizing the relevance of local jurisdictional perspectives in shaping judicial policies, we employed the methodology of participant observation and qualitative research. This approach aims to yield diagnoses and proposals, enabling the development of research and tools that can effectively facilitate access to justice and rights for the riverside communities in the Amazon.

4. The Local Population's Perception of Access to Digital Justice in Porto De Moz

The recent and significant digital transformation within the judiciary has positively impacted the performance of judicial services ([Conselho Nacional de Justiça 2022](#)). Investigating how digital governance can enhance access to justice for those facing social vulnerability due to geographical constraints is crucial for addressing social and regional inequalities, as well as for improving the well-being of the local population.

This segment of the research aims to address the following questions: What is the impact of geographical barriers on access to justice in the Amazon region? Considering accessibility constructs and the available resources and structures, what are the facilities or obstacles determined by information and communication technologies? The objective is to observe the context and analyze the perceptions of residents in Amazonian riverside communities concerning the potential and barriers related to the use of communication and information technologies for access to justice and rights. Based on the results observed, diagnoses and proposals can be presented to promote research into improving this access, consistent with the local reality.

4.1. Methodology Employed in the Interviews

Informed by theoretical approaches to digital governance and supported by constructs of judicial governance and new public governance, the research aimed to identify the perceptions of residents of riverside communities in the Brazilian Amazon on two major issues: (i) whether the long distance to the justice building and other public offices would be a significant barrier to access to justice and rights; (ii) whether the use of information and communication technology by the judiciary could improve access to judicial services.

To address these questions, we employed participant observation and qualitative empirical (field) research methods involving the researcher's immersion in the investigated field ([Gustin et al. 2020](#)). The spatial focus was on the riverside communities of Itapéua and Boca do Una, situated on the banks of the Jaurucu River and belonging to the District of Porto de Moz, Pará.

The research team conducted interviews from 22 to 23 March 2023, during an action carried out by the "Itinerant Justice" initiative of the judiciary of the District of Porto de Moz, Pará.

The event called "Itinerant Citizenship Action" ("Ação Cidadania Itinerante") was an initiative developed by the judge of the District of Porto de Moz/PA. The objective was the provision of social services to the riverside population. An agreement was signed with the municipality to make a boat available so that people involved in providing services

could travel to the regions to be served and have accommodation and food during the week of services. Around 30 people gathered to work on services related to issuing civil and electoral documents and providing judicial services and legal assistance in the areas of conflicts, family, social security, and civil law, in addition to other social services, such as vaccinations and haircuts.

The researchers were invited by the organizers of the action to learn about the researched region and develop the research.

Ten individuals, who were randomly selected among the residents who participated in the “Itinerant Justice” initiative to receive services, were interviewed, ensuring diversity in gender, profession, age, education, and social influence in the local communities. The people interviewed were teachers and community agents, as well as men and women of different ages, rural workers, or those who did not perform any type of work.

A questionnaire, aligned with the theoretical constructs of digital justice and access to justice for vulnerable groups in geographical terms, was prepared in advance and administered to each respondent after obtaining their informed consent. The questionnaire covered several aspects, and the participants were asked the following questions: Have you ever sought a justice service or had the need to seek one? How was your experience with the justice service in solving your problem? What were the positive and negative aspects of the interaction? How could technology/digital justice help or hinder access to justice services? Do you have a computer or a mobile device that you can use to access justice services? What about access to the internet? Do you believe that the community having a computer or mobile device (smartphone) equipped with an internet connection could facilitate your access to justice? What kinds of information/instructions would you like to have to be able to seek justice and obtain your rights? What do you think about the possibility of submitting a request to the courts and participating in virtual/telepresence hearings without having to go to the courthouse? What is your opinion about the justice system getting closer to where you live through digital means? In your opinion, how could the use of technology, through access to justice by virtual means—submitting petitions and participating in virtual hearings (via electronic device and the internet)—increase or reduce the time/delay of the process? To conclude the interview, the questionnaire included some personal questions (What is your age? What is your level of education? What languages do you speak? What do you do for a living? What is your approximate income—or do you not work? What is the name of the city and neighborhood where you live?).

Respecting the ethical commitment to ensure anonymity, the respondents are presented in the body of the text using a denomination system: E1, E2, etc. The indicated number corresponds to the sequential number of the respondent, without identifying their name or personal characteristics at the time of the interview, which could identify them.

4.2. Analysis and Discussion of Results

Following the interviews with residents of the Itapéua and Boca do Una communities in Porto de Moz, Pará, the gathered data underwent analysis using the content analysis technique recommended by Bardin (2020). The objective was to transform raw results into meaningful and valid insights, enabling the creation of result tables, diagrams, figures, and models to emphasize the information extracted from the analysis (Bardin 2020).

Thus, we sought to categorize the content of the interviews into dimensions, as well as relating them to the theoretical constructs of digital governance in the judiciary and access to justice.

Utilizing ATLAS.ti software (Desktop version 23), five dimensions were constructed for digital governance and access to justice by riverside communities in the Amazon Region. These dimensions were derived from the content grouping in interviews, namely, (1) one’s experience with justice, (2) access to information, (3) geographical barriers, (4) user-friendliness of technology, and (5) resources and infrastructure supporting technology use.

Initially, eight dimensions were found, including all five mentioned above and three others: communication and understanding of one’s rights; limited awareness about tech-

nology usage; and the precariousness of internet access. However, these last three were disregarded at this time, because they were barely mentioned in the content of the interviews, and there was not enough scientific evidence. In relation to these three, future research is suggested.

Figure 4 identifies the five dimensions found in the interviews, according to the content analysis, presenting a possible correlation between them and digital governance and access to justice.

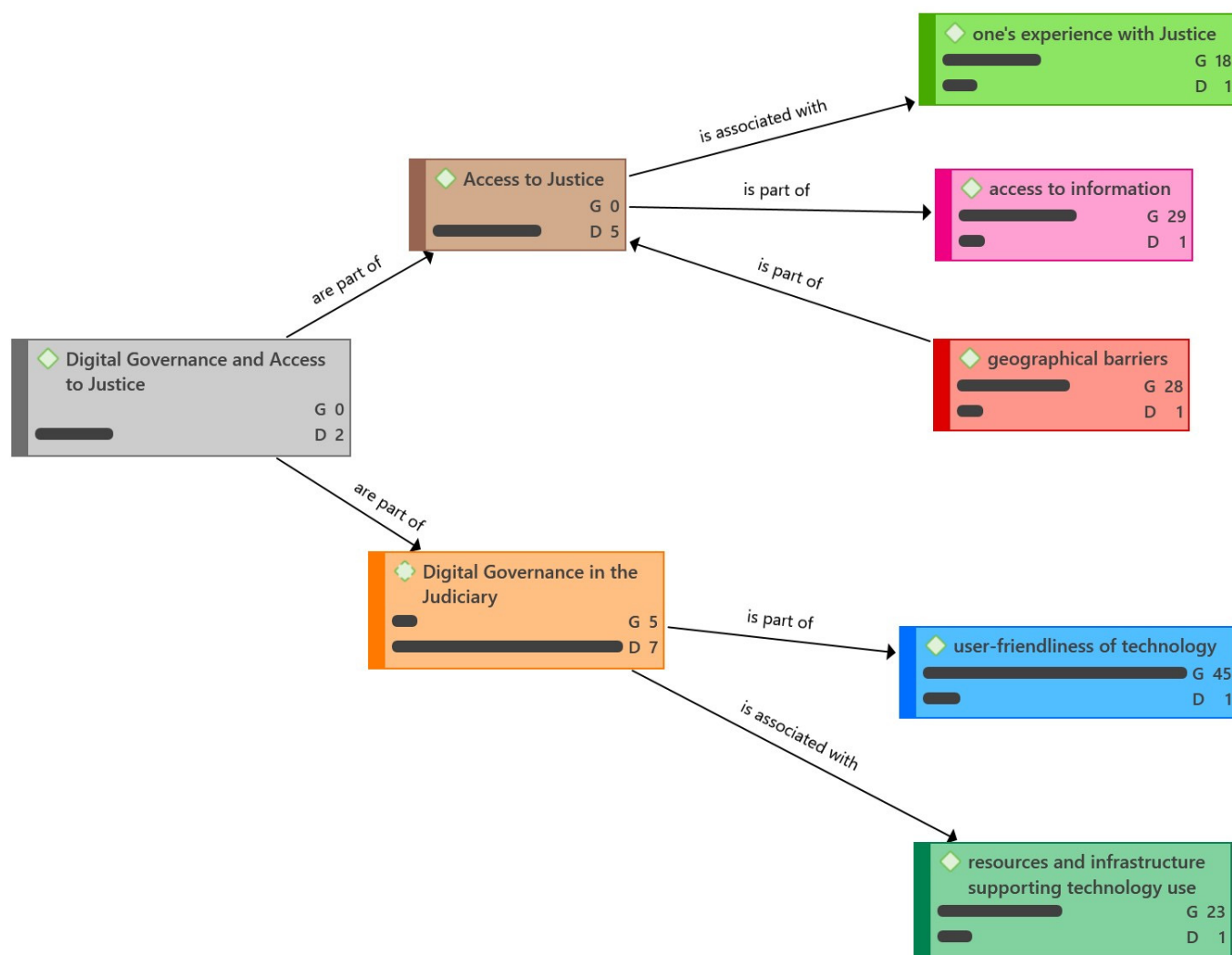


Figure 4. Dimensions for digital governance in the judiciary and access to justice for riverside communities. Source: table compiled by the authors based on the results obtained from analyzing the interview data in ATLAS.ti.

The expression “is part of” is used to indicate a greater degree of influence on the relationship between the dimensions, and the expression “is associated with” is used to indicate that the relationship between the constructs exists, but the influence between them is reduced. The attributions of each of these relationships considered the frequencies mentioned in the interviews, as indicated in the figure presented (“G”).

The dimensions **access to information** and **geographic barriers** were the most indicated by the interviewees as influential in **access to justice**, which may indicate that the adoption of measures aimed at reaching digital justice to those under jurisdiction, with due information regarding its use, may constitute increases in access to digital services. **Access to information** was used to indicate the availability to interviewees of the information necessary for access to justice and rights, while **geographic barriers** were used to indicate

the difficulties in the physical path existing to reach the current physical structures of the forums. **Experience with justice** is explained as the prior use of judicial services when conducting interviews and the communication and understanding of rights in terms of the possibility of people understanding the rights they have and being able to express themselves in order to achieve them.

In the aspect of **digital governance in the judiciary**, two dimensions stood out in terms of the importance indicated by the interviewees, namely, the **user-friendliness of technology** for achieving rights and the **resources and infrastructure supporting technology use**. As for the first, it indicates whether technology can constitute a skillful instrument for improving access to justice in Brazil, while the second indicates how many resources and structure already exist in the researched regions for people to use. We sought to diagnose with these two dimensions, therefore, to determine how much technology already exists in the researched regions and whether this technology can contribute to improving access to judicial services.

The five dimensions found in the interviews certainly do not constitute a complete and closed list regarding the use of new technologies to increase judicial services. They are indicators that can be used in new investigations about access to justice and digital justice.

Based on these five dimensions, we began to discuss the results and contents of the interviews.

Initially, the analysis revealed that the natural **geographical barriers** in the Amazon region significantly impact access to justice for riverside communities. Indeed, residents in these communities reported having to endure riverboat journeys lasting between eight to twelve hours to reach the only courthouse in the judicial district located in Porto de Moz, Pará. All the respondents conveyed the challenges of securing resources and arrangements for this travel, involving substantial time and financial commitments.

For instance, E1 highlighted the following:

"[...] [...] We live along the Jaurucu River, specifically in the Itapéua community. Although the straight-line distance is 97 miles, the river's numerous bends extend the journey to a full day, sometimes even longer. Unfortunately, we lack [...]. The boat trip typically spans 12 h, depending on the type of boat we use [...]."

E2 reported the following:

"[...] [...] It's a pretty big distance for us to cover [...]. Usually, we only make the trip to Porto de Moz if it's a really important case [...]. Besides the time it takes, there's also the cost since we have to stay overnight [...]."

E4 reported the following:

"[...] [...] It's about 86 miles to get to the city. Taking a boat means a whole day of travel. We rent a boat, and if it's just one passenger, the round trip can set you back around 800 reais. Trying to pull off a day trip isn't practical; we must stay overnight. We end up spending the night on the boat. Sometimes, I crash at a friend's place or grab a studio [...]."

In the same vein, E6 explained the following:

"[...] [...] Imagine clocking in a 12-h boat ride just to get to the city. If we needed to do that today, we'd be looking at a late-night arrival and then dedicating the whole next day to sorting things out. These are the hurdles we have to deal with [...]."

The presence of such a formidable **geographical barrier**, as conveyed by the interviewees, poses a significant hindrance to individuals seeking access to justice and their rights. This challenge is particularly pronounced due to time constraints and financial limitations, which impede their ability to reach the courts. The decision to have just one physical location for accessing the Porto de Moz judiciary and other judicial services, including the issuance of civil documents, exacerbates the difficulty citizens face in realizing their rights. They must invest a considerable amount of time in the journey, coordinate community

members to secure a boat for transportation to the urban center of the municipality, and secure financial resources for both transportation and the necessary overnight stay. The option of returning on the same day as the outbound journey is virtually non-existent.

However, examining the elements of accessibility, resources, and the structure integral to judicial governance, as outlined by Akutsu and Guimarães (2015), and considering the principles of digital governance in the judiciary, the interviewees strongly emphasized that information and communication technologies have the potential to facilitate access to justice and rights in the Amazon region. However, in some instances, a lack of familiarity with technology remains a feasible challenge.

In this regard, E10 expressed, “[...] I think it’s good that we can do this over the Internet, even more because of what I’m saying. Sometimes we can’t afford to go there. But if we don’t, things get complicated. It’s quite expensive. So, I think it would be very good [...]”.

E9, on the other hand, underscored the importance of the possibility of attending appointments scheduled by the court, stating:

[...] [...] When an opportunity like this comes along, we have to be able to go there. If we can’t afford it, we’re going to miss the date. And things get more complicated for us. So, I think this way of doing it online would be more [...]. Sometimes, they can set a date for a hearing, and you can’t get there. Yeah, you miss the date [...].

Despite some respondents indicating that **resources and infrastructure** for utilizing technology were lacking, such as outdated equipment or slow internet speed, and acknowledging a knowledge gap, the adaptation of digital governance and technology by the judiciary, tailored to regional nuances, can potentially enhance access to justice. This implies that digital governance functions more as a conduit to access institutions responsible for realizing rights rather than fostering social or digital exclusion.

E1 highlighted:

[...] “[...] People who live nearby, who can’t access the internet, always come to us [...]. So, when they need something, guidance, someone always helps them [...]. Also, because many of them have a low level of education. So, access for them is difficult. Then, we ask the people in Porto de Moz for guidance or someone else. A secretary, coordinator, or supervisor. These people are better informed [...]”.

In this respect, E3 stated: “[...] if justice came by mobile phone, do you think you’d be able to access justice services on your own? I think so. I don’t think it would be so easy, but it would be good to have another person help me out”.

Based on the observed context and participant perceptions, it was concluded that the internet and digital devices, such as computers and mobile phones, can effectively extend the reach of the justice system to the remote regions of the Brazilian Amazon, integrating its residents into the social fabric of rights realization. Although the riverside population possesses some level of access and knowledge of technological resources and is aware of certain rights, the context remains precarious. Hence, the presence of justice, supported by both human and technological resources, is crucial for empowering the riverside population with more information about their rights, thereby enabling them to exercise these rights.

For instance, central actions could be implemented to equip the community school with information and communication technology resources and infrastructure, complemented by the training of local community agents. This approach would allow the local population to access information and justice without the need for extensive physical travel. Actions such as public education on access to rights and the use of technology could better prepare the riverside population to achieve rights, especially due to the difficulties faced by geographic barriers.

Indeed, E8 emphasized, “[...] with this little computer there, we’d have the time to work during the day and at night to access, understand and search for this information [...]”.

While lacking a computer at home, E10 stated, “[...] my cell phone doesn’t have internet access because we don’t have internet here. But whenever I come to Porto de Moz, I access the internet [...]”.

Therefore, digital governance in the judiciary of the Brazilian Amazon region, aligned with the principles of new public governance, emerges as a viable alternative to enhance access to information and public services. It fosters ease and speed of interaction while reducing transaction costs between citizens and government authorities, including the judiciary. This approach forms an integral part of a judicial policy that authentically addresses local realities (Maia and Correia 2022a).

The implementation of digital justice could revolutionize access to justice and rights for the riverside population, eliminating the need for extensive travel to the singular physical structure of the judiciary in a given region. A digital governance model in the judiciary could redefine access by introducing a new organizational design that aligns with regional contexts.

Geographical barriers constitute an obstacle to access to justice. The research indicates that there is the possibility of alleviating this restriction with the implementation of technology that facilitates the achievement of rights, as well as the provision of information by people trained for this purpose.

Through exploring the local context and understanding the perspectives of riverside community residents, it is evident that digital governance and the application of new technologies by the judiciary, tailored to regional contexts, can effectively streamline access to justice services. This has the potential to alleviate geographical and social barriers, empowering individuals to realize their fundamental rights and ultimately contributing to the reduction of social and regional inequalities.

5. Conclusions

Digital governance within the judiciary has positively impacted the enhancement of judicial services, introducing fresh avenues for conflict resolution. However, investigating how digital governance can amplify access to justice for those facing geographical constraints becomes imperative in addressing social inequalities and elevating the quality of life in Brazil, given its vast territorial dimensions.

Understanding the context, lifestyles, and challenges confronted by individuals and groups experiencing geographical vulnerability is pivotal. This comprehension, rooted in the realities of life and the opportunities presented by digital governance, enables the creation of alternatives that influence the organizational framework of justice. The goal is to diminish prevailing geographical obstacles to justice access, actualize fundamental rights, and, consequently, mitigate social and regional disparities. Empirical research, such as that conducted herein, contributes to this diagnostic process, ensuring that new technologies are leveraged positively, avoiding any exacerbation of digital exclusion.

Through participant observation and interviews conducted in two riverside communities situated in the Amazon region of Pará and leveraging content analysis with the assistance of ATLAS.ti, this study established five dimensions for digital governance and access to justice in Amazonian communities. These dimensions encompass (1) one’s experience with justice, (2) access to information, (3) geographical barriers, (4) user-friendliness of technology for accessing justice services and rights, and (5) resources and infrastructure supporting technology use.

The qualitative research, particularly through participant observation, underscored the significant challenge posed by geographical barriers for riverside communities seeking access to justice and basic rights. The necessity to navigate rivers for eight to twelve hours to reach the judicial District of Porto de Moz, Pará, remains a prominent obstacle. Consequently, residents advocate for the implementation of technology by the courts

in these communities, anticipating that it would not only broaden access to justice but also necessitate the dissemination of information on rights by the judicial system and other stakeholders.

In scrutinizing the local context and analyzing the perspectives of riverside community residents, we infer that digital governance and the transformative impact of technology within the judiciary, attuned to regional nuances, can potentially ease access to justice. This approach has the potential to alleviate both geographical and social barriers that hinder the realization of fundamental rights. Therefore, it is suggested that new research be carried out in other regions and with other communities in order to support public policies.

Proposing a future research agenda, we recommend exploring the perceptions of justice system stakeholders concerning digital governance within the judiciary and access to justice. Additionally, extending this investigation to encompass the perspectives of individuals and groups facing geographical vulnerability in other regions and contexts across the country could facilitate a comprehensive comparative analysis.

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