HEC MONTRÉAL
(École affiliée à l'Université de Montréal)

# *Can AI chatbots improve access to legal information?*
# A case study on the inhibitors of AI chatbots' implementation in the context of JuridiQC

Athéna Vassilopoulos

Sous la direction de M. Ryad Titah

Sciences de la gestion
(Transformation numériques des organisations)

Mémoire présenté en vue de l'obtention du grade de maîtrise en sciences (MSc)

## Executive summary

Access to justice is a key principle of rule of law, without which people cannot exercise their rights. However, in 2019 the Global Justice Report was estimating that five billion people worldwide do not have access to justice (Center on International Cooperation, 2019). Even in a democratic country like Canada, various actors of the Canadian legal ecosystem, namely the Canadian Bar Association, have qualified access to justice as abysmal and have sounded the alarm regarding the current state of the justice system in Canada (Trevor & Farrow, 2020). Due to the pervasiveness of law in most aspects of people's lives, addressing the barriers to access to justice is crucial. Artificial intelligence has been suggested as a solution which could address barriers on the side of justice, as well as on the side of citizens. Indeed, the reviewed literature suggests that AI chatbots could improve access to justice. However, it seems to be unclear how such outcome can be achieved. To understand to what extent AI chatbots can improve access to justice, this research presents a case study on JuridiQC, a website providing legal information, developed by the Société québécoise d'information juridique (SOQUIJ), an agency of the Ministère de la Justice du Québec. As their role is to simplify access to legal information through the combination of their legal expertise and information technologies, one of their mandates was to explore how AI could improve access to legal information. In this context, they considered integrating an AI chatbot as a feature on JuridiQC which eventually was not implemented due to several obstacles. Thus, in contrast with the literature suggesting that AI chatbots could improve access to justice, this case study, through a practical approach, allows us to understand that in the context of JuridiQC, there are some obstacles which inhibit the implementation of AI chatbots. In this context, AI chatbots were not able to improve access to legal information. However, through our research, we found out that AI would be instead integrated in JuridiQC's search bar, opening discussions on how AI could alternatively contribute to access to legal information.

## Sommaire

L'accès à la justice est un principe clé de l'État de droit, sans lequel les individus ne peuvent exercer leurs droits. Cependant, en 2019, le Global Justice Report estimait que cinq milliards de personnes dans le monde n'avaient pas accès à la justice (Center on International Cooperation, 2019). Même dans un pays démocratique comme le Canada, divers acteurs de l'écosystème juridique canadien, notamment l'Association du Barreau canadien, ont qualifié l'accès à la justice de déplorable et ont tiré la sonnette d'alarme quant à l'état actuel du système de justice au Canada (Trevor & Farrow, 2020). En raison de l'omniprésence du droit dans la plupart des aspects de la vie des gens, il est crucial de s'attaquer aux obstacles à l'accès à la justice. L'intelligence artificielle a été suggérée comme une solution qui pourrait contribuer à surmonter les obstacles tant du côté de la justice que du côté des citoyens. En effet, la littérature examinée suggère que les chatbots intégrant l'IA pourraient améliorer l'accès à la justice. Cependant, il semble difficile de savoir comment de tels résultats peuvent être obtenus. Pour comprendre dans quelle mesure les chatbots IA peuvent améliorer l'accès à la justice, cette recherche présente une étude de cas sur JuridiQC, un site web d'information juridique, développé par la Société québécoise d'information juridique (SOQUIJ), une agence du ministère de la Justice du Québec. Leur rôle est de simplifier l'accès à l'information juridique grâce à la combinaison de leur expertise juridique et des technologies de l'information. L'un de leurs mandats avait pour but d'explorer comment l'IA pourrait améliorer l'accès à l'information juridique. Dans ce contexte, ils ont envisagé entre autres d'intégrer un chatbot IA comme fonctionnalité sur JuridiQC, qui n'a finalement pas été implantée en raison de certains obstacles rencontrés. Ainsi, contrairement à ce que la littérature examinée suggère, cette étude de cas, à travers une approche pratique, permet de comprendre que dans le contexte de JuridiQC, il existe certains obstacles qui inhibent l'implantation des chatbots IA. Dans ce contexte, les chatbots IA n'ont pas été en mesure d'améliorer l'accès à l'information juridique. Cependant, grâce à nos recherches, nous avons appris que l'IA serait plutôt intégrée dans la barre de recherche de JuridiQC, ouvrant ainsi des discussions sur la façon dont l'IA intégrée dans une autre fonctionnalité, pourrait contribuer à l'accès à l'information juridique.

**Keywords:**

Access to justice, access to legal information, artificial intelligence, AI chatbots, user-experience, search engine optimization, google.

# Table of contents

## List of figures and tables

### Figures



### Tables



## List of abbreviations

**ADR:** Alternative Dispute Resolution

**AI:** Artificial intelligence

**AIML:** Artificial Intelligence Markup Language

**FAQ:** Frequently Asked Questions

**IS:** Information System

**IR:** information-retrieval

**PIAAC:** Programme for the International Assessment of Adult Competencies

**PRISMA:** Preferred Reporting Items for Systematic Reviews and MetaAnalyses

**SDG:** Sustainable Development Goals

**SOQUIJ:** Société Québécoise d'Information Juridique

**UN:** United Nations

**UNDP:** United Nations Development Program

**UX:** User Experience

## Acknowledgments

This thesis marks the end of my master studies at HEC Montreal in a very peculiar context. I started my master's in management of digital transformation of organisations at the beginning of the COVID-19 pandemic, studying remotely. Having to adjust to time differences, developing virtual friendships, seizing opportunities to work as a teaching assistant and then as a research assistant, these two years were enriching yet filled with challenges.

I shared these challenges with my supervisor Prof. Ryad Titah who I would like to thank for giving me the opportunity to dive into this research project. Thank you for your trust and for remaining patient, available and supportive in this project which was far from straightforward.

I would also like to thank SOQUIJ's team that worked on JuridiQC for taking the time to share with me the behind the scenes of their work. A united team, committed to providing value to their users, with whom I learnt a lot, who inspired me and who gave me hope for the future of the public sector.

I would like to thank my European support system, my family, my partner and my friends for their patience, unconditional support and love which really helped me to push through when I did not believe I could. I would also like to thank my Canadian virtual friends that I met during my studies, namely Chaima who inspired and supported me since day one, and Felix, my friend, colleague, and thesis buddy who made this process a bit less lonely.

## Chapter 1: Introduction

Access to justice is a key principle of rule of law, without which people cannot exercise their rights. However, in 2019 the Global Justice Report was estimating that five billion people worldwide did not have access to justice (Center on International Cooperation, 2019). Even in a democratic country like Canada, various actors of the Canadian legal ecosystem, namely the Canadian Bar Association, have qualified access to justice as abysmal and have sounded the alarm regarding the current state of the justice system in Canada (Trevor & Farrow, 2020). Adopting a people centred approach, a study suggested that 48% of Canadians (over 18), within a three-year period will encounter at least "one everyday legal problem that they consider to be serious and difficult to resolve" (Farrow, Currie, Aylwin et al, 2016, p. 6). The same study also reported that 30% of the people who took part in their research, faced more than one legal issue which means that Canadians in a three-year period will experience approximately "35,745,000 separate everyday legal problems" (Farrow, Currie, Aylwin et al, 2016, p. 7).

Whether in Canada or in other parts of the world, it can be argued that the actual number of people who do not have access to justice is even higher. Indeed, as access to justice can be conceptualised in various ways, one predominant approach has been the study of access to justice as access to courts and access to legal representation (Rhode,2004; Phelps, 2010). While countries can monitor the performance of their courts and people who have resorted to legal representation, it only represents a fraction of the issue. Indeed, research suggests that people who experience legal issues do not necessarily pass-through formal institutions and often people do not even qualify their problem as legal (Sandefur, 2019). Thus, the existing narrow conceptualisations affect greatly how we have operationalised access to justice leading to a lack of empirical "people-centred" data on access to justice (Center on International Cooperation, 2019). In addition, the COVID-19 pandemic further exacerbated the issue, increasing courts' delays, complicating access to documentation and even leading to courts being temporarily shut down (Dorneanu, Coeckelberghs & Malka, 2021).

Due to the pervasiveness of law in most aspects of people's lives, addressing the barriers to access to justice is crucial. Indeed, while access to justice was acknowledged by the United Nations (UN) as the 16th Sustainable Development Goals (SDG) to be achieved by 2030, access to justice is intrinsically related to the implementation of other sustainable development goals such as eradicating poverty (sdg 1), hunger (sdg 2) and gender equality (sdg 5). In that respect, access to justice is an enabling right which supports the enforcement of other rights (European Union Agency for Fundamental Rights and Council of Europe, 2016). However, the barriers to access to justice are multiple and complex, occurring at an individual level (i.e., poverty, lack of education and literacy, discrimination) as well as at an institutional level (i.e., lack of financial and human resources, limited physical accessibility) (Beqiraj & McNamara, 2014).

While different solutions have been suggested to tackle some of these aforementioned barriers, in recent years, research has suggested the use of artificial intelligence (AI). At an institutional level, the use of AI by legal practitioners could improve access to justice namely by reducing administrative barriers. As the latter restricts judicial capacities (Chronowski, Kálmán, Szentgáli-Tóth, 2021), it could improve the functioning of the court system as court congestion is an important obstacle to access to justice (Luoma, 2018). AI usage by legal practitioners could allow the optimisation of legal research (Baker, 2018. Norton 2020), offer litigation predictions (Kauffman & Soares 2020) and facilitate contract and form reviewing (Alarie & Niblett, 2018). Despite these improvements, the usage of AI by legal practitioners has raised concerns over bias reinforcement, lack of transparency and overall ethics (Fink, 2021; Raymond & Shackelford, 2013).

While legal practitioners can benefit from AI to alleviate their workload and improve the efficiency of their procedures, there is a shift "towards offering more litigant focused interfaces" (Norton, 2020, p. 231). This shift has also been reflected in existing research that suggests that AI chatbots for citizens could improve access to justice by facilitating access to legal information (Queudot, Charton, Meurs, 2020; Westermann et al, 2019; Bartenberger, Galla, Kosak, 2018. Cruz, 2018). This hypothesis builds upon the initial implementation of AI chatbots in other fields such as customer service and e-commerce

where chatbots were first used to assist customers by answering their questions (Gatzioufa & Saprikis, 2022). In comparison to assistance tools such as frequently asked questions (FAQs), chatbots are perceived as more dynamic and more attractive to users (Adamopoulou & Moussiades, 2020). Improvements in natural language processing and machine learning paired with the digital transformation of our economy have contributed to the growth of chatbots in other fields, namely as a tool for education (Pérez, Daradoumis & Puig, 2020), for transport (Zumstein & Hundertmark, 2017) for communication between government and citizens (Androutsopoulou, Karacapilidis, Loukis et al., 2019).

In the context of access to justice, while research has suggested that AI chatbots could improve access to legal information, the existing literature does not elaborate on the process by which such outcome can be achieved. This research argues that the existing literature is tainted by technological determinism which equates technological developments i.e., AI chatbots, as the driver of social advancements and hence improved access to justice (Wyatt, 2008). In this context, the role of the user and the concept of use are omitted as drivers of the outcome (Wyatt, 2008). In addition, this research argues that existing literature supporting the hypothesis that AI chatbots could improve access to justice by facilitating access to legal information offers a reductionist approach of access to justice in which the users are perceived as rational actors who process information rationally to maximise their preferences (Posner, 1997). As highlighted in the literature the term access to justice is ambiguous and raises more questions than it answers, access to what? (Sandefur, 2019), for whom and from whom? (Rhode, 2004). Thus, the hypothesis put forward by existing literature on the use of AI chatbots in the context of access to justice fails to define access to justice and access to legal information.

In order to understand how AI chatbots can help users achieve their goal i.e. access to legal information, it is crucial to understand how the user makes use of AI chatbots, the particularity of the context and the obstacles which could arise in their implementation and how in turn they could affect the user's intention to use as technology per se cannot lead to a specific goal (Burton-Jones & Grange, 2010).

Thus, this study aims to answer the following research question: *Can AI chatbots improve access to legal information?* To answer this question, due to a lack of data on the use of AI chatbots to access legal information, this research opted for a case study on JuridiQC, a website developed by the Société québécoise d'information juridique (SOQUIJ) and financed by the Minister of Justice of Quebec. JuridiQC is particularly relevant as a case study in this context for two reasons. Firstly, its mission is to provide reliable and appropriate legal information to help citizens to quickly find solutions and initiate legal procedures. Secondly, a proof of concept for an AI chatbot to improve access to legal information on JuridQC had been developed but was finally not implemented. These two factors are aligned with the scope of this research and will help us answer our research question. In the context of JuridiQC, through qualitative interviews, we can observe that there are challenges which hindered the implementation of an AI chatbot and that due to these, the AI chatbot was not able to improve access to legal information. However, emerging results from this research suggest that AI integrated in JuridiQC's search bar, if used, could improve access to legal information. This research thus aims to contribute to the literature on AI chatbots in the context of access to justice by challenging the hypothesis that AI chatbots can improve access to legal information to shed light on some challenges which have been omitted and that should be taken into consideration when deciding to implement an AI chatbot.

## 1.1 Structure of the research

This study is organised into seven chapters. The first chapter presents an introduction of the topic, followed by the second chapter which introduces the literature review which identified articles focusing on artificial intelligence in the context of access to justice. This literature review aims to clarify key terms of this research such as artificial intelligence and access to justice and how chatbots and access to legal information fit in this context. Furthermore, this will allow us to develop a model on the use of AI chatbots in the context of access to legal information. The third chapter will introduce the case study and the methodology. In this context, the methodology were qualitative interviews carried out in the context of JuridiQC, a website developed by the Société québécoise d'information

juridique (SOQUIJ). The fourth chapter presents the results of data collection and their analysis which are organised in two parts: AI technology and AI application. The fifth chapter presents the emerging results which emanated from the interviews: the integration of AI in the search bar. The sixth chapter presents a discussion of the results before presenting in the seventh chapter the conclusion which also includes limitations and directions for future research.

## Chapter 2: Literature Review

The literature review aims to clarify the key concepts of this research. This section is organised in four parts. Firstly, it presents the methodology used for the literature review on AI chatbots in the context of access to justice. Secondly, it provides a brief history of AI to contextualise AI chatbots and define AI chatbots. Thirdly, it provides a brief history of access to justice to define access to justice. As the two key terms of this research have been clarified, in the fourth part we dive in the literature review of the use of AI chatbots in the context of access to legal information.

### 2.1 Methodology used for the literature review

The literature review was performed using different databases such as IEEE Xplore, SSRN, ACM Digital Library, ScienceDirect and JSTOR. As there was little research on the use of AI chatbots in the context of access to justice, Google Scholar was also used. Considering the focus of the research, the keywords used were *AI, AI chatbots, artificial conversation entities, smartbots, interactive agents, digital assistants, virtual assistant, conversational AI paired with access to justice, access to legal information, access to information*.

This literature review used the PRISMA methodology (Preferred Reporting Items for Systematic Reviews and MetaAnalyses) (see appendix 1). In the first stage, identification, using the aforementioned databases and keywords, 174 articles were identified which were published between 2017 and 2022. In the second stage, screening, only articles which included the aforementioned keywords in their abstract and title were included. In the third stage, eligibility, it was ensured that only AI chatbots for citizens were included

as this research focuses on the use of AI chatbots for citizens thus rejecting AI chatbots for legal practitioners. Furthermore, articles on paying AI chatbots were also excluded as it could add an additional barrier to the use of the solution, hence hindering access to justice. Finally, chatbots which did not include AI were also excluded due to the focus of the research. In the third stage, eligibility, it was ensured that only articles which were entirely accessible were included. In the final stage, eight articles were identified which were published between 2018 and 2021; three were written in 2018 and in 2019, one in 2020 and 2021.

### 2.2 A brief history of artificial intelligence

From an academic standpoint, the beginning of AI started in 1950 with Alan's Turing publication "Computing Machinery and Intelligence" where he raised the question of whether machines could think, initiating the discussion on what we would call today artificial intelligence. In 1956 the term "artificial intelligence" was academically coined by the American computer scientist McArthy marking the beginning of AI developments (Andresen, 2002). While the initial applications aimed to recreate intelligence by focusing on reasoning as search, i.e., capacity to play checkers, capacity to demonstrate a mathematical theorem, new applications started focusing on natural language processing (Andresen, 2002). In 1966, Joseph Weizenbaum created Eliza, which today we would call a chatbot. It was able to mimic a psychotherapist by returning their interlocutors' statements as a question (Adamopoulou & Moussiades, 2020). While Eliza played a leading role in the development of chatbots, Eliza's capacity to exchange was limited in terms of topics of discussion, length of conversation and couldn't learn from the discussion (Adamopoulou & Moussiades, 2020).

This was due to the approach used to develop Eliza. Indeed, Eliza was based on an algorithmic/symbolic approach, often referred to as rule-based, pattern-matching to recreate intelligence (Adami, 2021). In that respect, the engine is taught rules and answers accordingly. However, at the same time the connectionist/neural approach also developed. In this approach, the processing capacity of the engine was neural networks instead of rules (Adami, 2021). These two schools of thought of AI were working but also

competing to create what they considered as artificial intelligence (Adami, 2021). In 1969, researchers supporting an algorithmic/symbolic approach argued that “neural networks were unreliable and limited in their use” contributing to the consolidation of the algorithmic/symbolic approach (Lee, 2018, p. 8).

Using an algorithmic/symbolic approach, another important development of AI was the creation of the expert systems. The latter is defined as “a computer system that emulates the decision-making ability of a human expert, which aims to solve complex problems by reasoning knowledge” (Tan 2017, p. 1). DENDRAL was the first expert system developed in 1965 and was the “first successful program that uses the knowledge of the problem itself rather than the complex search technology” (Tan, 2017, p. 1).

This period of development was followed by the AI winter, a period characterised by a drop in investments until the 1980 with the commercialisation of expert systems in different fields (Tan, 2017). In 1988, Jabberwacky was the first chatbot built using artificial intelligence. However, it was only in 1991 that the term chatterbot was first mentioned with “TINYMUD (multiplayer real-time virtual world) artificial player, whose primary function was to chat” (Adamopoulou & Moussiades, 2020, p. 2). Following this, another AI winter followed.

The mid- 1990s saw again a peak in development with the creation of Alice, Artificial Linguistic Internet Computer Entity. In comparison to Eliza, Alice had strong discussion capabilities (Adamopoulou & Moussiades 2020). In fact, Alice introduced a new language, the Artificial Intelligence Markup Language (AIML), which differentiates it from its predecessor Eliza. To illustrate a key difference, “ALICE’s Knowledge Base consisted of about 41,000 templates and related patterns, a vast number compared to ELIZA that had only 200 keywords and rules” (Adamopoulou & Moussiades 2020, p. 2). The main limitation of Alice was its incapacity to produce “human-like answers expressing emotions or attitudes” (Adamopoulou & Moussiades 2020, p. 2) Alice has won the Loebner Prize three times (2000,2001,2004) a prize which rewards the most human-like interfaces since

1991 (Brandtzaeg & Følstad, 2017). The 1990s was also marked by IBM Deep Blue's victory against the world chess champion Garry Kasparov in 1997.

From the early 2000s with the development of the internet, AI chatbots became accessible to a wider public as they could be accessed on messengers namely through MSN, Microsoft (Khan & Das, 2018). People who had access to these technologies could familiarise themselves with chatbots as a search tool. This development brought the definition of chatbots closer to what we know today. As mentioned in literature, “this ability marked a significant development in both the machine intelligence and human–computer interaction trajectories as information systems could be accessed through discussion with a chatbot” (Adamopoulou & Moussiades, 2020, p. 3).

The year 2011 marked the beginning of the commercialisation of chatbots as a tool for businesses (Khan & Das, 2018). Pioneered by IBM who built Watson, Watson Health was specifically designed for the healthcare sector, to assist doctors in diagnosing diseases (Yang, Chesbrough, Hurmelinna-Laukkanen, 2022). Simultaneously, the development and adoption of smartphones contributed to pushing the developments of chatbots (Khan & Das, 2018). Firstly, it modified the communication channel by which one could interact with a chatbot. While text was the main form of interaction, this development introduced smart personal voice assistants which could interact through voice commands i.e., Siri by Apple. This development contributed to broadening the definition of chatbots to also include voice assistants but also highlighted a change in the use of chatbots. Secondly, the adoption of smartphones increased the use of mobile messaging platforms which became a key access point for chatbots (Brandtzaeg & Følstad, 2017).

The adoption of digital devices such as smartphones also contributed to improving the development of neural networks for two reasons. Firstly, smartphones and internet development allowed for the generation of important amounts of digital data which are crucial for the training of AI models. While secondly, the increase in computing power allowed for a better training of models (Lee, 2018).

The year 2016 marked further the commercialization and popularisation of chatbots. Indeed, social media platforms, namely Facebook, enabled “developers to create chatbots for their brand or service to enable customers to perform specific daily actions within their messaging applications” (Adamopoulou & Moussiades, 2020, p. 3). By the end of 2016, 34.000 chatbots had been launched and encompassed different uses and different fields from marketing to education, passing by health care and entertainment (Adamopoulou & Moussiades, 2020).

Overall, this brief account of AI helps us understand AI as an umbrella term that encompasses different technologies using different methods which aim to mimic aspects of human intelligence (Biard, Hoevenaars, Kramer et al, 2021). In that context, AI chatbots are one type of technology which has evolved in history because of technological developments namely in natural language processing.

Advances in AI have contributed to the development of chatbots’ definition as a computer program powered by AI that has the capacity to process natural-language input from a user and generate related responses back to the user, mimicking a conversation (Khan & Das, 2018). While the interaction between the user and the chatbot occurs primarily through text-based interface, the development and adoption of mobiles as well as developments in voice technology has introduced a new channel of interaction using voice commands e.g., Apple’s chatbot Siri (Adamopoulou & Moussiades, 2020). Thus, the category of chatbots has come to include smart personal voice assistants. Other terms are also used to refer to chatbots in literature such as “smart bots, interactive agents, digital assistants, or artificial conversation entities” (Adamopoulou & Moussiades, 2020, p. 1). These developments have also contributed to expanding the categories of chatbots beyond question answering systems as they can now be used to also search and fill out documents, translate, route requests and even draft documents (Mehr, Ash & Fellow, 2017). In conclusion, AI has contributed to reframing chatbots as a versatile tool which can be used in different contexts. This study through a case study focuses specifically on an AI chatbot limited to a text-based interface used for routing users’ requests.

## 2.3 Brief overview of access to justice

In reviewing the literature on access to justice, we can observe that access to justice can be defined in different ways. To provide an overview on the different understandings and definitions of access to justice, the literature has been structured around the three waves of access to justice proposed by Cappelletti & Garth (1978).

According to Cappelletti & Garth (1978), the evolution of access to justice in Western countries can be observed in three waves. The first wave of access to justice was focused on providing legal aid to financially disadvantaged individuals to ensure access to legal representation and thus access to the courts. The second wave was focused on the representation of diffuse interests, in that respect, representing groups other than the financially disadvantaged such as consumers. The third wave aims to go beyond legal representation, to understand access to justice in broader terms and push for the improvement of access to justice. In the existing literature analysed, authors have suggested that technological developments could constitute the fourth wave of development of access to justice (Toohey, Moore, Toohey, 2019). In that respect, a fourth wave was added to regroup authors' contributions on access to justice related to technological developments. These waves have not been clearly defined, in the context of this research the reviewed literature has been placed in different waves to give an overview of how access to justice has been studied and defined and how it relates to the use of chatbots.

### The first wave: legal aid, legal representation, and access to courts

In the literature reviewed, access to justice is often understood as resolving a legal problem through adjudication. In this context, the barriers to access to justice which have been observed worldwide are court congestion and associated delays and legal representation issues (Luoma, 2018). For these authors, the concept of unmet legal needs, broadly understood as a lack of access to legal services, is central. Indeed, Rhode (2004) & Phelps (2010) are pointing out the failure of legal assistance in the USA and

consequently, the increasing number of people who are suffering due to their unmet legal needs. As a result of the failure of legal assistance, another common theme is the growing phenomenon of self-representation and the role that nonlawyers could play in the provision of legal services to meet unmet legal needs (Zimerman & Tyler, 2009; Phelps,2010; Hurder, 1999). Hadfield (2013) is also pointing out regulations around representation and how they prohibit corporations from taking part in legal services. Authors have suggested improving lawyers' education regarding access to justice to further raise awareness (Rhode, 2013; Aflieri, 2013; Selita, 2019). While the literature reviewed is mainly US-centred, literature from Canada also highlights how cuts in legal aid negatively impact access to legal services for families (Birnbaum & Bala, 2021). Legal aid is considered as a cornerstone for the right to access justice (Favalli, 2021). Other authors researching access to justice primarily adopt a procedural understanding of access to justice as access to courts, right to a fair trial and the role of legal aid (Rass-Masson & Rouas,2017)

The authors who tend to focus on themes related to the first wave, do not provide a definition of access to justice, yet it is implied that access to justice is obtained through legal representation and by having access to the courts. While this can be one way of defining access to justice, as mentioned by Pruitt & Showman (2014) this thin definition of access to justice limits the understanding of access to justice by framing it in legal terms. In this context, the individual facing an issue is expected to recognize its issue as a legal issue and consequently search for a legal solution when in fact individuals, especially disadvantaged individuals, tend to opt for non-legal frameworks (Pruitt & Showman,2014). In that respect, Pruitt & Showman (2014) call for a thicker definition of access to justice, which is community oriented, and which could help understand what is needed from the community to address the issue.

Sandefur (2019) also shares the perspective that individuals do not think of their issues in legal terms and thus, do not go to a lawyer nor to court. This challenges the argument commonly put forward that people do not go to lawyers mainly because of high costs. According to Sandefur (2019), the concept of "unmet legal needs", which is often put

forward by authors talking on issues related to representation, comes from a narrow definition of access to justice put forward by lawyers, where their services are the main solutions to access to justice. Sandefur (2019) thus challenges the need for legal services, which is present in the extant literature and questions what is really needed to assist people. As highlighted by Sander (2019), even when the issue turns into a legal case, research demonstrates that lay people can effectively handle legal tasks, usually taken care of by a lawyer which further supports the idea to broaden access to justice beyond the provision of legal services.

**The second wave: diffuse interest**

As we saw in the first wave, research related to representation and legal aid is mainly focused on the disadvantaged. In the second wave, the focus is shifting to diffuse interests such as consumers. In the literature analysed, this topic was only mentioned by two authors. Class action, which is defined as “litigation commenced by one or two plaintiffs on behalf of a very large group of similarly situated individuals” is considered to overcome barriers to justice (Kalajdzic, 2018, p. 3). The latter can be achieved as one individual can initiate an action on the behalf of a larger group facing barriers to access to justice, ranging from costs to understanding of the issue (Kaladjdzic, 2018). Considering the role that class actions can have on access to justice, Kalajdzic (2018) aims to explain how class actions contribute to access to justice and how justice is defined and measured in this context.

**The third wave: Beyond legal representation**

This third wave encompasses the main developments of access to justice, beyond questions related to legal representation. As we are moving away from legal representation, we can observe the rise of alternative dispute resolution (ADR) as a tool to obtain access to justice. This solution aims to resolve disputes without going to court, with the help of a third party, mediation and arbitration are two common examples of ADR. The role of ADR in improving access to justice has been recognized in the extant literature

(Ojelabi & Noone, 2020; Noone & Lola, 2020), namely in the context of family disputes (Ojelabi & Gutman, 2020). ADR was introduced to unburden traditional courts which are saturated (Genn, 2012).

The role of information in improving access to justice is also discussed, namely the role of online self-help resources (Szczepanska & Blomkamp, 2020) and the role of information and education (Barendrecht, 2011).

While the initial focus was low-income individuals, various researchers included middle-income individuals (Rhode,2004; Phelps, 2010) and authors started calling to re-evaluate the focus of research by not only focusing on the poor (Albiston & Sandefur, 2013). Expanding the focus of access to justice would help understand differences between individuals and shed light on institutional and structural factors hindering access to justice instead of “attributing inequality to group-based differences in behaviour, resources, or culture” (Albiston & Sandefur, 2013, p. 110). Overall in the existing literature reviewed the focus has been primarily on financially disadvantaged individuals, followed by women (Jassal, 2020; Marchiori, 2015; UN Women, 2016, International Commission of Jurists, 2016), elder people, more specifically with mental health issues (Mitchell, Byrnes, Bergman et al, 2021), prisoners (Korankye-Sakyi, Atupare, Tukwariba Yin, 2021), individuals living in a rural context (Pruitt & Showman, 2014; Statz, Friday, Bredeson, 2021; Pruitt, Kool, Sudeall et al, 2018) and indigenous people (Brinks, 2019).
It also appears that legal representation and courts are part of a Western perspective on access to justice in which formal institutions play a key role. However, authors raise the importance of accessing justice through indigenous legal systems in Latin America (Brinks, 2019) and customary institutions in Mali (Winter & Conroy-Krutz, 2021).

To improve our understanding of access to justice, some authors are also calling for the development of empirical research (Albiston & Sandefur, 2013; Noone & Lola, 2020). This would allow us to not only evaluate the efficiency of current policies but also “how current definitions and understandings of access to justice may blind policy makers to more radical, but potentially more effective, solutions" (Albiston & Sandefur, 2013, p. 103).

The lack of empirical research is also an obstacle for the development of evidence-based approaches in the field of access to justice (Abel, 2009). The main barrier for the development of empirical research comes from the lack of clearly defined definitions and concepts regarding access to justice (Bedner & Vel, 2010). In the existing literature reviewed, only two sources provided a definition of access to justice followed by a framework. Other reports based on their definitions have developed indicators to measure access to justice, providing 15 dimensions of access to justice (UN Women, 2016). Another report, OECD (2019), brings forward two key dimensions of access to justice which can be used to assess the level of accessibility of judicial systems: affordability of legal procedures for all citizens and access to legal information which is easily understandable. Despite these efforts, there is an important lack of empirical research starting from definitions, concepts, and frameworks.

**The fourth wave: Access to justice & technological developments**

Following the third wave, technological developments are considered by certain authors as carrying the fourth wave of evolution of access to justice (Toohey, Moore, Dart, Toohey, 2019).

Technology could be used in formal institutions to engage in digital transformation, introducing digital hearings (Laird, 2021) and promoting the development of e-courts to simplify lawsuits (Putrijanti & Wibawa, 2021). It could also be used as part of court strategies to ensure that participants have meaningful access to justice by making use of technology to access information (Rogers, 2015). Online dispute resolution platforms are said to improve access to justice by improving access to information and simplifying court procedure (Kramer, Biard, Hoevenaars, et al., 2021).

Outside of formal institutions, technologies could improve access to justice by facilitating self-help, making information more accessible and generating legal documents (Toohey, Moore, Dart, et al., 2019). Specific technologies such as chatbots could provide legal information about the outcome of the case which helps parties involved in tenant-landlord

disputes to negotiate without going to court, thus improving access to justice (Westermann, Walker, Ashley et al., 2019). Chatbots could be used more broadly as a tool to help people access information regarding their rights (Bartenberger, Galla, Kosak, 2018; Queudot, Charton, Meurs, 2020).

However, while technology is often described as a tool to improve access to justice in the extant literature reviewed, some authors also highlight that technology could worsen access to justice if it is developed without considering the user as it could create new barriers (Cruz, 2019; Ryan, 2021). In addition, while most individuals can have access to the internet, internet usage is correlated with one's income, the higher the income, the higher the internet usage (Kunkel, 2018). Considering the digital divide, this remains a main concern and challenge for the development of technology which aims to improve access to justice (Ryan, 2021; Beinlich, 2021). Other authors are also a bit more sceptical of the use of technology for access to justice as it seems to omit the political and historical dimensions of the issue (Kunkel, 2018). In addition, Kunkel (2018) highlights the eventual consequences of replacing legal assistance by technological interventions.

Overall, authors researching technology in the context of access to justice, have neither provided a definition of access to justice nor a model explaining the process by which it impacts access to justice. In this context, technologies are considered to facilitate access to information, which is in turn assumed to facilitate the decision-making process for access to justice.

**Definition of access to justice**

This brief account of access to justice literature demonstrates that "there is no single definition of access to justice" (Marchiori 2015, p. 5). In the literature reviewed on access to justice, only 10/57 sources provided a definition of the term access to justice (see appendix 2). 6/10 definitions come from reports and only 1/6 derived a framework with the key elements of access to justice (UNDP, 2004). Another source following its definition briefly provides the stages of access to justice (OGP, 2019). In the academic literature,

only one source provided a definition with a framework (Bedner & Vel, 2010). This lack of definitions and concepts is a major obstacle in deriving empirical research on the efficiency of access to justice interventions.

Regarding the ten definitions provided in appendix 2, it can be observed that they are human rights based. In that respect, under international and human rights law, “the notion of access to justice obliges states to guarantee everyone’s right to go to court – or, in some circumstances, an alternative dispute resolution body – to obtain a remedy if it is found that the individual’s rights have been violated. It is thus also an enabling right that helps individuals enforce other rights” (European Union Agency for Fundamental Rights and Council of Europe 2016, p. 16). In that respect, from a Western democratic perspective, access to justice is a right guaranteed by a legal framework which enables individuals to take certain actions in the light of a grievance to obtain a remedy.

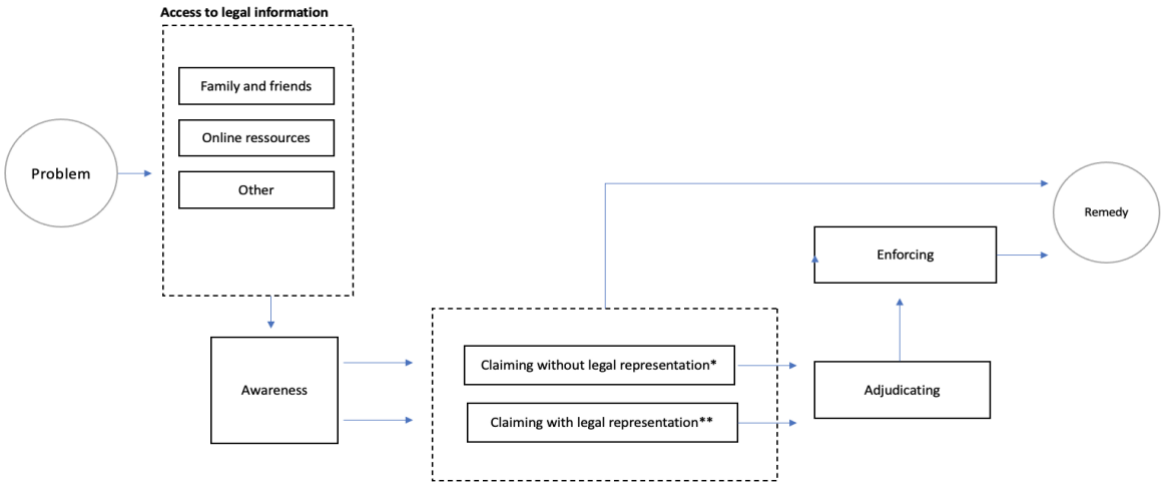
Yet as mentioned by Farrow & Trevor (2014), these definitions have been conceptualised from a top-down approach rather than a bottom-up approach. This can be limiting in understanding how an individual experiences issues related to access to justice and their evolution. Thus, authors are calling for a concept of justice which “includes the process of identifying an individual’s or community’s legal needs—even when the would-be client does not envisage a legal solution” (Pruitt & Showman, 2014, p. 479). In that respect, Trevor & Farrow (2020) introduces the concept of “meaningful access to justice” in which access to justice is defined as a path. *“Meaningful access to justice measures access for a person not necessarily in terms of access to lawyers and adjudicated decisions but rather by how helpful the path is for addressing and resolving that person’s legal problem or complaint” (*Trevor & Farrow 2020, *p. 3*). The OGP Report (2019) mentions the four stages of the justice path on which access to justice is dependent, which further strengthens the relevance of approaching access to justice from a bottom-up approach as a process.

In the context of this research, building on the definition provided by Bedner & Vel (2010), access to justice is defined as **a process** involving an individual or a group who faces an issue, who has the capacity to take actions through access to information to make their injustice heard and obtain a satisfactory remedy, either by formal or non-state institutions. A processual approach is suggested as more representative of real-life situations of justice seekers which can also help researchers to understand the different stages involved in seeking justice, where specific access to justice interventions fit along the process and where obstacles might arise.

More specifically, in this research, the focus is on the first step access to legal information. The latter is crucial in the process of access to justice as people often do not think of their problem as a legal problem (Sandefur, 2019). Thus, through access to legal information, individuals become aware of the legal dimension of their issues namely the rights they are entitled to, the procedures and how to overall initiate the process of access to justice. Despite the importance of access to legal information, in the existing literature reviewed, while the term “access to legal information” is often used, it has not been clearly defined nor conceptualised.

Based on the definition provided and building on UNDP (2004) and the ROLAX framework provided by Bedner & Vel (2010), the following framework has been developed:

***Figure 1: Access to justice framework***



In this framework, the starting point is an individual experiencing an issue, as we do not assume that the person knows from the beginning the legal implications of their issue. In addition, it is also important to mention that the probability of experiencing an issue increase with certain factors such as income, one of the reasons why the literature has focused on financially disadvantaged individuals.

**Problem:** An individual is facing an issue.

**Access to legal information:** Legal information is defined as information provided which refers to legislative and regulatory provisions which can be relevant to a specific topic (Barreau du Québec, 2013). According to Szczepanska & Blomkamp (2020), a Google search is the first step taken by an individual facing an issue, followed by exchanges with close family or friends. It is represented in dotted lines as the first step of the access to justice process, but it does not end there.

**Awareness:** Through access to legal information, a person can frame the issue they were initially facing as a legal issue which entitles them by law to seek a remedy.

**Claiming:** Once a person is aware of the issue they are facing and that their rights are infringed, they enter the claiming stage. Depending on the situation, the person can resort to legal representation i.e., a lawyer which gives the litigant access to legal advice. In this context, legal information is also provided by the lawyer. In instances where claiming happens without legal representation, the person needs to identify the next steps that have to be taken in order to obtain a remedy. In this context access to legal information is still important. For instance, the person can claim directly to the infringer or to a judge. The claiming phase can lead to the resolution of the issue.

**Adjudicating**: Following the claiming phase, the process can get more complicated and enter the adjudication phase. While this can refer to going in front of a judge, the

adjudication phase can also occur through an ADR mechanism such as mediation or arbitration.

**Enforcing**: enforcing the decision adopted in the adjudication phase.

### 2.4 The use of AI chatbots in the context of access to legal information

As mentioned above, AI is a term which is difficult to define as it is an umbrella term that encompasses different technologies using different methods which aim to mimic aspects of human intelligence (Biard, Hoevenaars, Kramer et al. 2021). AI Chatbots are one application of AI which use natural language processing and machine learning to interpret a user input and generate related responses back to the user, mimicking a conversation (Khan & Das, 2018).

The proliferation of chatbots beyond the field of customer service can be in part attributed to the various use cases of chatbots. Mehr, Ash & Fellow (2017) have classified chatbot usage for citizen services in five categories depending on their function: a) answering questions, b) searching and filling out documents, c) routing requests, d) translating and e) drafting documents. Other classifications of chatbots have been developed for instance depending on their goals: a) informative, b) chat based/conversational, c) task-based, but also depending on the service provided and communication channel used (Adamopoulou & Moussiades, 2020). Despite the plurality of functions which chatbots can have, research on chatbots seems to focus on informative chatbots (Adamopoulou & Moussiades, 2020) which have functions to answer users' questions (Almahri & Merh, 2017).

Since 2018, the literature on chatbots shows a growing interest for the use of chatbots in the context of access to justice. However, an overall observation can be made on the lack of definitions. Regarding access to justice, in the articles reviewed, there was no definition of access to justice except from Toohey, Moore, Dart et al (2019) yet the latter remained vague. Queudot, Charton & Meurs (2020) were the only ones referring to access to justice as access to legal information, however, without defining the latter. Regarding chatbots, it can also be observed that authors tend to not provide a definition of chatbots and often

introduce them through their functionalities as for instance an “entrance point that provides basic information and guidance” (Bartenberger, Galla, & Kosak, 2018, p. 22), a tool which “can walk a user through a series of steps to answer simple legal queries or be directed to curated information” (Bell, 2019, p. 117), or even “ask a number of questions to determine the tenant’s factual situation, and then provide the chatbot user with statistical information about their likelihood of success and averages of awarded damages, as well as displaying previous similar cases” (Westermann, Walker, Ashley & Benyekhlef, 2019, p. 1). Other authors have introduced chatbots through the example of DoNotPay (Djeffal 2018; Toohey, Moore, Dart et al., 2019). Only Cruz (2018) provided a definition of the term chatbot. Considering that “there is no single definition of access to justice” (Marchiori, 2015, p. 5) and that chatbots can have different functionalities (Mehr, Ash & Fellow, 2017), it can be argued that the lack of definitions for both terms is a challenge for the development of behavioural theories and models to explain the use of chatbots in the context of access to justice.

Indeed, Queudot, Charton, & Meurs (2020) argue that “chatbots could support the improvement of access to legal information” (Queudot, Charton, & Meurs, 2020, p. 362), however, the authors do not define access to legal information but also, they do not explain how this outcome would be achieved. In the context of their research, the authors developed two information-retrieval (IR) chatbots for two different contexts. The first one aims to provide people immigration-related information and the second one aims to answer legal questions for employees in a bank. The focus of this research is oriented on the technological developments required to embed legal data in these chatbots, however, it fails to consider the use of the chatbot, especially as the contexts are very different.

Westerman, Walker, Ashley et al., (2019) developed the JusticeBot with the aim of improving access to justice by providing citizens with predictions on their case to help them in their decision-making process in the case of tenant-related issues. In this context, the chatbot use is different from Queudot, Charton, & Meurs (2020). Indeed, in this context the chatbot does not process natural language inputs as there is no user input. In this context, the chatbot is closer to a menu/button-based chatbot which are based on the

principle of decision-trees. In this context, the user answers specific questions about its situation i.e., whether the person is a tenant, or a landlord and the type of issue encountered. Then the chatbot performs a brief analysis based on previous court outcomes which helps the user envision potential outcomes in its situation. The chatbot indicates that the information provided is legal information and not legal advice. While this information is derived from trying out the JusticeBot, Westerman, Walker, Ashley et al. (2019) only state that the aim of the JusticeBot is to improve access to justice without defining what access to justice is, without mentioning access to legal information and by which process they would achieve access to justice. They only mention that "information could help the tenant get an overview of their legal situation and help inform their decision making" (Westerman, Walker, Ashley, et al. 2019, p. 1).

Djeffal (2018), Toohey, Moore, Toohey (2019), Sossin & Kapoor (2021) and Cruz (2018) approach the use of chatbots through the example of DoNotPay. In this context, we can observe the same tendency of stating that such chatbots will further access to justice (Djeffal, 2018. Sossin & Kapoor, 2021) without explaining how.

DoNotPay's role and functionalities seem to be often misunderstood in research due to its deceiving marketing motto on its website "the world's first robot lawyer" (DoNotPay, 2022). It is a chatbot developed in 2015 which was initially designed to help individuals appeal a parking ticket for free in London and New York by asking a series of questions and in certain cases, producing the documentation needed to send to the authorities (Djeffal, 2018). In 2017, DoNotPay also expanded to include 1000 legal areas (e.g., workplace) for free (Sossin & Kapoor, 2021). While it is difficult to measure its use and impact as it is a privately-owned firm, according to Sossin & Kapoor (2021) by 2016, it had been used to contest 160.000 parking tickets in both cities and in the first twenty-one months, it had been used for 250.000 cases, with 160.000 wins, giving it a 64% success in addition of $4 million saved. Except for these numbers, DoNotPay provides no information on its number of users and other metrics to measure their impact. Toohey, Moore, Toohey (2019) states that DoNotPay "claims to offer nationwide legal advice in the United States aimed at protecting individual rights" (Toohey, Moore, Toohey, 2019, p.

143) however, DoNotPay's terms and conditions explicitly state that they provide a platform for legal information and not legal advice (DoNotPay,2022). This is an important difference which needs to be highlighted in the existing literature as the practice of law and thus legal advice is restricted by law to only certain qualified individuals such as lawyers and tools like chatbots cannot cross this line (Cabral, Chavan, Clarke et al. 2012).

Bartenberger, Galla, & Kosak (2018) argue that chatbots "might be able to improve this situation by providing accessible and easy-to-use tools for citizens who wouldn't learn about their rights otherwise" (Bartenberger, Galla, & Kosak, 2018, p. 22). This statement assumes that customer service chatbots can give information to customers; the same could be replicated in the context of access to legal information. They also recognize that in the need of legal advice, a lawyer would be brought in. However, in this case again the authors fail to demonstrate how. Zlate (2022) argues that "it is undeniable that chatbots have the potential to expand access to justice" (Zlate, 2022, p. 123).

Cruz (2018) argues that while chatbots can "assist, inform, and resolve issues—may unintentionally frustrate, misinform, and harm the end user if the technology does not consider the end user's cultural barriers and preferences" (Cruz, 2018, p. 352). In this context, Cruz (2018) states that chatbots improve access to justice by providing namely self-represented litigants tailored legal guidance and information which overall assist users in identifying legal issues and further steps needed in the procedure. However, Cruz (2018) also highlights the shortcomings of such tools such as lack of privacy, implicit bias related to the use of AI but also the challenges of chatbots' design which do not account for the user's needs in terms of cultural preferences and values. While Cruz (2018) does raise important aspects which have been omitted in the other literature and are central to the topic of use, they do not further elaborate on how this contributes to the use of chatbots.

Overall, to justify that technology could support access to justice, the authors above are simplifying human decision-making processes by adopting rationality assumptions that chatbots as tools to access information suffice to improve access to justice. This simplified

vision can also be attributed to the transposition of chatbots from a context of customer service, which is much more generic, to a legal context like access to legal information, which depends on a case-by-case basis.

Through a case study, this research thus aims to challenge the hypothesis that chatbots can improve access to information and provide insights from an empirical case.

# Chapter 3: Case presentation and methodology

## 3.1 Methodology

As this study aims to understand if *AI chatbots can improve access to legal information*, this research can be qualified as **exploratory.** Indeed, considering the novelty of AI chatbots and their application in the context of access to legal information, there has been little research on the topic. As an AI chatbot had been considered for JuridiQC, this case research can contribute to knowledge development by exploring how the use of AI chatbots has been envisioned in a specific organisational setting. The data was collected through **qualitative semi-structured interviews** with four team members (see appendix 5) who had worked on the implementation of an AI chatbot for JuridiQC. It is important to clarify that the AI chatbot was amongst the features considered by JuridiQC. JuridiQC's team proceeded to a value analysis to evaluate the value yielded for the user. In this context, JuridiQC used an agile scrum method. Scrum is an implementation of the agile framework which "focuses on delivering the highest value in the shortest time." (Alsaqqa, Sawalha, Abdel-Nabi, 2020, p. 258) Often opposed to traditional approaches in waterfall which are static and time consuming, an agile scrum method aims to speed up the development process to adjust to changes faster. To achieve this, the agile scrum method uses "sprints" during which the team works for 3 weeks to plan, build, test and review a potentially shippable feature. By the end of the sprint, team members get together to discuss the outcomes of their sprint.

Thus, in the context of JuridiQC, the semi-structured interviews involved members from the interdisciplinary team who took part in the sprints: the content expert, the UX expert,

JuridiQC project director and the product owner. In scrum methodology, the latter is at the head of the team and has a holistic view of the product development of JuridiQC but is also in contact with executives from the broader organisation. Developers were not included in the interviews as they did not play a leading role in the assessment of the value of the AI chatbot feature. An interview guide was set up to structure the semi-structured interviews which were then carried out online in French.

In first place, the interviews were transcribed and translated in English for the purpose of this research. Then, the interviews were carefully read and annotated according to the main values JuridiQC considered relevant to their users at a functional level (“simplifies”, “reduces risk”, “integrates" and “quality”) and emotional level (“reducing anxiety”). For instance, in the verbatim below we can observe that the description relates to two main values: **quality** and **risk**. Firstly regarding quality, there are two dimensions: the first one is how information is delivered as the information is sensitive (e.g. importance of empathy) while the second refers to the quality of the information delivered (i.e. accuracy). Secondly, the last sentence of the verbatim illustrates the value of risk: leaning towards legal advice while JURIDIQC is only restricted to the provision of legal information.

*"Following the analysis, we realized fairly quickly in regards to our use case and to the **topics covered** by the website JURIDIQC, that these **are not very cheerful**; we talk about **divorce**, **separation and seniors losing their autonomy**. These are quite **sensitive topics**, you have to be very **careful on how you approach the information and ensure you give the right information**. We are in a legal field, so inevitably **the frontier with legal advice is critical: we must not lean towards legal advice."***

While some participants were interviewed only once, others were invited for additional interviews to clarify certain points. Overall, the process resulted in 6 interviews, lasting each approximately an hour.

### 3.2 Case presentation

To understand to what extent are AI chatbots able to improve access to legal information, this research uses an **explanatory qualitative case-study approach**. While some companies and organisations have started using AI chatbots to improve access to justice, there are only few users who have used these tools and the users are difficult to identify. Due to these constraints, this research decided to focus on JuridiQC. The latter is a particularly relevant case study in the context of this research for two reasons. Firstly, its mission is to provide reliable and appropriate legal information to help citizens to quickly find solutions and initiate legal procedures. Secondly, a proof of concept for an AI chatbot to improve access to legal information on JuridiQC had been developed but was finally not implemented. These two factors are aligned with the scope of this research and will help us answer our research question while identifying challenges which are not present in the existing literature.

**Presentation of the case study: JuridiQC by SOQUIJ**

Financed by the Minister of Justice of Quebec, JuridiQC's mission is to provide Quebecers reliable, accessible legal information, relevant to their situation, to help them understand their rights and take legal steps (JuridiQC, 2022). In this context, access to justice is defined as providing up-to-date legal, relevant legal information in an accessible language to Quebecers to accompany them in their access to justice journey.

Until now JuridiQC has covered legal questions related to two topics: a) separation and divorce and b) loss of autonomy in seniors, and each topic has subcategories. JuridiQC aims to achieve its mission by producing articles which address citizens' legal concerns in an accessible language. In certain instances, such as for the subcategory "home" under separation and divorce, to answer questions such as "*who can stay in the family home after a separation?"*, they provide tailored information by asking the user a few questions. The website also redirects the users towards reliable and verified resources.

Their content team includes experts in simplification which ensure that legal questions are translated in accessible terms. This is crucial to deliver their mission as according to a survey carried out by the Programme for the International Assessment of Adult Competencies (PIAAC) in 2012, 53,3% of Quebecers aged between 16 and 63 years old, do not reach the third level out of six of literacy competencies (Fondation pour l'Alphabétisation, 2022). Level three is equivalent approximately to the level of competences required to complete secondary education Canadian Council on Learning, 2007) Below level three, individuals understand short direct texts but have limited capacities to access and comprehend dense information (Fondation pour l'Alphabétisation, 2022). Thus, the content developed is adapted for level two of literacy in French and English to ensure accessibility.

JuridiQC is part of a wider organisational modernization strategy which aims to “make justice more accessible and more efficient” (JuridiQC, 2022). As part of the wider organisational modernization strategy, a temporary artificial intelligence (AI) laboratory was set up within SOQUIJ to explore the possible applications of artificial intelligence within the organisation. Following the deployment of the website in August 2020, the AI laboratory suggested to JuridiQC’s team the integration of an AI chatbot on JuridiQC. The AI chatbot was assessed by JuridiQC’s team and compared to other solutions. Due to various obstacles, the AI chatbot was deprioritized and the team decided to implement AI within the existing search bar of their website.

# Chapter 4: Results & Analysis

## 4.1 Assessing the AI technology

Implementation in this context is defined as an “organisational effort directed toward diffusing appropriate information technology within a user community” (Cooper & Zmud, 1990). The first step of the implementation process involved the AI laboratory. They identified the underlying technology i.e., the AI, which would enable the development of the chatbot. As an AI chatbot is powered through conversational AI, the first step was thus to compare existing conversational AI solutions on the market. While evaluating

existing conversational AI solutions, the AI laboratory assessed criteria such as the technology and associated subcriteria: security and confidentiality of the information, implementation approach, integration, and costs i.e., initial cost, maintenance costs, licensing costs and training costs.

While assessing the criterion of the AI itself, security and confidentiality, a key condition was to identify a solution where JuridiQC retained ownership over the personal data of their users to ensure data privacy and protection. Personal data such as information exchanged through interactions with the chatbot can be used to train the chatbot to improve its performance. Other additional personal information such as user preferences, activity and other implicit user data can also be extracted for commercialization purposes (Hasal, Nowaková, Saghair et al. 2021). Considering the amount of personal information involved and JuridiQC's position as a governmental website, identifying a solution which would allow them to retain ownership of their users' information was a sine qua non condition.

Another important factor was the implementation approach which also determines the flexibility of use of the conversational AI. Currently, three approaches exist on the market: a) toolkit approach, b) targeted services or point solution providers, c) platform-based approach (Revang, Mullen, Elliot, 2022). The latter "provides centralised operations and conversational management while covering a broad range of use cases, from simple to complex" (Revang, Mullen, Elliot, 2022, p. 38). As JuridiQC was envisioning other applications of AI aside from the chatbot, it was important for them to have a technology applicable to different features that would require natural language processing and dialogue management. After assessing the different options, the AI laboratory identified Rasa Open Source as a conversational AI which respected the requirement in terms of security and confidentiality but also answered other criteria such as costs (i.e., free) and flexibility of applications.

### 4.2 Assessing the AI application

When JuridiQC's team started their sprint, the website only covered the topic of separation and divorce which included a few subcategories. To facilitate access to information on the website, the users could use the website's search bar where they could enter keywords. This search would give a list of articles which included the keywords searched and the user would have to go through the list to find the relevant articles. It is in this context that the team had to evaluate how the chatbot would bring value to the user. As previously mentioned, a chatbot is defined as "a computer program that processes natural-language input from a user and generates smart and relative responses that are then sent back to the user" (Khan & Das, 2018, p. 1). In the context of JuridiQC, the interaction between the chatbot and the user would take place via a text-based interface.

### 4. 2. 1 Framework of analysis: A multidimensional value analysis

To evaluate which application of AI yielded more value in the context of JuridiQC, the team assessed the chatbot's value across different users' needs during a sprint of three weeks. The assessment approach was inspired by the B2C Elements of Value (Almquist, Senior, & Bloch, 2016) (appendix 6), a pyramid based on the assumption that products and services "deliver fundamental elements of value that address four kinds of needs: functional, emotional, life changing, and social impact" (Almquist, Senior & Bloch, 2016, p. 7). The pyramid is based on Maslow's hierarchy of need, therefore, to deliver higher values, lower values need to be addressed. The values which are more important to the users depend on the industry. In the context of JuridiQC, some of the values they considered relevant to their users at a functional level were: "simplifies", "reduces risk", "integrates" and "quality". At an emotional level they focused on "reducing anxiety". They proceeded by analysing how these values applied to the chatbot.

The value also depends on the level of AI chatbot implemented. Indeed, there are five levels of AI chatbots, ranging from 1 to 5 depending on their level of intelligence (Nichol, 2020). In the case of JuridiQC only level 2 and 3 are relevant.

In the case of JuridiQC, the first scenario was to implement a chatbot of level 3, a "contextual assistant" which can assist the user in finding specific types of information on

the website. In this case, the user journey would briefly look as follows: the user would enter the website, the chatbot would pop up and ask the user if they are looking for a specific topic, it would suggest to the user questions that are frequently asked, the user would either select one suggestion or write its question, the chatbot would process the input and ask clarification questions to the user to provide with the information which is suited to its situation. The conversation is fluid and less likely to break as the user does not need to know how to use the chatbot.

The second scenario was to implement a chatbot of level 2, a chatbot that could assist the user in finding information on the website. In this case, the user journey would briefly look as follows: the user would enter the website, the chatbot would pop and ask the user if they are looking for a specific topic, it would suggest to the user questions that are frequently asked, the user would either select one suggestion or write its question, the chatbot would process the user input and try to provide the link deemed relevant to their input, it would then ask the user if the answer is satisfying, in case the answer is no, it would attempt to provide another link. In this case, the chatbot would be equivalent to a more interactive search bar which could simplify the user journey. However, the conversation is likely to break if the user asks a more specific question as the chatbot's role is limited to only redirecting the user and there is no human intervention possible.

**A multidimensional value analysis yielded by chatbots level 2 and 3**

**"Simplifies"**

"Simplifies" refers to a feature that aims to simplify the process or the action undertaken by the user. In the case of a level 2 chatbot, the latter would overlap with the existing search bar on the website. In comparison to the existing search bar, the added value would be the capacity of the chatbot to process natural language and give a more interactive user experience. However, in the situation where the chatbot would fail to satisfy the user by providing the right answer, the user would be left frustrated without an answer to their question.

Furthermore, the chatbot would not be able to redirect the user to a human who could assist them to address their frustration. In addition, when JuridiQC was deployed it only covered one topic with few subcategories. In that respect, there was not a lot of information complexifying the user journey which required a more explicit navigation tool such as a chatbot.

**“Reduces risk”**

The feature aims to protect users from losses. In the case of JuridiQC, the chatbot increases various risks. Firstly, due to its interactive dimension, at both levels the chatbots would increase the probability of users sharing personal information. While this can be restricted by not allowing user input and providing answer options, JuridiQC knows from its user research that their users tend to share contextual information about their situation in the search for legal information rather than general key terms. As JuridiQC’s role is to provide legal information and not legal advice, JuridiQC does not want to further incentivise this behaviour. Secondly, despite indicating to the user that the chatbot is a machine, the human-like interaction could mislead users into thinking that they are talking with a human. The latter could further mislead the user into thinking that they could be talking to qualified legal professionals and thus obtain legal advice. While JuridiQC mentions on its website that they can only provide legal information, they know through user research that their users are looking for legal advice.

The frontier between providing legal advice and legal information is blurry and it has been a continuous challenge for JuridiQC to ensure that their content does not fall under legal advice but also that users do not interpret it as such. Legal information is defined as information provided which refers to legislative and regulatory provisions which can be relevant to a specific topic (Barreau du Québec, 2013). Legal advice is defined as information provided based on individual facts to qualify a situation which is in turn interpreted based on legislative and regulatory provisions on which there can be various opinions (Barreau du Québec, 2013). Under article 128. 1. a) of the Law on the Bar (RLRQ, c. B-1) it is stated that: “128. (1) The following acts, performed for others, shall

be the exclusive prerogative of the practising advocate or solicitor: (a) to give legal advice and consultations on legal matters;" In this context, JuridiQC can only provide legal information.

A chatbot of level 3 could provide information which could be considered as legal advice. This would occur as the chatbot in its exchange with the user would ask information to the user to provide accordingly the suited legal information the user is looking for. In that respect, it is considered that the chatbot is qualifying the user's situation to interpret the law and make the outcome a legal advice. In that context, the chatbot could push JuridiQC in the direction of legal advice while they can only offer legal information.

While JuridiQC could mitigate this risk to ensure that the information provided falls under legal information, as mentioned above, JuridiQC knows from its user research that its users are seeking legal advice. As they can only provide legal information, it is important for them to lower the risk that people interpret information as legal advice. In that context, the chatbot would bring more confusion and thus increase this risk

**"Quality"**

The feature aims to bring high quality service. In the context of JuridiQC, quality of information is central to their mission. The use of chatbots can challenge the quality of the service provided for various reasons. Firstly, as JuridiQC covers sensitive information related to topics such as divorce and separation, when providing information, the content team ensures that the information is accessible but also clear as individuals will use this information to initiate legal actions. In this context, a chatbot of level 2 could fail to redirect the user to the relevant article, resulting in frustrating the user but a chatbot of level 3 could redirect the user to a wrong information which the user could then use.

Secondly, as the topics covered by JuridiQC i.e., divorce and separation are sensitive topics, in an interaction with a chatbot, quality passes by the content but also the form. Considering the mental state in which users arrive on the website i.e., anxious and the topic, it is important for the chatbot to demonstrate empathy. In the case of chatbots, their

capacity to demonstrate empathy and to deal with such situations with tact remains a concern.

Thirdly, as the topics covered by JuridiQC i.e., divorce and separation are not only sensitive topics but also complex legal topics that can involve different types of law such as fiscal law, heritage law, divorce law to name a few, to obtain quality information the process might be more complicated than the chatbot make it seems to the user.
In that respect, the chatbot might oversimplify a process which would compromise the quality of the information received. Providing information tailored to the person's situation can be challenging for a chatbot. Despite training, there can be instances which would not have been covered and which would require a legal professional opinion. Risk mitigation could improve the performance of the chatbot; however, it would require a lot of data to train the model, test and monitor the outcome. This is an obstacle to delivering quality information.

**"Reduces anxiety"**

The feature aims to help users worry less and feel more secure. Chatbots can increase anxiety firstly as the user needs to first understand how to use the chatbot and what to expect from it. JuridiQC knows from its user research that users arriving on their website are often anxious as they are dealing with sensitive problems such as divorce and separation. In that respect, the chatbot should not exacerbate their mental state.

Secondly, in the case of a level 2 chatbot, the user might get frustrated because they could have found the information themselves as there is not a lot of information on the website. The chatbot could also fail to provide them with the information they are looking for and as there is not a human intervention possible, the user might be left frustrated. In the case of a level 3 chatbot, the user might get frustrated by being misled by thinking that the chatbot can help them.

**“Integrates**”

The feature aims to integrate coherently in the existing solution to provide a seamless user journey. In the case of JuridiQC, the coherency of the chatbot is questionable as in the case of a chatbot 2 level it overlaps with an existing feature and in the case of level 3, it might deceive the user. In addition, JuridiQC was created with the idea that any user could easily access information on the website, thus it did not have an added value.

### 4. 2. 2 Framework of analysis: Framing the challenges using DeLone & McLean (2003)

The multidimensional value analysis provided above allows us to understand how the JuridiQC’s team assessed the AI chatbot focusing on value generation for the user.
As we understood, there are challenges preventing them from achieving the desired values: simplifies, reduces risk, quality, reduces anxiety and integrates.

***Table 1: Obstacles extracted from JuridiQC’s value assessment***

| Desired values | Obstacles |
|---|---|
| Simplifies | - **Not enough content** paired with **overlapping function with another feature** (i.e., search bar)<br>- **A strong user experience** which was developed to ensure that people can navigate the website without any assistance. |
| Reduces risk | - **Interactive dimension** of the chatbot which engages in an interaction which may incentivise the user to overshare or mislead the user on t<br>- **Human-like dimension** of the chatbot might mislead the user into thinking they are talking with a human<br>- **Thin frontier between legal advice and legal information**: must remain in provision of information |
| Quality | - Quality of information: could fail to provide relevant information, complex legal questions which cannot be simplified or answered in general terms<br>- Quality of system: could fail to be empathetic while dealing with |

| | |
|---|---|
| | sensitive topics |
| Reduces anxiety | - User needs to figure out what he can expect from the chatbot: could exacerbate mental state<br>- Lack of human support |
| Integrates | - Overlaps with an existing feature<br>- Conflicts with the philosophy of the website (i.e., no assistance required) |

Another obstacle which was mentioned but was not included in the value assessment was negative previous experiences. The team members of JuridiQC did not have a positive experience using chatbots. To go beyond their personal experiences, they consulted an external company they had been working with which did user tests on chatbots. They confirmed that based on their research, chatbots yielded few positive experiences in terms of user experience. In that respect, past user exposure to chatbots paired with research on chatbots demonstrated that chatbots would not bring added value to the user's journey on JuridiQC.

To explain the challenges related to AI chatbots' implementation for improved access to legal information, this paper will use the model of information system (IS) success proposed by DeLone and Mclean (2003) (see appendix 7).

In their updated model, the authors propose six interconnected characteristics determining IS success: information quality, system quality, service quality, user satisfaction, intention to use and net benefits. Initially used by the authors to measure the challenges related to e-commerce, it has since been used, adapted, and supported by various authors to explain the success of an IS (Urbach & Müller, 2012). The model and definitions were adjusted to fit JuridiQC's context, using a qualitative approach which differs from the initial approach in which it was developed. However, as this is exploratory research, using this model with a qualitative approach can help to structure our findings and suggest an approach for future research.

#### 4.2.2.1 IS characteristics DeLone & McLean (2003)

**Information quality** refers to the quality of the information that a citizen can obtain by using the AI chatbot. In the context of JuridiQC, quality legal information is defined as up-to-date, relevant, formulated in an accessible language and remains within the boundaries of legal information as they cannot provide legal advice. It cannot be guaranteed that the AI chatbots suggested in this case study can ensure quality legal information and hence, this would negatively impact user satisfaction and intention to use.

**System quality** refers to the user experience on JuridiQC. Indeed, the AI chatbot would exist as part of JuridiQC's website and its system quality would be impacted by JuridiC's user experience. The optimised user experience on JuridiQC would negatively impact the user's intention to use the AI chatbot as the website was not only adapted for level two of literacy in French and English to ensure accessibility but was also structured in a way that users would not need to navigate on the page to find information. In that respect, the human-like dimension of the chatbot, which is intrinsically linked to the interactive dimension is conflicting with the user experience philosophy and might also be misleading to the user as there is no added value. Indeed, while research has indicated that human-like behaviour may fight users' distrust towards IS, it is important to bear in mind that it also affects users' expectations (Zamora, 2017).

**Service quality** refers to the assistance and support that users can receive from JuridiQC. In this context, the user would not be able to benefit from assistance nor support as JuridiQC only provides information. As JuridiQC knows that users are looking for assistance, the user can be misled by the chatbot as a form of assistance and in case of frustrating interactions, the user would not have any support. In that respect, this would negatively impact user satisfaction which in turn would negatively impact intention to use.

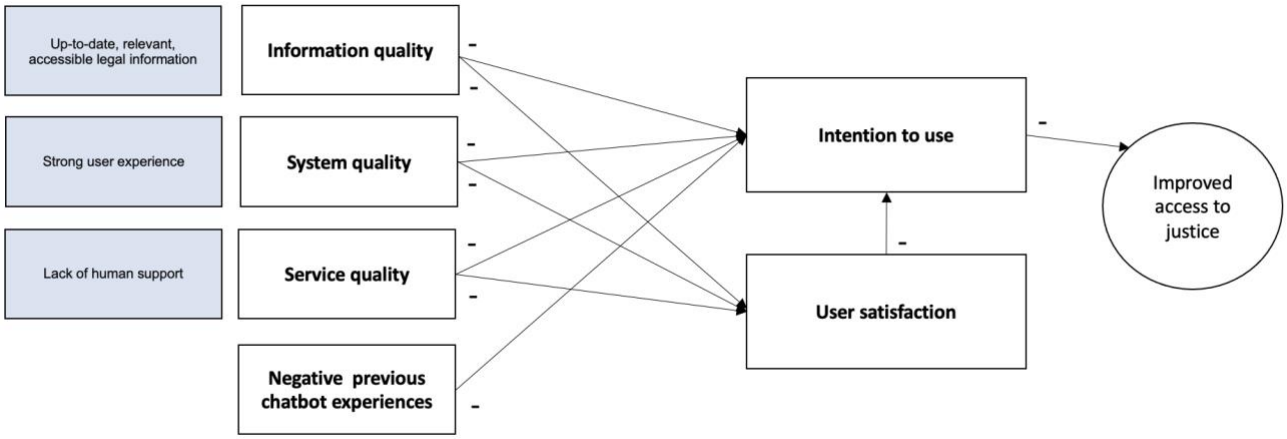
**User satisfaction** refers to the level of satisfaction experienced by the user in using the AI chatbot. In that respect, if we look at task performance as a measurement of user satisfaction, it is important to compare the options available to the user to achieve the same outcome. For instance, a good user experience on the website where the user can easily achieve its task, will most likely negatively impact the intention to use. Existing

research also highlights the importance of considering IS habits in addition to task efficiency (Zamora, 2017). JuridiQC knows from its user research that Google as a search engine plays an important role in the process of access to legal information as it is often the starting point. Indeed, in November 2021 in Canada, Google was the most visited website with on average per month 955 million visits (Statista, 2022). In addition, JuridiQC knows that sometimes, instead of using the internal tools on JuridiQC (i.e., search bar), users exit the website to go back on Google to do another search before being redirected to another page of JuridiQC's website. In that respect, this would also negatively impact intention to use.

**Intention to use** refers to the attitude of the user towards the AI chatbot by opposition with use which refers to the actual behaviour (Delone & Mclean, 2003). In this context, intention to use is negatively affected by **previous negative user experiences**.
**Net benefits** refer to "the extent to which the IS is contributing to the success of the different stakeholders" (Urbach & Müller, 2012, p.7). In this context, success is defined as improved access to legal information. In the context of JuridiQC, the use of an AI chatbot does not lead to an improved access to legal information.

Overall, by applying our results to the Delone & Mclean (2003) model, we can say that in the context of JuridiQC firstly, AI chatbots cannot guarantee a legal information of quality i.e., up-to-date, relevant, accessible which negatively affects user satisfaction and intension to use. Secondly, the strong user experience of the website is also an obstacle for the chatbot which negatively affects intention to use. Thirdly, the impossibility to have a human support available is also an obstacle affecting user satisfaction and thus intention to use. Fourthly, negative previous experiences with similar looking chatbots also deters the users from using chatbots.

***Figure 2: Delone & Mclean (2003) adapted for the case study of JuridiQC***




## Chapter 5: Emerging Results

### 5.1 The AI search bar

As the chatbot had been deprioritized, other AI applications were considered by JuridiQC's team: a forum moderated by an AI, AI analysis of sentiments in the comments, AI translation and an AI search bar. As the overarching interest of this research is to understand if AI can improve access to justice, this section includes results that emerged from the interviews, and which could add to our understanding of AI chatbots and the improvement of access to justice. Using the same values as for the chatbot assessment, the multidimensional value analysis demonstrated that an AI search bar would bring the most value to the users.

#### Simplifies

Firstly, it would simplify the search of information on the website as the user would be able to do searches using sentences instead of keywords. As mentioned earlier, JuridiQC knows from its user research that users do not use keywords to find information related to their situation but rather use sentences. Secondly, the chatbot would redirect the user to the specific section in the article while previously the user had to go through the articles which included the keywords, they had typed to find the relevant information. In this

context, an AI integration in the search bar would simplify the process by allowing users to express themselves in a natural language and help them find information more easily.

**Reduces risk**

While the search bar would allow users to express themselves in their own words, the user would not expose their personal situation as much as they would do with a chatbot.

**Quality**

The user would be more efficiently redirected to an answer that matches their requests.

**Reduces anxiety**

It would reduce anxiety by users not having to understand how the search bar functions as they have previously used search bars. They would also be able to directly express themselves in their own words.

**Integrates**

**I**t would integrate coherently in the existing solution.

***Table 2: Summary of values assessed for the AI search bar***

| | **Simplifies** | **Reduces risk** | **Quality** | **Integrates** | **Reduces anxiety** |
|---|---|---|---|---|---|
| AI search bar | User types phrases instead of keywords, output points to the section of the article instead of different articles | Allows the user to express themselves naturally without exposing themselves too much | Output points to the section of the article instead of different articles, more specific results | Integrates seamlessly with the website | Users already know how to use a search bar, so there is no need to take time to understand it.<br><br>Can express themselves naturally without having to think of keywords |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |

From JuridiQC’s point of view, by integrating the AI in the search bar, it could allow them to improve an existing feature (i.e., the search bar) in a context that users are already familiar with. Thus, it contributes to the ease of use of the latter while providing information more efficiently. As mentioned above, the existing search bar could only use keywords and if the words were not spelled correctly, it would complicate the search. In this context, the users can search using their own terms, but they also benefit from previous searches which are suggested in the search bar (i.e., integration of a smart frequently asked questions (FAQ)).

While the search bar provides an added value in the user’s journey, it also has an added value for JuridiQC. As it is integrated with Google Analytics, JuridiQC can have insights into users' most frequent queries. This in turn allows them to better understand users' needs in terms of content i.e., what information users are looking for but also in terms of format i.e., how do people formulate their problem, both helping them to adjust their content. This adjustment could be done by associating users' queries with one or more information. As the AI search bar would be used, the AI search bar would learn from the users’ input, while being monitored to ensure that it successfully redirects the user to the appropriate content. In that context, the AI search bar could improve access to legal information by helping the user find more efficiently the information that they are looking for.

However, this assumes that the user would use the AI search bar. While internal search bars are part of websites' norms and that users know how to use them, will JuridiQC’s users use the new AI search bar? Users who had previously used the search bar, which was not as performant, might have had a previous negative experience which would deter them from using it, unless they know that it has been improved. Looking into the user's behaviour on the website, JuridiQC knows that Google plays an important role in the quest

for information. Indeed, it is often the starting point for users before being redirected to JuridiQC's website. In addition, JuridiQC knows that sometimes, instead of using the search bar, users exit the website to go back on Google to do another search before being redirected to another page of JuridiQC's website. In that context, the search bar can be bypassed using search engines like Google. If the AI search bar isn't used in the context of JuridiQC, its performance will not be able to improve as the AI learns through usage, however, JuridiQC would still be able to obtain insights into user needs through Google analytics which allows them to see search queries.

## Chapter 6: Discussion

This research was motivated by existing claims which argued that AI chatbots could improve access to justice, however, without providing explanations on how nor defining what was meant by access to justice and AI chatbots. In fact, this study argues that existing research had a technological deterministic approach, which omitted the role of the user in driving the outcome of improved access to justice. Through this research, the following contributions have been made.

### 6.1 On access to justice

Firstly, this paper proposes to look at access to justice as a process involving an individual or a group who faces an issue, who has the capacity to take actions through access to information to make their injustice heard and obtain a satisfactory remedy, either by formal or non-state institutions. Access to legal information is a key component of access to justice as it can enable an individual to frame its issue in legal terms, initiate the journey to access to justice and remains crucial throughout the process. Access to legal information is also a process and future research needs to understand how access to legal information evolves throughout the process and how do people make use of this information i.e., consultative vs decisive. Identifying obstacles that could arise at the different stages of access to legal information which could hinder individuals from translating the information into actions is key to further improve access to justice. Actors

interested in developing AI chatbots for access to legal information, should pay attention to the fine line between access to legal information and legal advice. Future research should also adopt a more interdisciplinary approach than existing research to account for the different dimensions of access to justice.

### 6.2 On AI chatbots

Secondly, this paper also aimed to shed light on AI chatbots in the context of justice which have also been poorly defined in the existing literature. While categories and classifications have been suggested by existing research (Mehr, Ash & Fellow, 2017; Adamopoulou & Moussiades, 2020; Queudot, Charton, Meurs, 2020), too often AI chatbots are being reduced to tools which can interpret a user input and generate related responses back to the user, mimicking a conversation (Khan & Das, 2018). As we have seen through Westermann, Walker, Ashley et al., (2019), an AI chatbot does not have to mimic a conversation and can remain interactive and engaging. Acknowledging the different types of AI chatbots and the different contexts in which they can be used depending on how they operate, are vital to better understand the different types of use as which define the outcomes. Through the case of JuridiQC, we also understood that more attention should be given to the context and the environment of the chatbot which is often integrated as part of a website. In that respect, the constraints of the website can become constraints of the chatbot.

Future research should compare different AI chatbots' performance for different legal problems to understand if certain AI chatbots' features, i.e., filling documents, question answering, drafting, could be more useful for certain type of legal issues. In this context, taxonomy of legal issues (LIST) created by the Standford Legal Design Lab could be helpful. While AI has enabled the development of more performant chatbots by processing natural language, the text-based interface suggested for chatbots in the context of JuridiQC remains the same as people had previously experienced. Users who have had negative experiences with a similar format could thus be reluctant to use them. Thus,

future research should exploit the variety of chatbots, the different legal issues for which they can be used and explore how to measure the use and efficiency of these AI chatbots.

### 6.3 On AI chatbots for access to legal

This research aimed to contribute to the existing literature by leveraging insights through a practical case study. The research question: to understand to what extent AI chatbots can improve access to legal information was answered through a case study on JuridiQC, a website providing legal information. JuridiQC's team had considered integrating an AI chatbot before deprioritizing it for instead opting for an AI search bar. To answer our research question, we first adopted JuridiQC's perspective: a multidimensional approach to assess the values which mattered for JuridiQC and their users. The values sought by the introduction of a new feature were simplifies, reduces risk, quality, reduces anxiety, and integrates. In the second phase, we contextualised our findings using Delone & Mclean (2003) model of IS success.

In the first phase of the analysis, based on their conception of an AI chatbot we concluded that chatbots of level 2 and 3, do not provide value to the users neither at a functional level nor at an emotional level, failing overall to add value to the user's journey on JuridiQC. The level 3 chatbot was abandoned due to the risks related to legal advice. Indeed, the process by which the chatbot would analyse one's situation before providing information could be considered as legal advice but also interpreted as such by the user itself. Risks related also to the margin of error and the lack of data led to the deprioritization of this option. Instead, the team produced a proof of concept for the level 2 chatbot as the application was deemed more feasible, however, as it did not add value to the user's journey on JuridiQC, it was also deprioritized. The value analysis overall demonstrated that the AI chatbots did not answer users' needs which is central to JuridiQC's mission.

In the second phase of the analysis, we used the Delone & Mclean (2003) model of IS success to build upon the results from the multidimensional value assessment which we

adapted to the AI chatbot context. The six interconnected factors determining IS success are: information quality, system quality, service quality, user satisfaction, intention to use and net benefits. Here we could observe that information quality, which is up-to-date, relevant, accessible legal information could not be guaranteed and thus would negatively impact user satisfaction which in turn would negatively impact intention to use the chatbot. The system quality which is measured by the strong user experience of the website impacts negatively the intention to use as the page is easy to navigate and built to not require additional assistance. The human-like dimension of the chatbot and its interactive dimension would also negatively impact the intention to use. Regarding service quality, the lack of human intervention would negatively impact user satisfaction which in turn would negatively impact intention to use. A human intervention is needed when the chatbot reaches its limits to not leave the user frustrated, hence affecting its satisfaction. To ensure system quality the chatbot's purpose must be clearly stated for the user to adjust its expectations. Regarding the level of satisfaction experienced by the user in using the AI chatbot, we looked at the impact it would have on task performance by comparing the options available to the user to achieve the same outcome. Here, we could observe that a strong user experience and Google search could negatively impact intention to use.

These complementary analyses show that in the context of JuridiQC, the AI chatbots envisioned could not improve access to legal information due to the aforementioned obstacles. However, the question that arises is can these obstacles be overcome? Some of them such as lack of human support could be addressed by providing support, however, this would not be aligned with the mission of JuridiQC which only provides legal information and not advice. Others such as the reliance of users on Google, are less straightforward.

The reliance of users on Google in their information quest can also be observed with the developments of Google featured snippets. The latter are brief pieces of information which are taken from a website and appear following a Google search. According to Google, "snippets enhance the search experience by making it easier to access information"

(Sullivan, 2018, p. 1). Google's automated systems determine the content chosen for featured snippets. When JuridiQC's content was put forward as a featured snippet, it also raised concerns on JuridiQC's side. Firstly, there is the risk that the information provided does not match the user's query and thus misleads the user. Secondly, there is the risk that the search is simplified to the extent that it removes the information from its context, which has previously been carefully curated by JuridiQC's team to help users have an accessible overview. In that sense, such shortcuts can be dangerous for the user.

Considering the reliance of users on Google, future research could investigate what we learn from people's use of Google, namely, to better understand their needs when it comes to access to justice. Future research could also explore how AI could facilitate referencing, to help search engines put relevant information forward in an appropriate format. For instance, the Standford Legal Design Lab has launched a project called 'A better legal internet' which aims to make legal information more accessible namely through the creation of Schema.org markup to improve the accessibility of websites' content when people look for legal information (Standford Legal Design Lab, 2022).

## Chapter 7: Conclusion

This research has contributed to the existing literature by defining and elaborating on AI chatbots and access to justice beyond their initial scope. The case study on JuridiQC allowed us to understand that in this context, AI chatbots could not improve access to justice as they did not fit with their mission and user-centric approach. AI was instead integrated within JuridiQC's search bar, which was deemed to better improve access to legal information, if used.

Through the case of JuridiQC, we had the opportunity to see how the team assessed the implementation of an AI chatbot, the challenges they faced and how they pivoted. It contributed to existing literature by demonstrating that the process is more complex and

that research as well as practitioners should pay attention to such obstacles and the particularity of the access to justice context. From an organisational perspective, JuridiQC also demonstrated two key strengths which could be valuable for public sector organisations looking to develop IS in this field. Firstly, JuridiQC has demonstrated a strong user-centric strategy. From its team which included a UX designer but also an expert in simplification, they invested in human resources to ensure a holistic understanding of the users' needs. In addition to the team, their multidimensional value assessment demonstrates their commitment to deliver value to their users. As suggested by Toohey, Moore, Dart et al. (2019), legal design needs to be further researched "to ensure technological solutions are designed from the outset to meet the needs of end users of legal technology, and not just the needs as they are perceived by system experts such as lawyers and policymakers" (Toohey, Moore, Dart et al, 2019, p. 134).

Secondly, this case study also demonstrates the importance of innovation labs within public organisations as a driver of innovation. Indeed, the AI chatbot was a recommendation made by a temporary artificial intelligence (AI) laboratory within SOQUIJ to explore the possible applications of artificial intelligence within the organisation. This initiative is part of a wider organisational modernization strategy which is crucial for the performance of the public sector. Indeed, it is an opportunity for teams to familiarise themselves with new concepts, new processes, and new technologies to develop their competences while exploring how to deliver value for users in a data-driven society.

Aside from these insights, there are however several limitations to this study. Firstly, the research focused on JuridiQC which at the time of the interviews involved a certain type of AI chatbot i.e., text-based question-answering system. In this context, there were obstacles which made JuridiQC pivot towards another solution which provided more value to the user. This means that the AI chatbot the way it was conceived in this context could not improve access to legal information. An AI chatbot which could address other needs i.e., filling a document may lead to different conclusions. However, it is crucial to ensure that the envisioned chatbot remains within the boundaries of legal information. In fact, considering the developments, we are seeing in AI namely with chatGPT, it is also

interesting to see if and how the law will change and how it may influence the use of AI chatbots in the context of access to legal information. Nevertheless, the present study invites researchers to clearly define the functionalities of the chatbots used and to bear in mind the contexts in which they can be used.

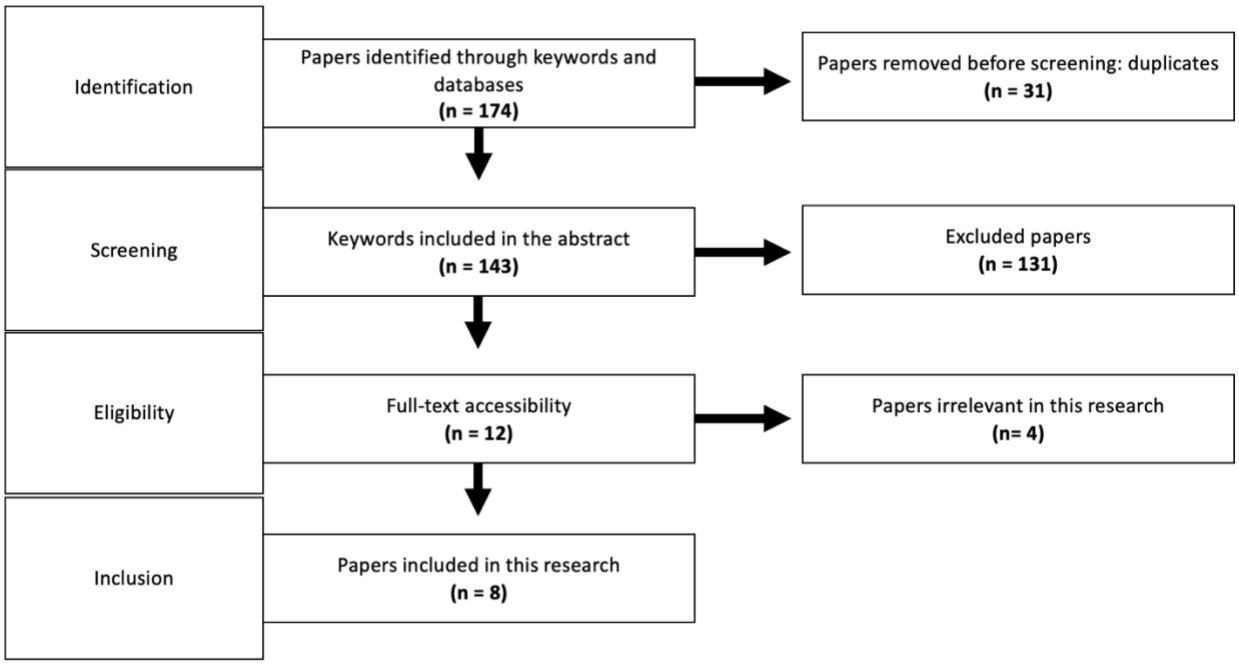
Secondly, the case study was based on qualitative interviews on a project which was initiated in 2020. Considering the timeframe, in the process of data collection, some details might have been omitted by the participants. In addition, as the team worked in Agile SCRUM which favours verbal exchange, data collection also had to rely on the participants' memory of the events.

Thirdly, the literature on AI chatbots in the context of access to justice is recent. This paper was thus limited by the lack of resources but adopted an exploratory approach which will hopefully help future research.

Overall, while the external validity of this research may be low, this exploratory research has given us insights on how the public sector engages with innovative technologies like AI chatbots and the importance of a human-centred design in which value creation for the user is key. As we can expect further developments in AI, the question of how these developments can be used to address socio-economic issues such as access to justice will remain at the heart of research, debates, and policymaking. However, AI is not a silver bullet, and we should be wary of technological deterministic approaches which tend to simplify the complexity of our societal issues while assuming that users are rational actors.

# Appendix

## Appendix 1: PRISMA flowchart for the literature review on AI chatbots and access to justice




## Appendix 2: Sample of definitions of access to justice in literature

| Source | Definition |
|---|---|
| UNDP (2004) | *"Access to justice is, therefore, much more than improving an individual's access to courts, or guaranteeing legal representation. It must be defined in terms of ensuring that legal and judicial outcomes are just and equitable."* |
| Marchiori (2015) | *"Access to justice encompasses all the elements needed to enable citizens to seek redress for their grievances and to demand that their* |

| | |
|---|---|
| | *rights are upheld. Such elements include the existence of a legal framework granting comprehensive and equal rights to all citizens in accordance with international human rights standards; widespread legal awareness and literacy among the population; availability of affordable and quality legal advice and representation; availability of dispute resolution mechanisms that are accessible, affordable, timely, effective, efficient, impartial, free of corruption, that are trusted by citizens and that apply rules and processes in line with international human rights standards; and the availability of efficient and impartial mechanisms for the enforcement of judicial decisions" (p. 5)* |
| UN Women (2016) | *"Access to justice is a complex phenomenon that, in the broad definition underpinning this exercise, encompasses the existence of rights and obligations enshrined in laws and regulations, public awareness of such rights, and the ability to exercise and claim those rights through dispute resolution mechanisms that are fair, efficient and accountable."* |
| OGP Global Report (2019) | *"Access to justice is more than just access to lawyers or courts. It is a component of the rule of law, comprised of a number of elements that at its core means that individuals and communities with legal needs know where to go for help, obtain the help they need, and move through a system that offers procedural, substantive, and expeditious justice."* |
| The Law Society (?) | *Access to Justice implies access to a legal system underpinned by the rule of law and due process, access to legal advice, representation, access to a court, and access to funding.* |
| Rass-Masson & Rouas (2017) | *"Access to justice means, first of all, that the legal system must be equally accessible to all. Plaintiffs must be empowered to bring a claim before a court. Therefore, the procedural rules and practicalities shaping the legal system, such as standards on standing, litigation costs, availability of legal aid, or access to legal representation, may allow or restrict the ability of plaintiffs, especially the poor and disadvantaged, to bring a claim"* |
| Bedner & Vel (2010) | *'Access to justice exists if: - people, notably poor and disadvantaged, - suffering from injustices - have the ability - to make their grievances be listened to - and to obtain proper treatment of their grievances - by state or non-state institutions - leading to redress of those injustices - on the basis of rules or principles of state law, religious law or customary law - In accordance with the rule of law'* |
| Farrow, T. C., & Jacobs, L. A (2020) | *''...meaningful access to justice, is centred instead on the idea that access to civil justice is principally concerned with people's ability to* |

| | |
|---|---|
| | *access a diverse range of information, institutions and organisations – not just formal legal institutions such as the courts – in order to understand, prevent, meet and resolve their legal challenges and legal problems when those problems concern civil or family justice issues. Meaningful access to justice measures access for a person not necessarily in terms of access to lawyers and adjudicated decisions but rather by how helpful the path is for addressing and resolving that person's legal problem or complaint."* |
| Elijah Tukwariba Yin, Francis Kofi Korankye-Sakyi & Peter Atudiwe Atupare (2021) | *"...we define access to justice as having equal rights, opportunities, and obligations to access a legal institution for its functions in a fair, transparent, and equitable manner, especially for the illiterate, the poor, and the vulnerable in society." (p. 1)* |
| Mitchell, Byrnes, Bergman & Peisah (2021) | *"Access to justice encompasses the right to a fair trial, including equal access to and equality before the courts and tribunals, fair, prompt, and responsive decisions by administrative decision-makers that affect one's interests, and the ability to obtain just and timely remedies for rights violations."* |

**Appendix 3: Sample of definitions of chatbots**

| Source | Definition of chatbots |
|---|---|
| Zumstein & Hundertmark (2017) | *"Originally, the term chatbot was used for a computer program, which simulates human language with the aid of a text-based dialogue system. Chatbots contain a text input and output mask, which allows mobile users to communicate with the software behind them, giving them the feeling of chatting with a real person."* |
| Adamopoulou & Moussiades (2020) | *"A computer program designed to simulate conversation with human users, especially over the Internet"*<br><br>*"Chatbots are also known as smart bots, interactive agents, digital assistants, or artificial conversation entities."* |
| Gupta, Vijayakumar & Hathwar (2020) | *"A Chatbot is a computerised program that acts like a colloquist between the human and the bot, a virtual assistant that has become exceptionally popular in recent years mainly due to dramatic improvements in the areas like artificial intelligence, machine learning and other underlying technologies such as neural networks and natural language processing."* |

| | |
|---|---|
| Khan & Das (2018) | *"A chatbot is a computer program that processes natural-language input from a user and generates smart and relative responses that are then sent back to the user. Currently, chatbots are powered by rules-driven engines or artificial intelligent (AI) engines that interact with users via a text-based interface primarily."* |

**Appendix 4: Literature review on the use of AI chatbots in the context of access to legal information**

| Source | Methodology | Definition of access to justice | Definition of AI chatbots | Contributions/Results |
|---|---|---|---|---|
| Bartenberger, Galla, & Kosak (2018). | n/a | No definition, no mention of access to legal information. | No definition, understood as an "entrance point that provides basic information and guidance" ( Bartenberger, Galla, & Kosak, 2018, p. 22) | Identifies four potential strengths of chatbots, namely improving access to justice and generating documentation to facilitate procedures. |
| Bell (2019). | n/a | No definition, no mention of access to legal information. | No definition, understood as a tool that "can walk a user through a series of steps to answer simple legal queries or be directed to curated information" (Bell, 2019, p. 117) | Identifies how AI, namely chatbots can be integrated to assist people dealing with issues in family law in Australia. |
| Cruz, (2018). | n/a | No definition, no mention of access to legal information. | "A chatbot is a virtual software program in which the user communicates with a virtual machine that imitates human conversations | Identifies culture as a key determinant of use of legal technology (i.e., chatbots) and the risks of omitting it ("user frustration, perpetuate |

| | | | | |
|---|---|---|---|---|
| | | | through voice and/or text." (Cruz, 2018, p. 364) | implicit biases, compromise users' privacy" (Cruz, 2018, p. 366). |
| Djeffal (2018). | Qualitative case study | No definition, no mention of access to legal information. | No definition, uses the DoNotPay as an example of chatbot | Identifies sustainable development as a guiding framework for research and development of artificial intelligence. DoNotPay is given as an example of successful use of AI to achieve access to justice. |
| Queudot, Charton & Meurs (2020). | Technical | No definition, access to justice is understood as access to legal information. | No definition, understood as a tool that "could support the improvement of access to legal information" (Queudot, Charton, & Meurs, 2020, p. 362). Introduces 3 categories of chatbots: question answering, social, and focused dialog systems. | Proposes two chatbots to provide legal information in two different contexts: one for immigration assistance and one for NBC's employees. Focused on the technical developments of the chatbots, namely experimentation "with an algorithm to learn embeddings in a supervised way" (372, Queudot, Charton, & Meurs 2020). |
| Sossin & Kapoor (2021). | Book chapter | No definition, no mention of access to legal information. | No definition, uses the DoNotPay as an example of chatbot | Identifies DoNotPay as a social innovation which can improve access to justice. |
| Toohey, Moore, Dart & Toohey (2019). | n/a | "Access to justice is a foundational pillar of our society; a promise that | No definition, uses the DoNotPay as an example of chatbot | Identifies examples of technology, namely chatbots, used to improve access to justice and the importance of legal |

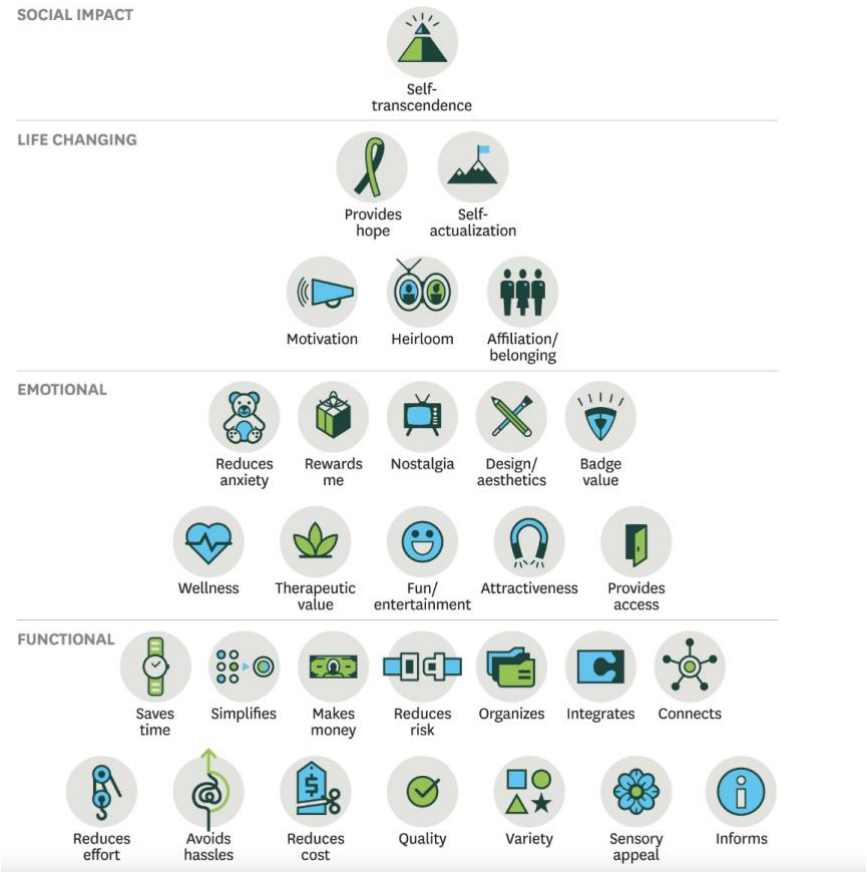
| | | | | |
|---|---|---|---|---|
| | | all who need the assistance of the law should be able to access our courts and other institutions of justice" (Toohey, Moore, Dart et al., 2019, p. 133). | | design which until now has been mostly omitted in the existing literature. |
| Westermann, Walker, Ashley & Benyekhlef (2019). | Technical | No definition, no mention of access to legal information. | No definition, understood as a tool which can "ask a number of questions to determine the tenant's factual situation, and then provide the chatbot user with statistical information about their likelihood of success and averages of awarded damages, as well as displaying previous similar cases" (Westermann, Walker, Ashley & Benyekhlef, 2019, p. 1). | Proposes the JusticeBot as a chatbot which could assist tenants to have an overview of their legal situation and assist them in their decision-making by providing them with solutions based on previous similar cases. Focused on technical developments of the chatbot. |

**Appendix 5: Interviews with JuridiQC**

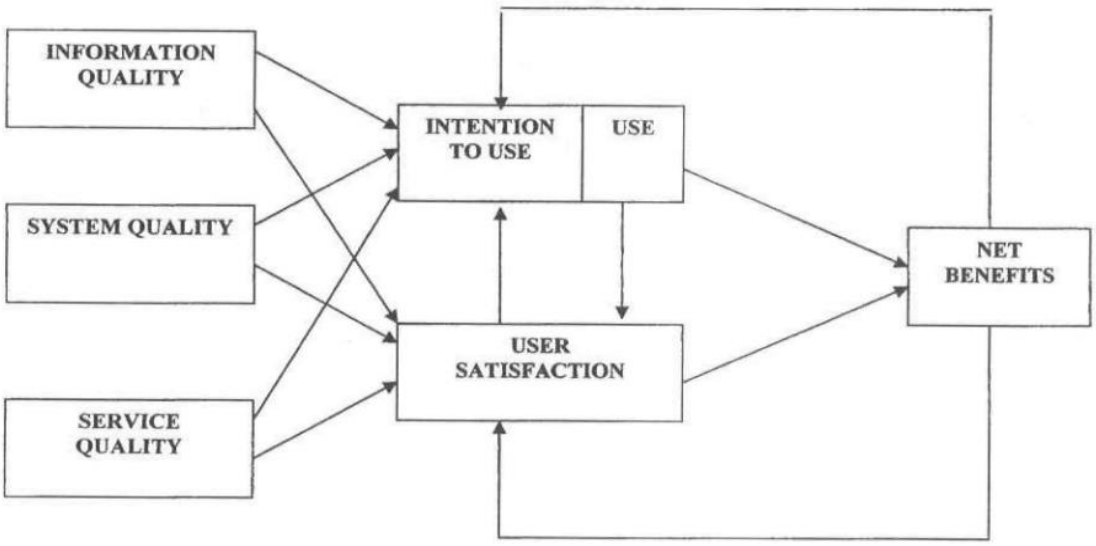
| **Role of the person interviewed** | **Number of interviews** | **Duration (in hours)** |
|---|---|---|

| | | |
|---|---|---|
| Product owner | 2 | 1 |
| UX expert | 1 | 1 |
| Content expert | 1 | 1 |
| JuridiQC project director | 1 | 1 |

## Appendix 6: The B2C Elements of Value (Almquist, Senior, & Bloch, 2016)



**Appendix 7: IS Success Model (Delone & Mclean, 2003)**




**Appendix 8: Summary of values assessed for the chatbot**

| | Simplifies | Reduces risk | Quality | Integrates | Reduces anxiety |
|---|---|---|---|---|---|
| Chatbot level 2 | If the output provided satisfies the user, the same outcome could be achieved with the existing search bar | Incentivising user to share personal information | Output provided fails to redirect the user to a satisfying outcome, the user is left frustrated | Does not integrate coherently on the website | If the output provided satisfies the user, the same outcome could be achieved with the existing search bar which might frustrate the user |
| Chatbot level 3 | // | Incentivising user to share personal information, | If the output provided fails to redirect the user to a | Does not integrate coherently on the website | Could mislead the user into thinking that it can help the user |

| | | | | | |
|---|---|---|---|---|---|
| | | output provided could fall under legal advice | correct outcome, the user is left with an erronated outcome | | seek directly or indirectly legal advice |

HEC MONTRÉAL

**Retrait d’une ou des pages pouvant contenir des renseignements personnels**

HEC MONTRÉAL

| | |
|---|---|
| Signature | Danielle Blondin |

**Résumé du projet de recherche :**

Selon la littérature, les chatbots intelligents peuvent améliorer l'accès à la justice. Cependant, il n'est pas clair dans la littérature comment de tels résultats peuvent être atteints. Par ailleurs, il y a très peu de cas pratiques qui pourraient fournir des données empiriques pour comprendre comment les chatbots intelligents améliorent l'accès à la justice. Considérant ces deux dimensions, ce projet de recherche vise à comprendre si les chatbots intelligents peuvent améliorer l'accès à l'information juridique et quels sont les freins ainsi que les moteurs qu'une organisation peut rencontrer dans leur implémentation.

## Bibliography


Abel, L. K. (2009). Evidence-Based Access to Justice. *U. Pa. JL & Soc. Change*, *13*, 295.

Adami, C. (2021). A brief history of artificial intelligence research. Artificial Life, 27(2), 131-137.

Adamopoulou, E., & Moussiades, L. (2020). Chatbots: History, technology, and applications. *Machine Learning with Applications*, *2*, 100006.

Albiston, C. R., & Sandefur, R. L. (2013). Expanding the empirical study of access to justice. *Wis. L. REv.*, 101.

Alfieri, A. V. (2013). Community Education and access to justice in a time of scarcity: Notes from the West Grove Trolley Garage case. *Wis. L. REv.*, 121.

Almahri, F. A. J., Bell, D., & Merhi, M. (2020, March). Understanding student acceptance and use of chatbots in the United Kingdom universities: a structural equation modelling approach. In *2020 6th International Conference on Information Management (ICIM)* (pp. 284-288). IEEE.

Almquist, Senior, & Bloch (2016). The Elements of Value Measuring—and delivering—what consumers really want. Harvard Business Review. Retrieved August 26, 2022, from https://ellisonchair.tamu.edu/files/2020/06/The-Elements-of-Consumer-Value.pdf

Alsaqqa, S., Sawalha, S., & Abdel-Nabi, H. (2020). Agile Software Development: Methodologies and Trends. In International Journal of Interactive Mobile Technologies (iJIM) (Vol. 14, Issue 11, p. 246). International Association of Online Engineering (IAOE). https://doi.org/10.3991/ijim.v14i11.13269

Andresen, S. L. (2002). John McCarthy: father of AI. IEEE Intelligent Systems, 17(5), 84-85.

Androutsopoulou, A., Karacapilidis, N., Loukis, E., & Charalabidis, Y. (2019). Transforming the communication between citizens and government through AI-guided chatbots. *Government information quarterly*, *36*(2), 358-367.

Anyoha, R. (2020). *The history of Artificial Intelligence*. Science in the News. Retrieved August 16, 2022, from https://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/

Act respecting the Barreau du Québec (2021), CQLR c B-1, art. 128. Retrieved from: https://www.canlii.org/en/qc/laws/stat/cqlr-c-b-1/191736/cqlr-c-b-1.html#sec128_smooth

Bailey, J., Burkell, J., & Reynolds, G. (2013). Access to Justice for All: Towards an Expansive Vision of Justice and Technology. *Windsor YB Access Just.*, *31*, 181.

Baker, J. J. (2018). 2018: a legal research odyssey: artificial intelligence as disruptor. Law Libr. J., 110, 5. https://www.aallnet.org/wp-content/uploads/2018/06/LLJ_110n1_01_baker.pdf

Barendrecht, M. (2011). Legal aid, accessible courts or legal information? Three access to justice strategies compared. *Global Jurist*, *11*(1).

Barreau du Québec (2013). Distinction entre donner un avis ou une opinion juridique et donner une information juridique. Retrieved from : https://associationsquebec.qc.ca/Uploads/avis_opinion.pdf

Bartenberger, M., Galla, S., & Kosak, A. (2018). Legal chatbots.

Bedner, A. W., & Vel, J. A. (2010). An analytical framework for empirical research on Access to Justice. *Law, Social Justice and Global Development Journal*, *15*(1).

Beqiraj, J., McNamara. (2014) International Access to Justice: Barriers and Solutions. Bingham Centre for the Rule of Law Report. International Bar Association.

Beinlich, L. (2021). Access to Justice. *Max Planck Institute for Comparative Public Law & International Law (MPIL) Research Paper*, (2021-20).

Biard, A., Hoevenaars, J., Kramer, X., & Themeli, E. (2021). Introduction: The Future of Access to Justice—Beyond Science Fiction. In *New Pathways to Civil Justice in Europe* (pp. 1-20). Springer, Cham.

Birnbaum, R., & Bala, N. (2021). Ontario's Family Law Limited Scope Services Project: Rhetoric and Realities of the Family Bar Addressing Access to Justice Challenges. *Canadian Family Law Quarterly*, *40*(1), 1-48.

Brandtzaeg, P. B., & Følstad, A. (2017, November). Why people use chatbots. In *International conference on internet science* (pp. 377-392). Springer, Cham.

Brinks, D. M. (2019). Access to what? Legal agency and access to justice for indigenous peoples in Latin America. *The Journal of Development Studies*, *55*(3), 348-365.

Burton-Jones, A., and Grange, C. (2010) . «From Use to Effective Use: A Representation Theory Perspective» *,Information Systems Research* , vol.24 , no 3 ISSN: 1526-5536

Cabral, J. E., Chavan, A., Clarke, T. M., & Greacen, J. (2012). Using technology to enhance access to justice. *Harv. JL & Tech.*, *26*, 241.

Canadian Council on Learning. (2007). *State of learning in Canada: No Time for Complacency*. Retrieved August 26, 2022, from https://www.dartmouthlearning.net/wp-content/uploads/2013/02/State-of-Learning-in-Canada-No-Time-for-Compacency-2007.pdf

Cooper, R. B., & Zmud, R. W. (1990). Information technology implementation research: a technological diffusion approach. *Management science*, *36*(2), 123-139.

Cortes, P. (2018). Using technology and ADR methods to enhance access to justice. *IJODR*, *5*, 103.

Center on International Cooperation (2019). Task Force on Justice, Justice for All – Final Report. available at https://www.justice.sdg16.plus/

Cruz, S. E. (2018). Coding for Cultural Competency: Expanding Access to Justice with Technology. *Tenn. L. Rev.*, *86*, 347.

Djeffal, C. (2018). Sustainable AI Development (SAID): On the road to more access to justice. *Available at SSRN 3298980*.

DoNotPay. (2022). *The World's First Robot Lawyer*. DoNotPay. Retrieved August 26, 2022, from https://donotpay.com/

Dorneanu, L., Malka, J., & Coeckelberghs, L. (2021, September). Impact of COVID-19 on access to justice and documents. In ERA Forum (Vol. 22, No. 3, pp. 407-419). Springer Berlin Heidelberg.

European Union Agency for Fundamental Rights and Council of Europe. (2016). *Handbook on European law relating to access to justice*. Retrieved August 25, 2022, from https://www.echr.coe.int/Documents/Handbook_access_justice_ENG.pdf

Farrow, T. C. (2013). What is access to justice. *Osgoode Hall LJ*, *51*, 957.

Farrow, T. C., & Jacobs, L. A. (Eds.). (2020). *The justice Crisis: The cost and value of accessing law*. UBC Press.

Favalli, S. (2021). The right to free legal aid for migrants for effective access to justice. In *Borders, Migration and Globalization: An Interdisciplinary Perspective* (pp. 163-178). Routledge.

Garth, B. G., Weisner, J., & Koch, K. F. (1978). Access to justice (Vol. 4). M. Cappelletti (Ed.). Sijthoff and Noordhoff.

Gatzioufa, P., & Saprikis, V. (2022). A literature review on users' behavioral intention toward chatbots' adoption. *Applied Computing and Informatics*, (ahead-of-print).
Genn, H. (2012). What is civil justice for-reform, ADR, and access to justice. *Yale JL & Human.*, *24*, 397.

Global Access to Justice Project. (2022). Historical background. https://globalaccesstojustice.com/historical-background/

Hadfield, G. K. (2014). The cost of law: Promoting access to justice through the (un) corporate practice of law. *International Review of Law and Economics*, *38*, 43-63.

Hasal, M., Nowaková, J., Ahmed Saghair, K., Abdulla, H., Snášel, V., & Ogiela, L. (2021).

Chatbots: Security, privacy, data protection, and social aspects. *Concurrency and Computation: Practice and Experience*, *33*(19), e6426.

Hurder, A. J. (1998). Nonlawyer Legal Assistance and Access to Justice. *Fordham L. Rev.*, *67*, 2241.

ITU. (2018). *United Nations activities on Artificial Intelligence (AI)*. Retrieved August 31, 2022, from https://www.itu.int/dms_pub/itu-s/opb/gen/S-GEN-UNACT-2018-1-PDF-E.pdf

Jassal, N. (2020). Gender, law enforcement, and access to justice: Evidence from all-women police stations in India. *American Political Science Review*, *114*(4), 1035-1054.

JuridiQC. (2022). JuridiQC. Retrieved August 26, 2022, from https://juridiqc.gouv.qc.ca/en/

Kalajdzic, J. (2018). *Class actions in Canada: The promise and reality of access to justice*. UBC Press.

Kasilingam, D. L. (2020). Understanding the attitude and intention to use smartphone chatbots for shopping. *Technology in Society*, *62*, 101280.

Kauffman, M. E., & Soares, M. N. (2020). AI in legal services: new trends in AI-enabled legal services. *Service Oriented Computing and Applications*, *14*(4), 223-226.

Khamis, A., Li, H., Prestes, E., & Haidegger, T. (2019). AI: a key enabler of sustainable development goals, part 1 [industry activities]. *IEEE Robotics & Automation Magazine*, *26*(3), 95-102.

Khan, R., & Das, A. (2018). Introduction to chatbots. In *Build better chatbots* (pp. 1-11). Apress, Berkeley, CA.

Kunkel, R. (2018). Rationing justice in the 21st century: technocracy and technology in the access to justice movement. *U. Md. LJ Race, Religion, Gender & Class*, *18*, 366.

*La Littératie*. Fondation pour l'alphabétisation. (2021). Retrieved August 26, 2022, from https://fondationalphabetisation.org/lanalphabetisme/tout-sur-lanalphabetisme/la-litteratie/

Laird, K. (2021). The" Digital Transformation" at Tribunals Ontario: The Impact on Access to Justice. *Canadian Journal of Administrative Law & Practice*, *34*(2), 141-165.

Lee, K.-F. (2018). *Ai Super-Powers: China, Silicon Valley and the New Order*.

Luoma, S. (2018). Artificial Intelligence Improving the Delivery of Justice and How Courts Operate. *How Will AI Shape the Future of Law?*, 63.

Marchiori, T. (2015). A Framework for Measuring Access to Justice Including Specific Challenges Facing Women. *UN Women. Council of Europe*.

Mehr, H., Ash, H., & Fellow, D. (2017). Artificial intelligence for citizen services and government. *Ash Cent. Democr. Gov. Innov. Harvard Kennedy Sch., no. August*, 1-12.

Fink, M. (2021) "The EU Artificial Intelligence Act and Access to Justice", EU Law Live.

Mhlanga, D. (2022). Human-Centered Artificial Intelligence: The Superlative Approach to Achieve Sustainable Development Goals in the Fourth Industrial Revolution. *Sustainability*, *14*(13), 7804. MDPI AG. Retrieved from http://dx.doi.org/10.3390/su14137804.

Michael L. Littman, Ifeoma Ajunwa, Guy Berger, Craig Boutilier, Morgan Currie, Finale Doshi-Velez, Gillian Hadfield, Michael C. Horowitz, Charles Isbell, Hiroaki Kitano, Karen Levy, Terah Lyons, Melanie Mitchell, Julie Shah, Steven Sloman, Shannon Vallor, and Toby Walsh. (2021). Gathering Strength, Gathering Storms: The One Hundred Year Study on Artificial Intelligence (AI100) 2021 Study Panel Report. Stanford University, Stanford, CA. Doc: http://ai100.stanford.edu/2021-report. Accessed: August 25, 2021.

Mitchell, W., Byrnes, A., Bergman, A., & Peisah, C. (2021). The human right to justice for older persons with mental health conditions. *The American Journal of Geriatric Psychiatry*, *29*(10), 1027-1032.

Nichol, A. (2021, August 19). *5 levels of Conversational AI - 2020 update*. Rasa. Retrieved August 26, 2022, from https://rasa.com/blog/5-levels-of-conversational-ai-2020-update/

Noone, M. A., & Ojelabi, L. A. (2020). Alternative dispute resolution and access to justice in Australia. *International Journal of Law in Context*, *16*(2), 108-127.

OECD. (2016). *Leveraging the SDGs for inclusive growth: delivering access to justice for all*. Retrieved from https://www.oecd.org/gov/delivering-access-to-justice-for-all.pdf

Ojelabi, L. A., & Gutman, J. (2020). Family dispute resolution and access to justice in Australia. *International Journal of Law in Context*, *16*(2), 197-215.

Open Government Partnership Global Report. (2019). *Access to Justice*. Open Government Partnership. Retrieved August 25, 2022, from https://www.opengovpartnership.org/

Ossewaarde, M., & Gulenc, E. (2020). National varieties of artificial intelligence discourses: Myth, utopianism, and solutionism in West European policy expectations. *Computer*, *53*(11), 53-61.

Pérez, J. Q., Daradoumis, T., & Puig, J. M. M. (2020). Rediscovering the use of chatbots in education: A systematic literature review. *Computer Applications in Engineering Education*, *28*(6), 1549-1565.

Phelps, K. M. (2010). Broadening access to justice in Nevada by defining the practice of law. *Nev. LJ*, *11*, 224.

Posner, R. A. (1997). Rational choice, behavioral economics, and the law. *Stan. L. Rev.*, *50*, 1551.

Pruitt, L. R., & Showman, B. E. (2014). Law stretched thin: Access to justice in rural America. *SDL Rev.*, *59*, 466.

Pruitt, L. R., Kool, A. L., Sudeall, L., Statz, M., Conway, D. M., & Haksgaard, H. (2018). Legal deserts: A multi-state perspective on rural access to justice." *HARv. L. & PoL'Y REv.* 13 (2018): 15.

Putrijanti, A., & Wibawa, K. C. S. (2021). The Implementation of E-Court in Administrative Court to Develop Access to Justice in Indonesia. *Journal of Environmental Treatment Techniques*, *9*(1), 105-109.

Queudot, M., Charton, É., & Meurs, M. J. (2020). Improving access to justice with legal chatbots. *Stats*, *3*(3), 356-375.

Raymond, A. H., & Shackelford, S. J. (2013). Technology, ethics, and access to justice: should an algorithm be deciding your case. Mich. J. Int'l L., 35, 485.

Revang, Mullen, Elliot (2022). Magic Quadrant for Enterprise Conversational AI Platforms. Gartner.

Rhode, D. L. (2004). *Access to justice*. Oxford University Press.

Rhode, D. L. (2012). Access to justice: an agenda for legal education and research. *J. Legal Educ.*, *62*, 531.

Rogers, C. T. (2015). Access to justice: new approaches to ensure meaningful participation. *NYUL Rev.*, *90*, 1447.

Ryan, F. (2021). Delivering legal services without lawyers. In *Digital Lawyering* (pp. 102-135). Routledge.

Sandefur, R. L. (2019). Access to what?. *Daedalus*, *148*(1), 49-55.
Selita, F. (2019). Improving access to justice: community-based solutions. *Asian Journal of Legal Education*, *6*(1-2), 83-90.

Sossin, L., & Kapoor, D. (2021). Social Enterprise, Social Innovation, and Access to Justice. In *The Justice Crisis: the Cost and Value of Accessing Law*.

Statz, M., Friday, R., & Bredeson, J. (2020). " They Had Access, but They Didn't Get Justice": Why Prevailing Access to Justice Initiatives Fail Rural Americans. *Geo. J. on Poverty L. & Pol'y*, *28*, 321.
Szczepanska, J., & Blomkamp, E. (2020). Seeking legal help online: understanding the'missing majority'.

Statista (2022). Leading websites in Canada in November 2021, by total visits. Retrieved from: https://www.statista.com/statistics/1047699/canada-websites-ranking-by-average-monthly-traffic/

Sullivan, D. (2018, January). A reintroduction to Google's featured snippets. The Keyword. Google. Retrieved from: https://blog.google/products/search/reintroduction-googles-featured-snippets/

Standford Legal Design Lab. (2022). A Better Legal Internet. Retrieved from: https://betterinternet.law.stanford.edu/

Tan, H. (2017, September). A brief history and technical review of the expert system research. In *IOP Conference Series: Materials Science and Engineering* (Vol. 242, No. 1, p. 012111). IOP Publishing.

Toohey, L., Moore, M., Dart, K., & Toohey, D. (2019). Meeting the access to civil justice challenge: Digital inclusion, algorithmic justice, and human-centred design. *Macquarie Law Journal*, *19*(Nov 2019), 133-156.

UNDP. (2004). *Access to Justice*. Retrieved August 25, 2022, from https://www.un.org/ruleoflaw/files/Access%20to%20Justice_Practice%20Note.pdf

Vinuesa, R., Azizpour, H., Leite, I., Balaam, M., Dignum, V., Domisch, S., ... & Fuso Nerini, F. (2020). The role of artificial intelligence in achieving the Sustainable Development Goals. *Nature communications*, *11*(1), 1-10.

Westermann, H., Walker, V. R., Ashley, K. D., & Benyekhlef, K. (2019, June). Using factors to predict and analyze landlord-tenant decisions to increase access to justice. In *Proceedings of the Seventeenth International Conference on Artificial Intelligence and Law* (pp. 133-142).

Winters, M. S., & Conroy-Krutz, J. (2021). Preferences for traditional and formal sector justice institutions to address land disputes in rural Mali. *World Development*, *142*, 105452.

Women, U.N. (2016). Guidance Note Framework For Measuring Access To Justice Including Specific Challenges Facing Women.

Wyatt, S. (2008). Technological Determinism Is Dead; Long Live Technological Determinism. In *The Handbook of Science and Technology Studies* (Third Edition, pp. 165–180). essay, Massachusetts Institute of Technology. https://www.dhi.ac.uk/san/waysofbeing/data/data-crone-wyatt-2007b.pdf#page=181

Yin, E. T., Korankye-Sakyi, F., & Atupare, P. A. (2021). Prisoners' Access to Justice: Family Support, Prison Legal Education, and Court Proceedings. *J. Pol. & L.*, *14*, 113.

Zamora, Jennifer (2017). [ACM Press the 5th International Conference - Bielefeld, Germany (2017.10.17-2017.10.20)] Proceedings of the 5th International Conference on Human Agent Interaction - HAI '17 - I'm Sorry, Dave, I'm Afraid I Can't Do That. , (), 253–260. doi:10.1145/3125739.3125766

Zimerman, N., & Tyler, T. R. (2010). Between access to counsel and access to justice: A psychological perspective. *Fordham Urb. LJ*, *37*, 473.

Zlate, N. (2022, March). Chatbots, Future Undercover Investigators in the Criminal Process in the Artificial Intelligence Era?. In *Proceedings of the 26th International RAIS Conference on Social Sciences and Humanities* (pp. 118-125). Scientia Moralitas Research Institute.

Yang, J., Chesbrough, H., & Hurmelinna-Laukkanen, P. (2022). How to appropriate value from general-purpose technology by applying open innovation. California Management Review, 64(3), 24-48.

Zumstein, D., & Hundertmark, S. (2017, October). Communicating and transacting with chatbots: insights from public transport. In *International Conferences WWW/Internet and Applied Computing*.