



Beyond Physical Accessibility: Legal Barriers to Digital Ticketing Systems for Visually Impaired Commuters

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ABSTRACT

While transportation digitalization offers benefits to most users, visually impaired individuals face significant challenges due to unfriendly application designs and regulations that do not facilitate comprehensive digital access. Digital ticketing systems are often incompatible with screen-reading devices, lack voice capabilities, and lack regard for universal design principles. This research aims to identify existing legal barriers to digital ticketing systems for visually impaired passengers and how policies and laws may influence the implementation of accessibility in digital ticketing systems. This study focuses on the legal aspects and imperfections in regulatory implementation, rather than solely on the technical limitations often discussed in previous studies. The method used is normative juridical by conducting legal text analysis and using regulations as the main data to assess the suitability and effectiveness of their implementation in practice. The results indicate that although national law guarantees the right to accessibility, its implementation in digital ticketing services remains inadequate, both in terms of technical regulations, oversight, and sanctions for service providers who fail to comply. Digital accessibility standardization, increased technical understanding of service providers, and affirmative policy support to make transportation systems more user-friendly for people with disabilities, especially the visually impaired are required.

INTRODUCTION

Person with disabilities disability is those who need strengthened with fulfilled rights they as person with disabilities. However, in reality people with disabilities still stigmatized as imperfection, alienating people with it disability in the middle society. Rights basic from person with disabilities disability still not yet get fair and favorable treatment often underestimated. In other words, many people with disabilities disability feel accept discrimination to fulfillment rights they, especially in transportation general. Facilities transportation as form service public should also provide friendly service for all public specifically for people with disabilities perceived disability still very minimal from side service. Guarantee position law and rights basic man for person with disabilities disability has arranged in Article 28 H of the 1945 Constitution (UUD) which regulates about rights citizens concerned with life prosperous, located residence, environment life, and guarantee social as well as

ensure right on service health and protection right owned by personal and rights owned by the no may taken over in a way arbitrarily by anyone.

As we know, according to the Central Statistics Agency (BPS), the number of people who experience in 2020, the number of people with disabilities in Indonesia reached 22.5 million. Meanwhile, that, Survey The 2020 National Economic Survey (Susenas) recorded number as many as 28.05 million people. This figure Of course just enough big, and because That government has publish various policies and regulations related person with disabilities in Indonesia¹. People with disabilities disability blind often own obstacle moment access digital services. This is seen from the needs data tools that have not been fulfilled by the person with disability as following:

Table 1.
Data on Unmet Needs of People with Disabilities

Health problems	Tools Needed	% Need No Fulfilled
Vision	Glasses	80%
	Stick For Blind	28%
Hearing	Hearing Aids	91%
Speech	Sign language	54%
Arms and Fingers	Prosthetics	60%
	Prosthetics	75%
Feet (Walking)	Chair Wheel	24%
	Walking Aids	28%

Source/s: Cameron and Suarez, 2017, calculation using 2006 Susenas data.

Limitations in design applications that do not friendly to reader screen, lack of audio description, and the use of visual captchas without alternative audio become a number of obstacles that must be overcome faced. This is cause imbalance access to service the public that should inclusive. Therefore that's important for develop inclusive and supportive policies innovation in system transportation general so that it can fulfil need all layer public without except.

Based on rule legislation as stated in article 2 of the Law Number 8 of 2016 concerning person with disabilities disability also mentioned that implementation and fulfillment right person with disabilities disability based on: a. Respect to dignity; b. autonomy individual; c. without discrimination; d. participation full; e. diversity humans and humanity; f. equality opportunity; g. equality; h. accessibility; i. continuous capacity development and identity child; j. inclusive; and k. treatment special and protection more. With thus based on principle or principle on show that person with disabilities disability should get equal opportunity in effort develop himself through independence as dignified human being is one of them get convenience in access transportation general.

¹Humas BRIN, BRIN Teliti Peningkatan Mobilitas Penyandang Disabilitas melalui Fasilitas Transportasi Publik yang Inklusif, 2023, <https://www.brin.go.id/news/113824/brin-teliti-peningkatan-mobilitas-penyandang-disabilitas-melalui-fasilitas-transportasi-publik-yang-inklusif>.

Transportation general is one of the aspect important in mobility society, including for person with disabilities disabilities, such as blind. Transportation become very means important as support activity communities in the area both in the city big. With presence technology very influence from development transportation moment this, thing This bring up change from means and infrastructure that aims for make things easier public in reach transportation said. Digital transformation has change how people use transportation common throughout the world. Starting from use tickets electronics on trains and buses, up to the emergence of rental platforms vehicle like Gojek, Grab, Uber, and others, the digitalization process give convenience as well as practicality new for inhabitant city. System digital tickets allow users for buy, pay, and access service transportation only past application mobile phones. In Indonesia, digitalization in transportation become focus main policy government, especially in development city smart and service a more modern public².

In the era of digitalization moment this, development technology very much make things easier lots aspect life including system transportation. One of the changes that occur is transition system tickets from form physique going digital. Although can it is said that progress of the times can give comfort and efficiency for many people, but transformation this it turns out bring up challenge big for groups certain especially person with disabilities disability. One of the the most influential group with change system digital tickets are blind. In study here we focus on obstacles the laws that exist within system digital tickets for passenger blind, with highlight the gap that occurs between accessibility physical and digital. Accessibility transportation general has recognized globally as fundamental rights of person with disabilities disability. After the approval of the historic United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) by the United Nations General Assembly on December 13, 2006, the state parties were required to put in place several equal access measures, including physical environment, transportation, information and communication technologies, and other public amenities and services in urban and rural regions, to guarantee the complete independence of disabled people in all facets of life³. The UN Convention on Right Person with disabilities Disability (CRPD) 2006 which has ratified by the Republic of Indonesia through Law No. 19 of 2011, p firm state state obligation to ensure accessibility full in service transportation. However its implementation in developing countries Still face various challenge.

Implementation system digital tickets such as mobile applications and payments without contact matter This clear make it easier and provide efficiency for users. However with existence transformation this also gives rise to challenge new related inclusivity, especially for group vulnerable. In implementation system digital tickets often face obstacle laws that prevent accessibility for passenger person with disabilities disability blind. Obstacles This covers lack of supporting regulations provision friendly service to disabilities, as well as challenge in ensure that technology used can accessible with easy for everyone users, including those who have limitations vision.

² Kominfo RI. "Laporan Transformasi Digital Nasional", 2022.

³ Meshal Almoshaogeh, et al. "A Review on Disability-Inclusive Public Transportation: Current Barriers and Prospects". *IEEE Access*, Vol 13 (2025):75769-75786.<https://doi.org/10.1109/Access.2025.3564225>.

Problem about accessibility physique for person with disabilities disability including blind has long been material interesting topic in various field including transportation, education, and employment. In many countries, both in policy public and practice has give effort for ensure that facility physique can accessible to everyone though let go from side limitations his physical appearance. However thus with existence development of the times challenges new appear when the system used depend on digital technology. One of the for example is system tickets current transportation has switch to digital format via application or website.

Implementation digital technology in system tickets give various convenience, such as booking tickets online and system more payments fast and efficient. However, for passenger blind, transition this present problem serious. Many applications and systems digital tickets that have not been designed with notice need accessibility for users blind people, such as inability application for work with reader screen or no existence instruction adequate sound. This is impact on ability they for get tickets and do journey in a way independent, which is right base they in access transportation public.

In a way special, system digital tickets have potential make things worse inequality access for passenger blind people, who have face various challenge big in interact with the physical world, let alone the digital world which often no inclusive. Although there is various effort from lots party for overcome problem this, still lots existing obstacles, both from aspect technology, policy, and applicable regulations. In Indonesia, people with disabilities visual disabilities face obstacle double in access transportation general. BPS data (2022) shows there is around 2.38 million person with disabilities blind people in Indonesia who face difficulty mobility. Study previously by Setiawan et al⁴ disclose that 73% of people with visual disabilities in Jakarta are experiencing difficulty use transportation general in a way independent.

One of obstacle main is laws and policies that do not enough responsive to need digital accessibility. Many countries, including Indonesia, have laws that regulate rights person with disabilities disabilities, such as Law no. 8 of 2016 concerning Person with disabilities Disability, which requires provider service general for provide facilities that can be accessible to everyone. However, the implementation of policy This often no take into account digital aspects with enough adequate. Transition system transportation to digital format without existence clear regulations about obligation accessibility for person with disabilities disability cause passenger blind neglected.

With existence progress technology this No felt the same for all group society. people with disabilities, especially the blind, face difficulty big in get digital ticket. Application tickets usually designed with visual display, buttons small, or feature like CAPTCHA that doesn't Can accessed by a screen reader or other tools. According to Arshad's research, users blind people in Oslo and Amsterdam experience difficulty access tickets because no the presence of sound output or bait come back haptic⁵. In Indonesia, the use of e-ticketing has common in various type transportation such as KRL Commuter Line, MRT Jakarta, Trans Jakarta, and application service online taxis.

⁴Ediyanto, Ediyanto, et al. "Implementation of inclusive education in learning process at senior high school Malang City, Indonesia." *Indonesian Journal of Disability Studies* 8, no. 1 (2021): 179-189.

⁵Arshad, N. *Universal Design in Public Transport Ticketing Systems: A Case Study in Oslo and Amsterdam*. OsloMet, (2020).

However, unfortunately the systems the part big Not yet fully friendly for users with limitations vision. According to study from the Indonesian Digital Accessibility Institute in 2023, only 2 out of 10 applications digital transportation in Indonesia that can used in a way full of readers screen. With thus phenomenon this leading to inequality in experience digital accessibility for person with disabilities disability. Barriers this no only nature technical, but also related with policies and laws that do not capable balance development rapidly technology. Often, the system laws and policies more focus on aspects physical, while digital accessibility is considered not enough important. This is create big gap in provision inclusive and equitable services for everyone, including blind.

Study previously about digital accessibility for person with disabilities disability already enough lots done, but part big study this more focus on the problem accessibility in a way general and not in a way specific identify obstacle existing laws. As example, research by Smith et al regarding accessibility application transportation for person with disabilities disability show that although lots applications that provide feature accessibility, still there is applications that do not compatible with assistive technologies such as reader screen⁶. However, research this no discuss problem related laws with implementation system digital ticket.

Furthermore, based on research by Jones and Wendt revealed lack of attention to regulations that require provider application transportation for fulfil standard accessibility⁷. They find that although some countries already emit regulation about digital accessibility, its implementation still very varied, and many developer applications that do not fulfil standard said. Research this show that although There is a number of progress, existing policies and regulations still very limited in protect rights person with disabilities disability in digital context.

Constraint technical This in a way direct obstruct person with disabilities disabilities, especially blind, in use transportation general. According to data from the Ministry of Social Affairs, there are approximately 3 million people with disabilities disability vision in Indonesia. If the system provided no inclusive, then millions limited citizens in get right for move free. This is is form discrimination that is not direct and not yet Lots discussed in a way systematic in policy public⁸. Further research focus on the system digital tickets for passenger blind still very rare. Existing research more lots discuss challenge common problems faced person with disabilities disability, without discuss in a way deep problem laws and policies that hinder access they. As for example, research conducted by Liu and Zhang shows that although lots applications that have been start adopt feature accessibility, such as text alternative or arrangement sound, still Lots applications that do not friendly for person with disabilities visual disabilities⁹. However, they No discuss aspect the law that causes problem this keep going continues.

⁶ Smith, J., et al. "Accessibility of Transportation Apps for People with Disabilities". *Journal of Transportation Research*, 45 no 2 (2019): 56–70.

⁷ Jones, M., and Wendt, K. "Legal Frameworks and Accessibility in Digital Transportation Services." *Disability and Technology*, 34 no 4 (2021): 205-220.

⁸ Dillahunt, T. R., and Veinot, T. C. "Getting there: Barriers and Facilitators to Transportation". Access in *Underserved Communities*. ACM TOCHI, 2018.

⁹ Liu, Z., and Zhang, J. "Visual Impairment and Digital Accessibility: Challenges in Transportation Systems." *Journal of Disability Studies*, 21 no 1 (2020): 9–22.

Study this aim for fill in gap in literature with focus on obstacles existing laws to system digital tickets for passenger blind people. Research this not only will analyze obstacle technical and social issues faced by passengers blind, but also identify How policies and laws can influence implementation accessibility in system digital tickets. Research this will also discuss steps that can be taken taken for overcome problem this, okay from side regulation law and innovation technology.

Through study this, it is hoped can found more solutions effective for overcome obstacles faced by passengers blind in use system digital tickets. Research this also aims for give more insight in about how policies and laws can play a role in push inclusivity and accessibility in the digital world, especially in system transportation. In general overall, research This expected can give contribution to development knowledge knowledge, especially in field law, policy public and technology accessibility.

Objective main study this is for dig obstacle existing laws in system digital tickets for passenger blind and provide recommendation for repair system so that more inclusive. Research this also aims for contribute to the creation of more policies responsive to need digital accessibility for person with disabilities disability. With Thus, the benefits from study this expected can increase quality life person with disabilities disabilities, in particular blind, and encourage creation a more diverse society inclusive and fair. Therefore that, it is necessary done thorough analysis to system law and application digital accessibility in transportation, especially in the system purchase tickets digitally. Research this will help understand how much good law in Indonesia is capable ensure presence blind in the digital world, as well as how future policies should handle need group prone to in a way fair and proper. Based on the background above, the problems that will be discussed in this article are: 1) How implementation Law no. 8 of 2016 concerning person with disabilities disability in system digital transportation tickets general? 2) What obstacle legal and technical issues faced blind in access service digital tickets?

METHODS

The issue discussed in this research is examined and analyzed using the legal normative research method. Legal normative research means using an approach that involves looking at theories, concepts, and studying relevant laws and regulations related to this research, or using a legal framework approach. Legal normative research is a type of legal study that treats law as a system of norms. This system of norms includes principles, rules, and doctrines found in legislation, agreements, and academic teachings¹⁰. This type of research focuses on the structure of law, aiming primarily to identify the meanings and foundational elements of law. The main focus of this approach is to analyze the existing laws and regulations related to digital accessibility for people with disabilities, especially the visually impaired, in the context of digital public transportation ticketing systems. This is done by conducting legal text analysis and using regulations as the main data to assess the suitability and effectiveness of their implementation in practice.

¹⁰ Bambang Sunggono, *Metodologi Penelitian Hukum*, Jakarta: Raja Grafindo Persada, 2016, p. 93.

DISCUSSION

Implementation Law No. 8 Of 2016 Concerning Person with Disabilities Disability in System Digital Transportation Tickets General

The Government of the Republic of Indonesia as stated in Article IV of the 1945 Constitution states as follows: The state protects the entire territory of Indonesia and all the bloodshed of the Indonesian people, promotes general welfare, educates the people's lives, and participates in realizing a world order based on freedom, eternal peace, and justice for the people¹¹. Therefore, Indonesia is a country that has the right to prosper its people, so the government has the duty and responsibility to create welfare and protect its citizens. For realize objective and run it task government in accordance with Pancasila and the 1945 UUDNRI, the state provides guidelines in various aspect life, such as society, nation and state¹². This in line with the concept of the welfare state (*Welfare State*) which means as a system government for which the state is responsible for ensure welfare citizens, government own role active in provide various service social and services public, such as health, education, housing, transportation and security social for ensure its citizens can life worthy. The country does not only play a role as guard security and order but also as provider service social and protection for inhabitant his country. Purpose mainly is reduce gap social and ensure that all citizens regardless from background behind they have access to service equal basis and opportunity.

Based on article 28D Paragraph (1) of the 1945 Constitution states that "Everyone must own right on recognition, guarantee, protection, and certainty just law as well as equal treatment in front of law". Protection the law given to every citizens do not differentiate based on condition physique or social status, but rather all treated the same and have equal rights. This is is one of the right basic humans who must recognized and protected in accordance with principle equality in the face law¹³. Organization international namely the UN also held a conventions that aim for respect, fulfill, and protect right person with disabilities disability. Convention this called *Convention on the Rights of Persons with Disabilities* (CRPD) and is part from international human rights instruments. Objectives from convention this is so that the person with the disability own rights the same basis with other people. Besides that, convention this is also used as tool for build a more diverse society value dignity and worth self every individual.

For fulfil rights person with disabilities disability in accordance with the CRPD, Indonesia has ratify and ratify regulation new in the form of Constitution Number 8 of 2016 concerning person with disabilities disability. According to constitution this, the sufferer disability is someone who experiences limitations physical, intellectual, mental, and/ or sensory in a way term long, so that experience obstacle in interact and not can participate full and effective in environment around

¹¹ Kasmawati, Andi, Manan Sailan, and Bakhtiar. "Government Policies in Implementing Social Welfare for National Development." *KnE Social Sciences* (2024). <https://doi.org/10.18502/kss.v9i2.14828>.

¹² Jimly Asshiddiqie, *Konstitusi Bernegara (Praxis Kenegaraan Bermartabat dan Demokratis)*, Cetakan ke-2, Malang: Setara Press, 2016, p. 10.

¹³ Yoshi Pins Yolando and Aji Wibowo, "Perlindungan Hukum terhadap Penumpang Penyandang Disabilitas dalam Aksesibilitas Transportasi Publik pada Bus Trans Metro Bandung", *Jurnal Hukum Adigama*, 3 no. 1 (2020): 25-45.

based on principle similarities rights¹⁴. Every citizens have equal rights, equal opportunities, and equal position in front of law¹⁵. Persons with disabilities disabilities also have equal rights and obligations like other citizens, without There is difference whatever. As part from Indonesian nation, people with disabilities disability entitled get treatment special. This is is effort protection to vulnerability to action discrimination, as well as effort maximum in give respect, advancement, protection and fulfillment right basic human beings¹⁶. Based on Law no. 8 of 2016 concerning Person with disabilities Disability aim for ensure equal rights for person with disabilities disability in various fields, including in get access service public. Law This confirm that person with disabilities disability entitled for get equal service across various sector, one of them is in transportation general. At present, the sector transportation general start switch to system digital tickets, so that implementation Constitution This in context digital ticket required analyzed from perspective regulations, technology, and implementation in the field.

Law no. 8 of 2016 became base important laws for person with disabilities disabilities in Indonesia, because set rights base they in various sector life. Law No. 8 of 2016 concerning Person with disabilities Disability emphasize importance accessibility in service public, including non-physical like digital technology (Articles 26, 27, and 46). However, the regulations the descendants that regulate standard technical digital accessibility is still not yet adequate or not yet effective implemented. Related articles with accessibility become very crucial, especially Article 3 which stipulates obligations of the state and society for provide supporting facilities for person with disabilities disability. One of the regulated sectors is transportation general, where Article 46 mandates that person with disabilities disability entitled get accessibility good in a way physique both physical and non-physical, including in use technology friendly information for they. However unfortunately, the framework law in Indonesia is still dominant access-oriented physical, not digital access. Law no. 8 of 2016 concerning person with disabilities disability of course load provision about accessibility technology information (Article 17 and Article 138), however No describe in a way specific about must digital accessibility in service transportation *online*. Meanwhile regulations sectoral like Minister of Transportation Regulation No. 98 of 2017 only arrange facility physical, such as *ramp* and *guiding block*, without touch digital systems such as application ticket.

Implementation real from Law no. 8 of 2016 in sector transportation general can seen in use system digital tickets. However, accessibility digital tickets for person with disabilities disabilities, in particular blind, become challenge big, because Lots application digital tickets that are not designed with principle appropriate accessibility with constitution this. Although Law no. 8 of 2016 requires it provider service public for ensure accessibility for person with disabilities disabilities, in fact, many system digital tickets that are not friendly to users blind. With existence digitalization system tickets should can give convenience, but in fact No always inclusive for users blind. Many applications Not yet comply principle accessibility as mandated Constitution this. Service public digitally based as it

¹⁴ Anonim, "Definisi Penyandang Disabilitas". <https://kemosos.go.id/search>, 13 September 2018, p. 1.

¹⁵ Pipih Sopiah, *Demokrasi di Indonesia*, Jakarta: Nobel Edumedia, 2010, p. 6.

¹⁶ Majda Muhtaj, *Dimensi-Dimensi Ham mengurai Hak Ekonomi, Sosial dan Budaya*, Jakarta: Raja Grafindo Persada, 2008, p. 273.

should be fulfil need users disability, but in in practice still lots a system that does not compatible with technology assistive.

Digital technology should simplify the ordering process tickets, however for person with disabilities disabilities, especially blind, technology This precisely often become barrier. According to research by Bigham et al, persons with visual disabilities often difficulty access information from digital interface that is not consider use assistive technologies such as reader screen¹⁷. Although a number of application digital ticket try provide feature accessibility, often a feature this no executed with consistent or no fulfil standard necessary accessibility. Therefore that, the need the need standard accessibility in technology. One of the lack main in system digital tickets are not yet existence standardization clear accessibility. In developed countries like the United States, there are rule laws that require provider digital services for follow standard accessibility certain, such as *Web Content Accessibility Guidelines (WCAG)*. In Indonesia, although Law no. 8 of 2016 has give base strong law for accessibility, implementation standard digital accessibility in system tickets transportation general still minimal. Many applications digital tickets that have not been designed for work with good with reader screen or no provide text alternative for image used in application.

One of challenge main in implementation Law no. 8 of 2016 is lack of supervision and enforcement effective law. Although constitution this give base clear laws for right person with disabilities disability, implementation in the field often not in accordance with hope. Lack of strict supervision to provider service transportation general in apply digital accessibility causes lots system digital tickets that are still no friendly for person with disabilities disability. Obstacles technical this impact directly to fulfillment right person with disabilities disabilities, in particular blind, in access transportation public. Based on data from the Ministry of Social Affairs, there are around 3 million person with disabilities disability vision in Indonesia. Failure provide an inclusive system means millions citizens are hindered from right mobility. This is is form discrimination no directly that has not been lots lifted in a way systematic in policy public¹⁸. This is result in gap between provision in laws and reality on the ground, where people disabilities, in particular blind, difficulty in access service transportation.

Provider service transportation, whether managed by the party private and government, has not quite enough answer for understand and implement principles digital accessibility in system tickets them. However, according to Smith et al.'s research, many provider services that have not been fully understand importance friendly design accessibility or not enough get adequate training about matter this. Condition this cause lots applications that do not designed with friendly interface for person with disabilities disabilities, especially blind¹⁹. Provider service often face problem financial in implement system fully digital ticket friendly for person with disabilities disability. According to Raghavendra et al, although lots applications that have potential for provide feature accessibility,

¹⁷Bigham, J.P., et al. "Nearly real-time answers to visual questions." *Proceedings of the 23rd annual ACM symposium on User interface software and technology*, (2010): 333–342.

¹⁸Dillahunt, T. R., and Veinot, T. C. "Getting there: Barriers and Facilitators to Transportation". Access in *Underserved Communities*. ACM TOCHI, (2018).

¹⁹Smith, L., Cross, E., and Jones, M. "Accessibility of digital ticketing systems in public transport: Perspectives from users with visual impairments." *Journal of Transport & Health*, 13 (2019): 174–185.

development and implementation feature this need cost large and significant investment. The reason²⁰ this often become obstacle for lots provider service for ensure that system digital tickets can accessible to people with disabilities disability. Therefore that's important for create incentive or support financially possible provider service develop system more tickets inclusive.

Obstacle Legal and Technical Issues Faced Blind in Access Service Digital Tickets

Although Law no. 8 of 2016 regulates obligation for provide accessibility for person with disabilities disability, policy the often not in accordance with development rapidly in technology. Many policies are only covers aspect physique or manual without enter consideration about digital accessibility in comprehensive . Need noted that this digital barrier no only technical, but rather legal and structural. One of the obstacle the main technical is design interface application digital tickets that are not compatible with reader screen. Application often use element graphic without textual labels (*alt text*), *drop-down* menu complex, and structure difficult navigation users visually impaired. *Web Content Accessibility Guidelines* (WCAG) are standard international for ensure website accessibility. Many applications digital tickets no comply with WCAG 2.1, especially principle "*Perceivable*" and "*Operable*", which have an impact directly to the disability blind in navigate system²¹.

In the context of digital ticketing systems, platform operators have obligations as Electronic System Providers (ESPs) and therefore bear legal, technical, and ethical responsibilities. This responsibility extends beyond providing services to ensure everyone has access, feels safe, is accountable, and is non-discriminatory. First, from a legal liability perspective, eSPs are required to ensure their systems comply with applicable laws, including accessibility requirements as stipulated in Law Number 8 of 2016 and international standards such as the CRPD. This means ensuring that digital interfaces are usable by people with disabilities, particularly by adhering to the Web Content Accessibility Guidelines (WCAG), which are internationally recognized as the gold standard for inclusive digital design.

Second, providers are required to manage data effectively, including collecting, processing, storing, and protecting legitimate user data. Within comparable frameworks such as the General Data Protection Regulation (GDPR), service providers are required to maintain transparency, obtain proper consent, and ensure data is used sufficiently and only for the specified purposes. If they fail to take these measures, service providers may be held legally liable for improper use or violation of personal data²². Third, they must exercise due care and responsibility in designing their platforms. Digital service providers are required to adopt a "friendly design and default standards" approach, incorporating accessibility and privacy into their system structure from the outset. This includes the ability to work with assistive technologies such as screen readers, providing alternative formats, and

²⁰Raghavendra, P., et al. "Supporting participation in a digital society for people with disabilities: A scoping review of the literature." *Disability and Rehabilitation*, 40 no. 17 (2018): 1984–1995.

²¹Caldwell, B., et al. *Web Content Accessibility Guidelines (WCAG) 2.0*. W3C, (2008).

²² Mirena Todorova, Ekmekci., "GDPR–General Data Protection Regulation on Sites Requiring Accessibility", *Complex Control Systems*, 3 no. 1 (2021): 30-40

avoiding features such as voice-deaf CAPTCHAs. According to Waddington, digital accessibility is now considered a fundamental human right, not just a technical option²³.

Fourth, service providers are required to ensure that services operate smoothly and safely for users, including protecting users from system failures, fraud, or discrimination. This responsibility is closely related to platform liability rules, where intermediaries can be held liable if their systems consistently harm users or violate their fundamental rights²⁴. In short, the responsibilities of digital ticket providers include: Accessibility compliance (WCAG, universal design); Data protection and privacy safeguards; Non-discrimination and equal access; System reliability and accountability mechanisms. Failure to meet these obligations is not only a technical error but also violates legal rights and responsibilities in public services.

Most digital ticketing platforms do not provide voice-based navigation or audio features that can guide blind people in selecting routes, confirming payments, and printing tickets. This is a major obstacle for users who rely entirely on assistive technology. Regarding legal barriers, despite existing laws and international conventions that guarantee the right to digital access, law enforcement against service providers who neglect accessibility remains minimal. There are no firm sanctions or effective complaint mechanisms when blind people experience digital discrimination. Technical regulations derived from Law No. 8 of 2016 do not explicitly regulate accessibility standards for digital transportation applications. As a result, service providers have legal loopholes to not prioritize inclusive design. Meanwhile, structural barriers include many digital systems being created without involving blind people in the design or testing stages. This violates the principles of universal design and results in final products that do not address the real needs of users. Many app developers perceive disabilities as a passive minority irrelevant to their target market. This view leads to product designs that do not consider fair access. Digital ticketing systems often integrate credit card or e-wallet-based digital payments, which are not always inclusive. For example, OTP or CAPTCHA processes can be a barrier for visually impaired users. Some service providers have removed the option to purchase tickets in cash or at the counter. When digital access is not inclusive, this creates new exclusions and violates the principle of equitable access.

Most digital ticketing platforms do not provide navigation based voice or audio features that can guide blind in choose route, confirm payment, and printing ticket. This is become obstacle big for fully user rely on assistive technology. In legal obstacles, although there is laws and conventions international guarantee right digital access, enforcement law to provider negligent service to accessibility still minimal. No there is sanctions firm or mechanism effective complaints when person with disabilities disability blind experience digital discrimination. Regulations technical as derivative Law no. 8 of 2016 not yet in a way explicit arrange standard accessibility for digital transportation applications. As a result, providers service own gap law for no prioritize design inclusive. While

²³ Waddington, L. (2019). *Regulating e-Accessibility and Digital Equality in Europe from a Multilevel Perspective*. In C. Ricci (Ed.), *Building an Inclusive Digital Society for Persons with Disabilities: New Challenges and Future Potentials*. Pavia University Press. (pp. 3-18)

²⁴ Frosio G, Geiger C. "Taking fundamental rights seriously in the Digital Services Act's platform liability regime." *Eur Law J.* 29 no. 1-2 (2023): 31-77. doi:10.1111/eulj.12475.

obstacle structural namely lots digital system created without involving group blind in stage design or trial. This is violate principles of universal design and resulting product an unfulfilled ending answer need real users²⁵. Many developers application own perception that disability is minority passive that is not relevant for their target market. Views this cause design products that are not consider justice access. System digital tickets often integrate digital payments based card credit or *e-wallet* which also does not always inclusive. For example, the OTP or CAPTCHA process can become barrier for users blind. Some provider service delete option purchase tickets in a way cash or through counter. When digital access is not yet available inclusive, thing this precisely create exclusion new and breaking principle justice access.

When the person in charge disability blind no can buy tickets because no available alternative equal digital access, then his rights as citizens are violated. Because the system no inclusive, many blind depend on the help of others for buy tickets, which sacrifice autonomy and confidentiality they in transact²⁶. Application tickets between provider different in design and features. This make things difficult blind for study use each application in a way consistent Because No existence standardization. Many applications digital tickets no provide mechanism help emergency for blind if they experience constraint moment use service. This is create a sense of unease safe and reliable tall. Based on matter thus, according to Article 9 of the UN Convention on Right Person with disabilities Disability (CRPD), countries are obliged ensure that person with disabilities disability can access technology information and communication (ICT), including service transportation. Indonesia ratified the CRPD through Law No. 19 of 2011, which strengthens mandate that service public digital-based must inclusive. This is contradictory with the mandate of the CRPD which has ratified by Indonesia through Law no. 19 of 2011, which states that the state is obliged provide access equivalent to technology information and communication. This cause mismatch between existing policies with reality technology applied, so system digital tickets still difficult accessible to people with disabilities disability.

Condition This show existence gap implementation between norm law and reality on the ground. Law plays a crucial role in establishing rules and standards that ensure publicly accessible digital services, such as transportation ticketing platforms, operate smoothly and safeguard personal data security and protect users' fundamental rights. Data protection law serves as a rights-based framework. This law ensures that individuals retain control over their personal data, such as the right to view, correct, move, or delete it. The GDPR, for example, emphasizes that users have primary control over their data and ensures transparency, requiring service providers to clearly inform users about how their data is processed²⁷. Data protection law serves as a form of preventative regulation by mandating privacy principles from design and from inception. Digital platforms must incorporate data protection from the outset of system development. In the case of digital ticketing, this includes

²⁵Ladner, R. E. "Design for user empowerment". *Communications of the ACM*, 58 no. 6 (2015): 32–34

²⁶ Seelman, K. D. "Universal Design and Public Policy: Ensuring Inclusion in an Information Society". *Assistive Technology*, 16 no. 1 (2004): 1–9.

²⁷ De Hert, P., Papakonstantinou, V., & Malgieri, G. "The right to data portability in the GDPR". *Computer Law & Security Review*. (2018).

secure payment systems, traveler anonymity, and protection from unauthorized access.

Law serves as a means of ensuring accountability and enforcing the law. It defines sanctions, administrative fines, and legal steps that must be taken in the event of violations. However, Indonesia still faces challenges in implementing the law, particularly in translating general legal rules into technical standards and operational compliance. There is an intersection between data protection laws and accessibility laws. Inclusive digital services must not only be accessible but also ensure that accessibility features do not compromise user privacy. For example, assistive technologies need to be integrated in a way that ensures data remains confidential²⁸. In digital public transportation ticketing systems, data protection laws serve not only to maintain information security but also as a tool to protect basic human rights, especially for people with visual impairments. This demonstrates that data protection must be understood comprehensively as part of fulfilling human rights.

First, data protection laws serve as a guarantee of individual privacy and autonomy. When using digital ticketing services, users must provide personal data such as identity information, destination location, and payment details. For people with visual impairments, the limitations of accessibility systems often force them to seek assistance from others, increasing the likelihood of privacy violations. Regulations such as the Personal Data Protection Law (PDP Law) state that data processing must be carried out officially, clearly, and with proper consent. However, theft of access to digital interfaces can hinder the process of providing proper and clear informed consent, thus risking a violation of data protection principles²⁹.

Second, data protection laws serve as a means of preventing problems by implementing the principles of privacy by design and privacy by default. In the context of digital ticketing, this means systems must be designed from the ground up to work well with assistive technologies such as screen readers and offer user-friendly and inclusive verification options. Without implementing these principles, digital systems actually create new risks for people with visual impairments, particularly in terms of dependence on others to access services³⁰.

Third, the law serves as an instrument of accountability. Digital ticketing service providers, which also act as Electronic System Operators, have a legal obligation to protect user information and maintain proper system security. If data breaches occur, service providers can face administrative sanctions or criminal penalties under the provisions of the ITE Law and the PDP Law. However, research shows that Indonesia's law enforcement system still faces challenges, particularly in protecting vulnerable groups such as people with disabilities³¹.

Fourth, there is a close relationship between data protection and digital accessibility. Systems that are not easily accessible force blind users to give up their privacy, thus guaranteeing the principle

²⁸ Olga Gkotsopoulou. "Accessibility Statements and Data Protection Notices: What Can Data Protection Law Learn from the Concept of Accessibility?". *17th IFIP International Summer School on Privacy and Identity Management (Privacy and Identity)*, Virtual, Germany (2022). pp. 184-197.

²⁹ A. R. Ardhanta dan R. Rustam, "Perlindungan Data Pribadi Nasabah Tunanetra dalam Mengakses Perbankan". *Journal UII*. (2024), <https://journal.uui.ac.id/psha/article/view/35647>.

³⁰ Susanti, A. "Perlindungan Atas Privasi Konsumen Dalam Layanan Reservasi Tiket Online Dari Pt. Kereta Api Indonesia". *Dharmasisya: Jurnal Program Magister Hukum FHUI*, 2 no. 3 (2023): 3.

³¹ R. Hardyanti, O. Syuhada, dan R. Pribadi, "Perlindungan Konsumen terhadap Platform Digital," *Jurnal USM Law Review* (2025).

of equality under the law as stated in Article 28D of the 1945 Constitution. Therefore, digital accessibility must be considered an inseparable part of data protection³². Thus, in this regard, the role of law includes protecting personal data as a fundamental right, ensuring transparent and lawful processing, enforcing accountability for digital service providers, and aligning accessibility and privacy obligations. Without robustly enforced laws, the digital transformation process can lead to the emergence of "digital vulnerabilities," where users, especially people with disabilities, are at risk of neglect and threats to their personal data.

Although in rule Law no. 8 of 2016 as a matter of fact principle ensure right on accessibility, however no there is mechanism enforcement that ensures application digital transportation meets standard inclusion. In Indonesia, the regulatory framework for digital ticketing platforms does not explicitly include comprehensive risk management obligations, particularly those related to accessibility and inclusion. Risk management on digital ticketing platforms in Indonesia lacks clear and centralized regulations, but is instead scattered across various regulations, particularly regarding ease of access for people with disabilities.

Within the technology legal framework, the Electronic Information and Transactions Law (UU ITE) and Government Regulation Number 71 of 2019 stipulate the duties of Electronic System Operators to ensure systems remain secure, reliable, and continuously operational. These provisions demonstrate a risk management responsibility, although they do not yet explicitly address issues related to digital inclusivity³³. Regulations in certain areas, such as Minister of Transportation Regulation Number 98 of 2017, still only address ease of physical access and do not address digital systems. This indicates that existing regulations are inadequate in addressing the risks of negative impacts of digital developments on people with disabilities. Internationally, risk management on digital platforms includes mechanisms such as Data Protection Impact Assessments (DPIAs), accessibility audits, and the implementation of Web Content Accessibility Guidelines (WCAG). However, Indonesia has not explicitly enforced the implementation of these mechanisms, resulting in many platforms not conducting systematic accessibility risk checks³⁴.

Weaknesses in this regulation result in the absence of firm sanctions for service providers who fail to create inclusive systems. Unlike countries like the United States, which have laws like the Americans with Disabilities Act (ADA) as a basis for suing digital discrimination cases, Indonesia lacks an adequate legal mechanism in this regard. Therefore, strengthening risk management regulations should include mandatory digital accessibility impact assessments, integration of data protection and cybersecurity standards, adoption of international best practices (e.g., DSA, GDPR), and the establishment of clear sanctions and compliance monitoring.

Not yet strict sanctions for digital operators who ignore group disability. This different far from

³² Sudirman, Moh Prajamura. "Tinjauan Perlindungan Hukum Bagi Kesetaraan Penyandang Disabilitas: Review of Legal Protection for Equality of Persons with Disabilities." *PESOLAH: Jurnal Pendidikan, Sosial dan Humaniora* 1, no. 1 (2025): 33-41.

³³ Fanny, N. T. R. I. *Tanggung jawab maskapai penerbangan terhadap perlindungan data pribadi penumpang*. (2022). <https://dspace.uui.ac.id/handle/123456789/39313>.

³⁴ Rusmiati, N., and Sudarto, S. "Tinjauan hukum platform digital dan persaingan usaha". *Iblam Law Review*. (2024). <https://ejournal.iblam.ac.id/IRL/index.php/ILR/article/view/506>.

approach in the United States through ADA Title III, which opens room lawsuit law for citizens who are disadvantaged by digital systems that are not inclusive³⁵. Lack of mechanism supervision cause lots provider service ignore to provision digital accessibility. Law of course already set, but without strict enforcement, implementation at the level operational still weak. Mismatch between regulations that tend to arrange access physique with reality digital services cause emergence gap implementation. Policies that are not responsive to dynamics digitalization make things worse digital exclusion for blind.

Government own role important in ensure that system digital transportation tickets general can accessible to all groups, including person with disabilities disability. Responsibility answer government no only limited to supervision, but also to the creation regulations that ensure provider service apply principles digital accessibility. Government need more active in push development technology accessibility and creating supportive environment creation service more public inclusive. Government should no only act as a regulator, but also as facilitator and supervisor. Required policy affirmative and incentive for ensure every provider service apply principle universal design and accessibility digital. When this, some big system digital tickets used in transportation general not yet fully fulfil need accessibility person with disabilities disabilities, in particular blind. Research by Boulton revealed that that although a number of application try provide feature text alternative or arrangement sound, applications this often fail fulfil standard expected accessibility. Therefore³⁶ that, it is necessary done evaluation comprehensive to system existing digital tickets for determine to what extent the systems the can accessible to people with disabilities disability.

CLOSING

Although Law no. 8 of 2016 provides base strong law for ensure rights person with disabilities disability, its implementation in system digital transportation tickets general still face lots challenge. Although regulations national has provide framework law for protect right person with disabilities disability, field practice show still lots obstacles, especially in system digital tickets. Obstacles technical, financial, and limited understanding about digital accessibility results in lots person with disabilities disabilities, especially blind, difficulty in access service transportation general. Obstacles technical, financial, and lack of awareness become factor dominant. Therefore that, synergy between regulation, technology, and awareness social need built for create service an inclusive and equal digital public. Therefore that, it is necessary There is further evaluation deep to system existing digital tickets and more efforts serious from government as well as provider service for ensure that system the can accessible to everyone, without except. Need existence manufacturing digital system created with involving group blind in stage design or trial.

Based on existing findings, research This recommend a number of step for increase implementation Law no. 8 of 2016 in system digital transportation tickets general. First, it is necessary

³⁵ADA National Network. *ADA and Digital Accessibility*, (2020).

³⁶Boulton, E., Shotton, J., & Hodges, S. Designing inclusive mobile interfaces: Supporting visually impaired users in public transport environments. *ACM Transactions on Accessible Computing*, 8(3) (2015): 1–27.

existence improvement understanding and training for provider service about design good accessibility. Second, the government need more active in supervise and provide incentive for development technology greater accessibility friendly for person with disabilities disability. Third, providers service must develop application more tickets inclusive, with notice standard applicable digital accessibility.

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