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ARTÍCULO

Challenges and Limitations of Digital Citizenship in Latin America

Desafíos y Limitaciones de la Ciudadanía Digital en América Latina

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ABSTRACT

The concept of digital citizenship is fundamental in today's technological age and is defined as the set of skills, attitudes, and practices that enable individuals to participate ethically, critically, safely, and responsibly in contemporary digital environments. The objective of this research was to identify the main challenges and limitations of digital citizenship in Latin America during the period 2021–2025. The methodology employed was a systematic review, following the PRISMA 2020 protocol. The research was framed within the pragmatic paradigm, using a systematic method, a mixed-methods approach, a narrative-thematic design, and a cross-sectional, bibliographic-analytical, documentary type. Systematic searches were conducted in the academic databases Scopus, ScienceDirect, SciELO, ScienceOpen, Wiley, and Redalyc using specifically defined keywords. Thirty-four articles were carefully selected from an initial 179 manuscripts after applying rigorous inclusion and exclusion criteria. The main findings identified eight categories of challenges and seven of limitations, highlighting in particular the digital divide, deficient digital skills, emerging ethical challenges, the exclusion of vulnerable groups, critical gaps in technological infrastructure, unequal internet access, and persistent socioeconomic inequality. The findings reveal that the digital divide constitutes the most significant and structural obstacle, underscoring the urgent need to implement comprehensive, sustainable public policies that effectively reduce technological inequalities and guarantee a truly inclusive and responsible digital citizenship across the Latin American region.

KEYWORDS: Challenges, limitations, digital citizenship, Latin America.

RESUMEN

El concepto de ciudadanía digital es fundamental en la era tecnológica actual y se define como el conjunto de competencias, actitudes y prácticas que permiten a las personas participar de manera ética, crítica, segura y responsable en los entornos digitales contemporáneos. El objetivo de la investigación fue identificar los principales desafíos y limitaciones de la ciudadanía digital en América Latina en el período 2021 – 2025. La metodología aplicada fue la revisión sistemática, siguiendo el protocolo PRISMA 2020. Se realizó una investigación enmarcada en el paradigma pragmático, el método sistemático, el enfoque mixto, el diseño narrativo-temático, del tipo documental bibliográfico-analítico y de corte transversal, realizando búsquedas sistemáticas en las bases de datos académicas Scopus, ScienceDirect, Scielo, ScienceOpen, Wiley y Redalyc con palabras clave específicamente definidas, seleccionando cuidadosamente 34 artículos de 179 manuscritos iniciales tras aplicar criterios rigurosos de inclusión y exclusión. Los principales resultados identificaron ocho categorías de desafíos y siete de limitaciones, destacando en particular la brecha de digitalización, las habilidades digitales deficientes, los desafíos éticos emergentes, la exclusión de grupos vulnerables, las brechas críticas de infraestructura tecnológica, el acceso desigual a internet y la persistente desigualdad socioeconómica. Las conclusiones revelan que la brecha de digitalización constituye el obstáculo más significativo y estructural, lo que evidencia la urgente necesidad de implementar políticas públicas integrales y sostenibles que reduzcan efectivamente las desigualdades tecnológicas y garanticen una ciudadanía digital verdaderamente inclusiva y responsable en toda la región latinoamericana.

PALABRAS CLAVE: Desafíos, limitaciones, ciudadanía digital, América Latina.

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Introduction

The concept of digital citizenship remains fundamental in the current technological era and, as Chenche and Bodero (2024), Linares et al. (2023), and Ribble (2021) indicate, refers to the set of competencies, attitudes, and practices that allow people to participate ethically, critically, safely, and responsibly in digital environments. These competencies integrate rights and duties with the responsible use of digital environments for communication, participation, problem solving, privacy protection, security, and the defense of democratic values, while economic, political, cultural, and educational factors influence their development in society.

According to Pelaez et al. (2024), Chocobar (2023), and Santiago and Garvich (2024) state that people must possess skills related to knowing how to know and knowing how to do, associated with digital literacy and the critical appraisal of information. Similarly, Zhong and Zheng (2023) argue that people must assume ethical commitments linked to respect for digital rights, compliance with legal standards, and safe and responsible online behavior. In addition, Vásquez et al. (2024) indicate that people must develop civic-social commitments related to democratic participation, political interaction, and contribution to the common good through digital media. This requires individuals to develop critical awareness of risks such as misinformation, surveillance, and digital gaps, as well as continuous training and adaptability in the face of technological change.

Connectivism, a theory developed by Siemens and Downes, a theory that holds that knowledge circulates through a network of connections that includes people, ideas, and technology. In this way, the person selects and chooses sources, filters information, evaluates reliability, synthesizes content, shares knowledge, makes decisions, and becomes the architect of their personal learning network (Siemens & Conole, 2011; Kop & Hill, 2008; Siemens, 2005). This theory connects directly with digital citizenship as a set of knowledge, skills, attitudes, and ethical dispositions that requires digital literacy to interact, produce, and deliberate online critically and responsibly. Thus, the integration of connectivism and digital citizenship shapes individuals capable of learning, participating, and transforming online societies (Milenkova & Lendzhova, 2021).

Therefore, the objective of the research is to identify the main challenges and limitations of digital citizenship in Latin America during the 2021–2025 period. The methodology follows a systematic review under the PRISMA 2020 protocol. In this regard, through the PICO method (Chocobar & Barreda, 2025), this research seeks to answer the following question: What are the challenges and limitations of digital citizenship in Latin America? The research aligns with the Sustainable Development Goals (SDGs), specifically SDG 4, Quality Education, in relation to digital transformation; SDG 9, Industry, Innovation and Infrastructure, in relation to technological progress; and SDG 10, Reduced Inequalities, in relation to the digital divide (UN, 2015).

Methodology

To respond to the stated objective and the research lines related to knowledge generation, the study adopted the pragmatic paradigm, grounded in methodological flexibility and the valuation of knowledge according to its applicability and usefulness (Arias, 2023; Allemang et al., 2022). It followed the systematic method because it used explicit, planned, and reproducible procedures to locate, select, evaluate, and synthesize evidence (Sgarbossa et al., 2022). It adopted a mixed approach because it integrated quantitative and qualitative data to provide more complete inferences (Rana & Chimoriya, 2025). It also used a narrative-thematic design because it compiled studies and organized them into themes to interpret meanings and trajectories (Braun & Clarke, 2022).

The study adopted a documentary, bibliographic-analytical type because it worked with bibliographic sources and analyzed them systematically and analytically-synthetically to produce knowledge (Ocaña & Fuster, 2021). It also adopted a cross-sectional scope because data collection occurred at a single point in time (Fromm et al., 2025).

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The researchers conducted an initial search on September 1, 2025, in the Scopus, ScienceDirect, SciELO, ScienceOpen, Wiley, and Redalyc databases and obtained a total of 179 manuscripts. Subsequently, the researchers applied the inclusion and exclusion criteria, eliminated 102 manuscripts, and retained 77. Then, the researchers analyzed the titles, abstracts, and keywords of each of the 77 manuscripts to verify their relationship with the research question and objective; this process eliminated 16 manuscripts and left 61. Finally, the researchers completed a full analysis of the 61 manuscripts, removed those unrelated to the research and those duplicated across the different databases, eliminated 27, and obtained a final total of 34 scientific articles (Figure 1).

The technique, understood as the systematic procedure or strategy used to obtain and organize information (Sánchez, 2022), consisted of the application of the PRISMA 2020 protocol, which allowed the search, selection, analysis, and synthesis of several articles (Chocobar & Barreda, 2025). The search and study collection process included the Scopus, ScienceDirect, SciELO, ScienceOpen, Wiley, and Redalyc databases with the keywords and connectors “digital citizenship” OR “ciudadanía digital” AND “challenges” OR “desafíos” AND “limitations” OR “limitaciones” AND “Latin America” OR “Latinoamérica”. The study used the PRISMA 2020 protocol because it improves transparency, comprehensiveness, and reproducibility, thereby raising the quality of the research (Page et al., 2021).

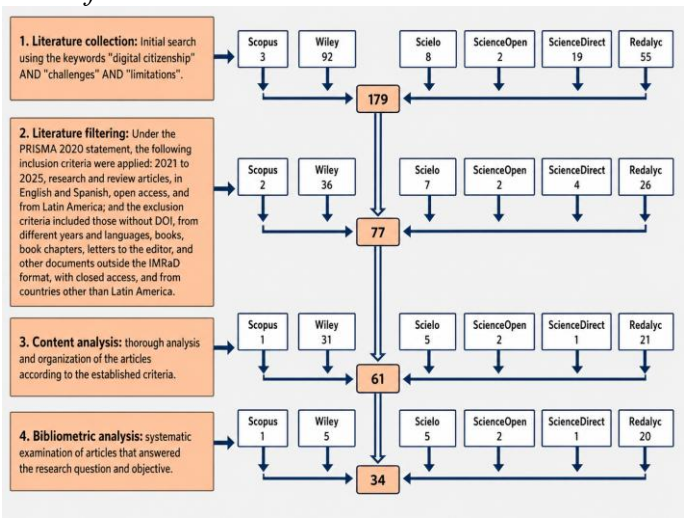
The tools, understood as devices that record and quantify variables with validity and reliability criteria, consisted of Mendeley software and Microsoft Excel 2016 (Mex et al., 2021). The inclusion criteria included scientific or review articles published between 2021 and 2025, in English and/or Spanish, open access, with DOI, and under the IMRaD methodology. The exclusion criteria included reviews, essays, books and book chapters, conference papers, restricted-access or unavailable articles, languages other than those established, and documents without DOI. The researchers downloaded the identified articles through Mendeley software and created a database in MS Excel 2016 for the individual analysis of each manuscript. This process allowed the removal of manuscripts unrelated to the research.

The analysis, understood as the description of how the studies received classification, how the measures changed, and how the evidence appeared (Page et al., 2021), considered that, after the application of the inclusion and exclusion criteria, the researchers read each article and retained only those that responded to the research question and objective.

The research consisted of a systematic review and followed the principles of integrity, transparency, and reproducibility, without the inclusion of people or the processing of personal data. The researchers fully documented the search strategies, which supports reproducibility.

Figure 1

Scientific Article Selection Process - PRISMA 2020



Note. The figure details the selection process for the 34 scientific articles according to the PRISMA 2020 protocol, prepared by the authors, adapted from Chocobar and Barreda (2025).

Results

The research determined that the main structural limitation for digital citizenship in Latin America is the digitalization gap, evidenced by deficient infrastructure and unequal internet access, and aggravated by limited digital skills, ethical challenges such as privacy and misinformation, the exclusion of vulnerable groups, restricted democratic participation, labor precarity, and a reduced understanding of the very concept of digital citizenship. This central finding poses major challenges for the development of comprehensive

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and sustainable public policies that strengthen infrastructure, critical literacy, and rights protection, guaranteeing inclusion and the responsible exercise of digital citizenship in the region.

Table 1 shows that databases such as Scopus (1), ScienceDirect (2), and ScienceOpen (2), which represent 11.76% of the total number of articles, have conducted studies on the challenges and limitations of digital citizenship in countries outside Latin America. However, the Redalyc (20), SciELO (5), and Wiley (5) databases, which represent 88.24% of the total number of articles, do address this issue in Latin America.

Table 1

Number of Selected Articles by Database.

Database	Quantity	%
Scopus	1	2.94%
Wiley	5	14.71%
SciELO	5	14.71%
ScienceOpen	2	5.88%
ScienceDirect	1	2.94%
Redalyc	20	58.82%
Total	34	100.00%

Note. The table shows the distribution of articles by database, prepared by the authors (2025).

Table 2 shows that the largest number of manuscripts written on the challenges and limitations of digital citizenship in Latin America corresponds to 2021, representing 35.29%, with 12 articles. This is followed by 2022, with 7 manuscripts, representing 20.59%; 2023, with 6, representing 17.65%; 2024, with 4, representing 11.76%; and 2025, up to September 1, with 5, representing 14.71%.

Table 2

Number of Selected Articles by Year of Publication.

Years	Quantity	%
2021	12	35.29%
2022	7	20.59%
2023	6	17.65%
2024	4	11.76%
2025*	5	14.71%
Total	34	100.00%

Note. *As of September 1, 2025. The table shows the distribution of the selected articles by year of publication. Prepared by the authors (2025).

Results of the Main Challenges of Digital Citizenship in Latin America

To fulfill the research objective, which is to identify the main challenges and limitations of digital citizenship in Latin America during the 2021-2025 period, the results were grouped into categories according to the researchers' main findings. Table 3 shows the 8 categories identified: 1) the digitalization gap, 2) digital skills, 3) ethical challenges, 4) unemployment and labor precarity, 5) infocracy and infodemic, 6) limited democratic participation, 7) vulnerable groups, and 8) challenges in understanding the concept of digital citizenship.

Digitalization gap: the authors Sysoyeva and Martínez (2025), García (2025), Huamán and Medina (2022), Arellano et al. (2022), Diepeveen and Pinet (2022), Cossío (2021), Jiménez and Fernández (2021), Torres (2021), Sánchez and Prendes (2022), and Oliveros (2023) state that this gap refers to access to and effective use of digital technologies. The findings show that Latin America suffers from a significant digital divide compared with developed countries, attributed to structural deficiencies in technological infrastructure, quality connectivity, and institutional capacities. This limits citizen participation, opportunities, and social well-being, placing the region at a disadvantage in terms of digital governance, networked learning, and effective online participation. In addition, there is a generational gap in which many older adults are excluded from technological advances and depend on third parties to interact online.

Digital skills: the authors Sysoyeva and Martínez (2025), Brailovsky (2025), Bustillos et al. (2023), Jiménez and Fernández (2021), Huamán and Medina (2022), Oliveros (2023), Arellano et al. (2022), Arenas et al. (2021), and Navarrete and Romero (2021) indicate that these refer to the level of technical, informational, and critical digital competencies. The lack of digital competencies broadens inequalities in the region because Latin American education systems do not adequately develop these skills. School curricula focus only on the basic use of technology, without promoting critical thinking, digital civic participation, or the cultural understanding of digitality, and many students show limited cybersecurity literacy. This lack of skills hinders the evaluation of the

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truthfulness of online information and reveals limited digital abilities even among university teachers.

Ethical challenges: the authors Sysoyeva and Martínez (2025), Barrezueta et al. (2023), Ortega et al. (2021), and Ochoa and Coello (2023) state that these refer to the ethical dilemmas and risks that arise from the massive use of digital technologies. Digital citizenship raises ethical challenges related to privacy, security, and equity because increasing technological dependence can violate rights through massive data collection and digital surveillance. It can also expose users to risks such as cyberbullying, overexposure of personal data, misinformation, among others, due to unsafe practices on social networks. All this requires technical skills and solid ethical training based on respect for digital rights, data protection, responsible online conduct, and equity in access.

Unemployment and labor precarity: the authors Sysoyeva and Martínez (2025) and Ochoa and Coello (2023) point out that these aspects refer to threats to employment and working conditions derived from digital transformation. Digital transformation, together with automation, threatens employment and working conditions in Latin America because digital platforms and artificial intelligence can displace workers, make employment precarious, and erode labor rights, especially among those who lack skills to adapt. Thus, intensive technology adoption entails technological unemployment, broadens the wage gap among workers, generates work overload, and attributes labor exclusion to the lack of digital competencies. Regulation is therefore necessary to prevent exploitation and ensure decent conditions.

Infocracy and infodemic: the authors Ramos (2024a), Ramos (2024b), and Arellano et al. (2022) indicate that these refer to phenomena related to the overabundance and manipulation of information in the digital age. The infodemic, or false information, and infocracy, or power through control of information, are emerging challenges because social networks foster social contagion capable of shaping collective beliefs and behaviors for political-ideological purposes, granting significant power to those who control the flow of information. It is therefore warned that the rise of social networks entails risks of misinformation and polarization by facilitating the spread of fake news, the formation of bubbles that radicalize opinions, the circulation of false information, and the difficulty of distinguishing truthful information. This erodes informed decision-making because many people lack the skills to filter reliable sources amid the infodemic, making critical thinking in digital environments more difficult.

Limited democratic participation: Marín and Cruz (2021), Galeano (2024), and Torres (2021) state that this refers to low or unequal citizen participation in democratic processes through digital media. The digital political participation of Latin American youth remains limited despite the democratizing potential of the internet, and political apathy among young people is observed, reflected in low involvement in online initiatives. Socioeconomic inequality reduces the digital civic participation of low-income youth by making it harder for them to access information and online debate spaces. Even with digital access, youth participation is hindered by online violence, polarization, and the invisibilization of their voices in relation to traditional actors. Overcoming this challenge requires combining technological inclusion with digital citizenship education to foster youth participation online.

Vulnerable groups: Mayer et al. (2024), Ferreira (2023), Molina et al. (2023), Silva et al. (2021), and Meneses et al. (2021) state that this refers to vulnerable population groups that face additional barriers to exercising digital citizenship. The digital exclusion of vulnerable groups, such as women, ethnic minorities, people with disabilities, rural populations, among others, shows that the lack of gender and intercultural approaches in technological education limits their participation and perpetuates power gaps. Without access and empowerment, technologies may become instruments of subordination rather than emancipation for women's movements. In addition, a significant gap in digital skills has been documented between students from public and private universities, partly attributable to unequal technological infrastructure between rural and urban areas, making it urgent to implement digital equity strategies.

Challenges in understanding the concept of digital citizenship: Estellés and Doyle (2025), Núñez et al. (2021), Chim and Zapata (2022), Torres (2021), and Ibarra and Calderón (2022) state that these arise from the lack of clarity, consensus, and depth in the definition and scope of digital citizenship. The limited understanding of the concept of digital

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citizenship constitutes another challenge, as the findings indicate that its teaching is often limited to safe internet conduct, ignoring key components such as active civic participation, with a concept that has not been analyzed in depth and lacks consensus regarding its dimensions. This is reflected in fragmented curricula, where education focuses on isolated technical skills rather than forming critical and participatory citizens, revealing the absence of a multidimensional approach.

Table 3

Main Challenges of Digital Citizenship in Latin America Grouped by Categories.

Authors	Challenges
	Category 1: Digitalization gap
Sysoyeva & Martínez (2025)	The Digital Government Index (DGI) study shows that, while Nordic and Asian countries lead digitalization, Latin America shows less progress in digital governance, reflecting a gap in infrastructure and digital capacities between the Latin American region and other developed regions.
Huamán & Medina (2022)	Need to reduce gaps in digital ecosystems (high-quality infrastructure and massification) for well-being and citizen participation.
Diepeveen & Pinet (2022)	Digital literacy initiatives must evolve toward digital citizenship approaches capable of addressing misinformation, which implies developing critical skills and understanding the political context of platforms.
García (2025)	The digital divide prevents several Latin American countries from fully participating. The lack of reliable connectivity in rural areas and basic infrastructure limits access to educational and health opportunities.
Cossío (2021); Jiménez & Fernández (2021)	Reduce the digital divide from education by incorporating computational thinking into the educational curriculum.
Torres (2021); Sánchez & Prendes (2022)	There is a digital divide in the region, including lack of internet coverage, development of digital competencies, and the need for participatory digital inclusion so that citizens assimilate digital citizenship.
Oliveros (2023)	The digital divide caused by disparities in technological infrastructure and internet access in rural areas and low-income sectors must be reduced; this can be achieved by adopting new technologies for citizens and providing information security and data protection.
Arellano et al. (2022)	The generational digital divide particularly affects older adults, excluding them from technological advances and generating family dependence to carry out digital procedures.
	Category 2: Digital skills
Sysoyeva & Martínez (2025)	The OECD warns that digital transformation may broaden existing inequalities if a just transition is not guaranteed, since people with lower digital skills and in situations of social vulnerability are the most exposed to the negative effects of digitalization.
Brailovsky (2025)	Deficient curricular approaches that limit the scope of digital citizenship to responsible use, without addressing its cultural and political dimensions.
Bustillos et al. (2023); Jiménez & Fernández (2021)	Students need to develop digital skills to navigate safely, since their level of cybersecurity awareness is low, requiring literacy programs that include knowledge, skills, and attitudes.
Huamán & Medina (2022); Oliveros (2023)	Need to develop digital skills to strengthen competencies that enable efficient use of digital services.
Arellano et al. (2022)	Lack of competencies to evaluate the truthfulness of information and detect misleading information.
Arenas et al. (2021)	Low training in digital literacy, limited technology competencies, and insufficient knowledge of advanced digital tools.
Navarrete & Romero (2021)	Low level of digital competencies from a critical perspective.
	Category 3: Ethical challenges
Sysoyeva & Martínez (2025)	There are risks associated with the use of technology, which raises concerns about the privacy, equality, and security of Latin American citizens.
Barrezueta et al. (2023)	Young people are exposed to risks on content networks, cyberbullying, excessive exposure, effects on mental health, and misinformation.

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Ortega et al. (2021)	Problems with the ethical use of data, development of critical thinking in the face of overinformation, and technological humanization.
Ochoa & Coello (2023)	The impact of technology on digital identity and security when searching for and evaluating information, as well as on ethical, collaborative, and social participation responsibilities.
Category 4: Unemployment and labor precarity	
Sysoyeva & Martínez (2025)	Automation and work on digital platforms generate risks of labor displacement, exploitation, and loss of rights, and the lack of digital competencies limits participation in the digital economy and may cause social isolation.
Ochoa & Coello (2023)	The use of technologies generates unemployment, wage gaps, data security problems, and work overload.
Category 5: Infocracy and infodemic	
Ramos (2024a)	Social contagion enables the accelerated generation of ways of thinking directed toward a community, whether governmental, ideological, political, or otherwise.
Ramos (2024b)	Emergence of infocracy as a system in which society, the economy, and politics are governed by information and influenced by digital platforms and social networks.
Sáez (2025)	The increase in digital consumption and social networks entails challenges such as misinformation, infocracy, and polarization; networks broaden participation but also foster antagonistic views.
Arellano et al. (2022)	Misinformation and fake news (infodemic) spread through social networks.
Category 6: Limited democratic participation	
Marín & Cruz (2021)	Young people show a lack of interest in politics.
Galeano (2024)	Socioeconomic inequality reduces young people's political participation and access to information.
Torres (2021)	Online political participation practices are affected by inequalities, violence, and the invisibilization of young people, which hinders the exercise of digital citizenship.
Category 7: Vulnerable groups	
Mayer et al. (2024)	People with different abilities face a greater risk of problematic technology use and difficulties managing screen time.
Ferreira (2023)	For internationalization to be inclusive, strategies are required that promote digital equity and digital citizenship competencies, including digital literacy, security, and informational self-determination.
Molina et al. (2023)	Historical exclusion of vulnerable groups, such as women and ethnic minorities; absence of gender and intercultural perspectives in educational approaches; lack of effective spaces for digital citizen participation.
Silva et al. (2021)	Significant digital gap between urban and rural regions, socioeconomic strata, and ethnic groups, with differences in digital competence levels between students from public and private universities.
Meneses et al. (2021)	Exclusion and marginalization of gender social movements due to lack of access to ICT and the risk that these technologies become instruments of subordination rather than emancipation for gender organizations.
Category 8: Challenges in understanding the concept of digital citizenship	
Estellés & Doyle (2025)	The concept of digital citizenship currently taught and learned is limited to promoting safe and responsible conduct, leaving aside the promotion of civic participation and social justice.
Núñez et al. (2021); Chim & Zapata (2022)	The concept of digital citizenship has not been analyzed with the required depth.
Torres (2021)	The development of competence in digital citizenship is incipient, since most young people show little interest in participating online.
Ibarra & Calderón (2022)	Lack of training in citizenship competencies for the exercise of global citizenship and lack of comprehensive citizenship education programs.

Note. The table shows the main challenges faced by Latin American countries regarding digital citizenship, prepared by the authors (2025).

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Results of the Main Limitations of Digital Citizenship in Latin America

Table 4 groups the main limitations faced by Latin American countries regarding digital citizenship into 7 categories: 1) infrastructure and transparency gaps, 2) unequal internet access and digital skills, 3) data centralization, 4) risks of educational decline, 5) talent drain, 6) socioeconomic inequality, and 7) the right to digital disconnection.

Infrastructure and transparency gap: the authors Sysoyeva and Martínez (2025), Huamán and Medina (2022), Marín and Cruz (2021), Ortega et al. (2021), Cossío (2021), Ferreira (2023), Jiménez and Fernández (2021), and Oliveros (2023) point to insufficient digital infrastructure and low state transparency. Structural limitations in digital infrastructure prevent digital citizenship from consolidating as a widespread practice in Latin America, with limited state capacity to offer inclusive and transparent online services. This keeps digital citizenship in an incipient phase, without visible medium-term results. Added to this are unstable connectivity, urban-rural gaps, shortcomings in ICT policy implementation, socioeconomic inequalities, and the concentration of data power, which restrict access to technology; educational digital strategies remain normative and lack effective political support.

Unequal internet access and digital skills: the authors Sysoyeva and Martínez (2025), Ramos (2024b), Brailovsky (2025), García (2025), Bustillos et al. (2023), Sáez (2025), Huamán and Medina (2022), Chim and Zapata (2022), Sánchez and Prendes (2022), Oliveros (2023), Arellano et al. (2022), Ramírez et al. (2021), Silva et al. (2021), and Ibarra and Calderón (2022) indicate that these refer to the unequal distribution of connectivity, devices, and digital competencies. Digital citizenship in the region is limited by unequal access to the internet, devices, and digital competencies, with older, rural, ethnically minoritized, and low-income populations lacking broadband, equipment, and skills, deepening their social, economic, and political exclusion. This is linked to curricula that privilege instrumental digital use over critical analysis. In addition, teachers with basic competencies, inadequate methodologies, insufficient digital literacy, and resistance to change generate gaps.

Data centralization: the authors Sysoyeva and Martínez (2025) and Sued (2022) state that it refers to the concentration of citizens' data in a few platforms. The massive centralization of citizen data constitutes a critical limitation for the full exercise of digital citizenship because concentrating information in centralized systems increases the risk of unjustified intrusions and violations of fundamental rights, especially when data protection frameworks are weak or poorly applied. This scenario is aggravated by algorithmic power concentrated in a few transnational technology platforms and by the opacity of their automated processes, making it difficult to audit decisions and question biases. Thus, the lack of transparency in the design and operation of these systems limits citizens' ability to exercise control over their data, understand how they are used, and demand accountability.

Risks of educational decline: Barrezueta et al. (2023) indicate that this refers to intensive but superficial use of technologies. Educational decline poses a direct threat to digital citizenship in Latin America because, although young people are intensive users of digital platforms, their relationship with information is often superficial and centered on the rapid consumption of content, without critical depth. This dynamic makes it difficult to identify misinformation, hate speech, and algorithmic manipulation, weakening the ability to participate responsibly in digital environments. The lack of systematic media and digital literacy strategies in education systems aggravates this problem by failing to transversally integrate critical media reading, source analysis, and reflective practice regarding online rights and responsibilities.

Talent drain: García (2025) states that this refers to the emigration of qualified professionals and scarce investment in education. Talent drain constitutes a structural limitation for the development of sovereign digital citizenship in Latin America, where the lack of attractive working and research conditions drives the emigration of highly qualified professionals, generating a shortage of local talent in key areas such as information technologies, artificial intelligence, and cybersecurity. This deficit hinders the creation of contextualized technological solutions and limits the capacity of states and universities to lead innovations that respond to regional needs, causing technologies to be designed outside the local

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context and built on biased data from developed countries.

Socioeconomic inequality: Galeano (2024), Sánchez (2021), and Meneses et al. (2021) indicate that this refers to unequal economic conditions that restrict devices, connectivity, and training time. Socioeconomic inequality is a cross-cutting factor that broadens the digital divide and limits digital citizenship in the region, because people with fewer economic resources tend to have fewer devices, lower-quality connectivity, and little time for digital training, reducing their access to online services, information, and opportunities. In this context, many people cannot be considered full digital citizens because they lack both access and skills to handle technologies and the internet. Even telework becomes a privilege of those who have connectivity and competencies, reinforcing social inequality.

Right to digital disconnection: Sánchez (2021) states that this refers to the practical impossibility of disconnecting from digital work and the extension of working hours, which violates personal boundaries. Labor precarity and the lack of effective regulation of workdays in digital environments constitute an emerging limitation for digital citizenship in many Latin American contexts, where people are forced to remain permanently connected. This extends their workday beyond what was formally agreed upon and blurs the boundaries between work and personal life. The absence of guarantees for the right to disconnection reduces quality of life, increases stress, and hinders the exercise of other dimensions of citizenship, such as community participation, leisure, care, and continuous training. In addition, the pressure to be always available in digital environments may generate concealed technological unemployment by normalizing demands and flexibilizing labor rights.

Table 4

Main Limitations of Digital Citizenship in Latin America Grouped by Categories.

Authors	Limitations
Category 1: Infrastructure and transparency gaps	
Sysoyeva & Martínez (2025)	In 2022, Latin American countries such as Chile and Costa Rica obtained low values in the Digital Government Index (DGI), indicating limited digitalization and low governmental capacity to provide inclusive digital services.
Huamán & Medina (2022)	The structural digital divide keeps digital citizenship in process, without achieving medium-term results.
Marín & Cruz (2021)	Unstable connectivity, gaps between urban and rural areas, and shortcomings in the implementation of ICT strategies.
Ortega et al. (2021); Cossío (2021)	Limitations in technological access derived from socioeconomic inequalities and the concentration of data power.
Ferreira (2023)	The implementation of comprehensive digital strategies in higher education remains normative and is not supported by concrete policies, limiting the progress of digital citizenship, in which digital opportunities are not equitably distributed and barriers related to disability, gender, age, socioeconomic capital, and digital capital persist.
Jiménez & Fernández (2021)	Connectivity difficulties, limited access to electronic devices, high internet costs, and insufficient equipment for the use of technology.
Oliveros (2023)	The gaps broaden existing inequalities and limit citizens' interest in consulting government websites.
Category 2: Unequal internet access and digital skills	
Sysoyeva & Martínez (2025)	Older adults, rural populations, ethnic minorities, and low-income people often lack access to broadband, devices, and digital skills, leading to greater social, economic, and political marginalization.
Ramos (2024b)	Construction of a precarious freedom based on information that is often distant from reality and not supported by verifiable, reliable, and timely sources.
Brailovsky (2025)	Lack of an integral and continuous perspective in digital curricular policy, where use is taught more than critical analysis.
García (2025)	The lack of reliable connectivity in rural areas and basic infrastructure limits access to educational and health opportunities. There is a shortage of local talent due to

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	underfunded education systems and the emigration of qualified professionals, which hinders the development of proprietary technologies.
Bustillos et al. (2023)	There is a workforce gap in cybersecurity due to a deficit of professionals, since schools do not provide computer security training and professionals are vulnerable to phishing and cyberbullying, revealing incipient regulation.
Sáez (2025)	Lack of connectivity and infrastructure limits information search, generating cognitive and digital gaps as differences in access and skills that prevent competency development.
Huamán & Medina (2022)	Low penetration of internet access service in rural areas.
Chim & Zapata (2022)	Teachers possess basic technical skills but lack knowledge to integrate ICT into educational practice, limiting their ability to exercise and teach digital citizenship. Factors such as age, gender, and educational level influence the level of digital competencies.
Sánchez & Prendes (2022)	Social, economic, political, and cultural inequalities determine opportunities for access to ICT, and overcoming them requires investments in infrastructure and educational policies that promote innovation and teacher training.
Oliveros (2023)	Insufficient digital literacy and resistance to change in the adoption of technologies by the population.
Arellano et al. (2022)	Limited access to technological devices suitable for older adults and lack of applications and platforms designed for this age group, with limited competencies to live with digital autonomy. This generates insecurities and fears due to lack of technological instruction and the need for constant family support for digital activities.
Ramírez et al. (2021)	Poor connectivity and low quality of internet signal, inadequate teaching methodologies for the digital modality, and negative prior experiences with online education, which generate resistance to the educational use of the internet and challenges in ICT implementation in education.
Silva et al. (2021)	Insufficient levels of digital competencies for virtual programs, showing weaknesses in collaborative work and in the use of advanced technological tools, which limits digital citizenship.
Ibarra & Calderón (2022)	Education centered on technical aspects rather than comprehensive citizenship education, limiting the development of critical thinking and effective democratic participation.
Category 3: Data centralization	
Sysoyeva & Martínez (2025)	The OECD warns that concentrating citizens' information in a centralized system can generate unjustified intrusions and rights violations.
Sued (2022)	Algorithmic power concentrated in a few technology platforms and lack of transparency in automated processes.
Category 4: Risks of educational decline	
Barrezueta et al. (2023)	Decline of media education, despite its urgency, because young people do not delve deeply into information available on the web, which results from the need to form critical digital citizenship.
Category 5: Talent drain	
García (2025)	There is a shortage of local talent due to underfunded education systems and the emigration of qualified professionals, which hinders the development of proprietary technologies. Thus, technologies are often designed outside the context and based on biased data from developed countries, while Latin American countries have little voice in global digital governance.
Category 6: Socioeconomic inequality	
Galeano (2024)	Socioeconomic inequality generates a large digital divide, in which people with fewer economic resources have fewer devices and less connectivity.
Sánchez (2021)	Many people cannot be considered digital citizens because they lack access and the skills to use devices and the internet, and telework becomes a privilege of those with connectivity and knowledge, accentuating social inequality.
Meneses et al. (2021)	Dependence on specific economic, social, and political contexts for the exercise of digital citizenship and the use of ICT, mainly as mechanisms of dissemination rather than spaces of real emancipation.
Category 7: Right to digital disconnection	

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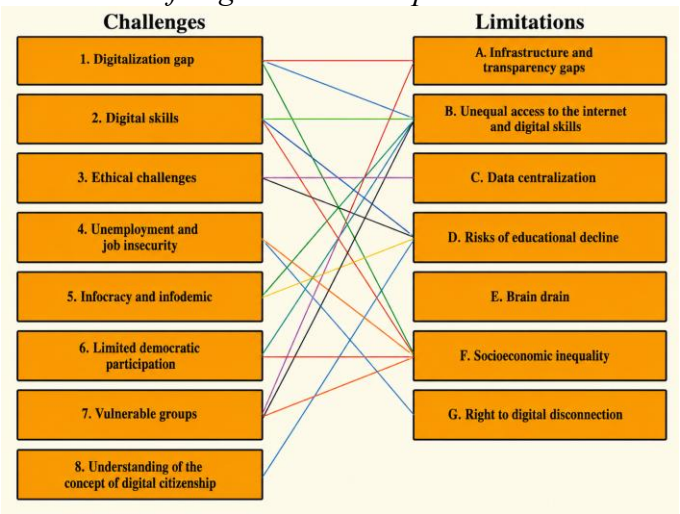
Sánchez (2021)	Labor precarity and the lack of state control over workdays hinder the exercise of the right to disconnection, which limits digital citizenship and generates technological unemployment.

Note. The table shows the main limitations faced by Latin American countries regarding digital citizenship, prepared by the authors (2025).

Similarly, Figure 2 shows how the challenges of digital citizenship in Latin America are closely conditioned by structural limitations, in which the digitalization gap, skill deficits, infocracy, low democratic participation, the vulnerability of certain groups, and misunderstanding of the concept are linked to infrastructure gaps, socioeconomic inequality, data centralization, and educational decline. At the same time, talent drain and the weak guarantee of the right to disconnection deepen these problems and generate cycles of exclusion.

Figure 2

Interrelationship between the Challenges and Limitations of Digital Citizenship in Latin America.



Note. The figure shows the relationship between the challenges and limitations of digital citizenship in Latin America, prepared by the authors (2025).

In synthesis, the findings show that digital citizenship in Latin America is configured as a field strained by deep structural asymmetries and by the insufficient preparation of educational, labor, and governance systems for the digital age. The digitalization gap, together with socioeconomic inequality, operates as an articulating axis that conditions access to infrastructure, connectivity, and critical training, affecting young people from popular sectors and historically vulnerable groups with greater intensity. At the same time, ethical risks, infodemic, labor precarity, and excessive demands for permanent availability emerge, revealing a digitalization more oriented toward control, productivity, and consumption than toward the expansion of rights. Thus, the region faces the challenge of moving from merely technological inclusion toward substantive digital citizenship that integrates social justice, data protection, gender equity, democratic participation, and the right to disconnection.

Discussion

The objective of the research was to identify the main challenges and limitations of digital citizenship in Latin America during the 2021-2025 period. For this purpose, a systematic review was conducted following the PRISMA 2020 protocol, which made it possible to search, select, and analyze 34 scientific articles from databases such as Scopus, ScienceDirect, SciELO, ScienceOpen, Wiley, and Redalyc. This analysis was grounded in the theory of connectivism, which conceives learning and participation in the digital sphere as processes constructed through knowledge networks among people, ideas, and technologies, and in the notion of digital citizenship, understood as the set of competencies, attitudes, and practices that enable ethical-critical participation in digital environments by articulating technological literacy, ethical commitments, and social participation.

Within this framework, several authors agree that Latin America presents a significant gap in digital infrastructure and capacities compared with developed regions. Sysoyeva and Martínez (2025) showed, based on the Digital Government Index, that Nordic and Asian countries lead digitalization, while the Latin American region shows less progress. Huamán and Medina (2022) highlighted the need to close gaps in digital ecosystems by improving infrastructure and connectivity. García (2025) emphasized the lack of reliable connectivity and basic

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infrastructure in rural areas, which restricts access to educational and health opportunities.

Likewise, a generational gap was identified that excludes older adults from technological advances, demonstrating that inequality in access to infrastructure constitutes a structural obstacle to the exercise of digital citizenship and places Latin American countries at a disadvantage in developing the networked learning proposed by connectivism.

Complementarily, the results show that the lack of digital skills deepens social inequalities, since several studies indicate that curricular approaches are limited to teaching basic or responsible use of technology, without addressing its cultural and political dimensions or the development of critical thinking. Added to this are low levels of cybersecurity awareness among students and the absence of literacy programs that integrate knowledge, skills, and attitudes. This category is directly linked to connectivism: if learning occurs in networks, the ability to filter, evaluate, and synthesize information is central. The lack of critical competencies therefore limits citizens' capacity to build and maintain meaningful personal learning networks.

Ethical challenges derived from the intensive use of digital technologies are also emphasized. Sysoyeva and Martínez (2025) warn about risks to privacy, equality, and security; Barrezueta et al. (2023) address young people's exposure to cyberbullying and effects on mental health; Ortega et al. (2021) identify problems in the ethical use of data and the need for critical thinking in the face of overinformation; and Ochoa and Coello (2023) examine the impact of technologies on digital identity, responsibility in searching for and evaluating information. All converge in arguing that digital citizenship requires solid ethical training that promotes respect for digital rights, data protection, and responsible participation, in coherence with connectivism, which assumes that networked learning must be guided by ethical and social dispositions.

In the labor sphere, Sysoyeva and Martínez (2025) state that work on digital platforms entails risks of labor displacement, loss of rights, and social isolation. Ochoa and Coello (2023) highlight unemployment, wage gaps, work overload, the use of technologies, data security problems, and occupational health. Both agree on the negative effects of unregulated automation, but differ in emphasis: while the former underline the lack of digital competencies as a cause of isolation, the latter prioritize psychosocial and security risks. These findings suggest that digital citizenship must incorporate competencies for participating in the digital economy while simultaneously claiming labor rights, reinforcing the ethical-critical dimension of connectivism.

Another axis of discussion is infocracy and the infodemic. Ramos (2024a) describes social contagion and the accelerated propagation of ways of thinking; Ramos (2024b) argues that society, the economy, and politics are increasingly governed by information mediated by digital platforms; Sáez (2025) warns that the increase in digital consumption and social networks promotes misinformation and polarization; and Arellano et al. (2022) alert about the dissemination of fake news on networks. These convergences show that the proliferation of unfiltered information threatens informed decision-making and, consequently, the principles of digital citizenship. Connectivist theory raises the need to discern sources and build reliable networks, but the infodemic reveals that a large part of the population still lacks these competencies.

Limited democratic participation emerges as another challenge, with political apathy observed among young people and unequal participation conditioned by socioeconomic inequality, which reduces their access to information and online debate spaces. Torres (2021) shows that political participation practices in digital environments are affected by inequalities, violence, and the invisibilization of youth voices, and that the democratization of the digital sphere has not eliminated traditional barriers such as unequal access, polarization, and apathy, which remain persistent problems. Galeano (2024) emphasizes the weight of socioeconomic inequality, and Torres (2021) complements the analysis by underlining invisibilization and violence on digital platforms. All this prevents the creation of learning networks and the appropriation of technologies for civic purposes.

Regarding vulnerable groups, Mayer et al. (2024) show that people with autism face a greater risk of problematic technology use and difficulties in time management; Ferreira (2023) argues that the

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internationalization of digital education requires equity and informational self-determination strategies; Molina et al. (2023) address the historical exclusion of women and ethnic minorities and the absence of gender and intercultural approaches; Silva et al. (2021) report significant gaps between urban and rural contexts and between socioeconomic strata; and Meneses et al. (2021) state that gender social movements are marginalized due to lack of technological access. These findings confirm that digital citizenship reproduces structural inequalities and that vulnerability takes multiple forms, requiring inclusion policies.

The discussion also reveals important challenges in understanding the very concept of digital citizenship because Estellés and Doyle (2025) point out that education is often reduced to promoting safe and responsible conduct, without incorporating civic participation or social justice. Núñez et al. (2021) and Chim and Zapata (2022) agree that the concept has not been analyzed with the necessary depth. Torres (2021) observes that the development of this competence is incipient due to limited youth interest in online participation, and Ibarra and Calderón (2022) warn about the absence of comprehensive citizenship education programs. This lack of conceptual clarity makes it difficult to formulate coherent policies and programs and contrasts with connectivism, which offers a framework for understanding learning and participation in networks.

The results linked to structural limitations reinforce the research, since Huamán and Medina (2022) show that the structural gap keeps digital citizenship in an incipient state; Marín and Cruz (2021) highlight urban-rural gaps and unstable connectivity; and Ortega et al. (2021) and Cossío (2021) link access restrictions to socioeconomic inequalities and the concentration of data power. Thus, the lack of infrastructure, together with informational centralization, compromises transparency and participation because, without infrastructure, there is no network and, without a network, there is no connectivity.

In the same line, Sysoyeva and Martínez (2025) document that older adults, rural communities, ethnic minorities, and low-income groups lack access to broadband, devices, and digital skills, increasing their social, economic, and political marginalization. Ramos (2024b) adds that, even when a certain degree of access exists, a precarious freedom is configured based on unverifiable information. These findings agree that digital citizenship is limited both by the lack of physical access and by insufficient competencies, so that the connectivist network remains restricted to a minority.

Another critical aspect is data centralization, since Sued (2022) warns about algorithmic power concentrated in a few platforms and the lack of transparency in their automated processes. Even in contexts with available infrastructure, the control of data by private or state actors can undermine autonomy and trust, essential conditions for digital citizenship. From the perspective of connectivism, which advocates open networks and the diversity of sources, this centralization limits people's ability to self-construct their own learning networks.

The findings of Barrezueta et al. (2023) complement this panorama by showing that, despite the urgency of media education, many young people do not delve deeply into the information they consume, which increases the need to form critical digital citizenship. Although digital literacy is promoted, the leap toward critical understanding that would enable active participation in knowledge networks, as proposed by connectivism, is not always achieved. Similarly, García (2025) explains that the shortage of local talent, resulting from the emigration of qualified professionals and the underfunding of education systems, hinders the development of proprietary technologies. Digital tools are often designed outside the context and based on data from developed countries, reinforcing technological dependence and limiting the construction of local knowledge and digital governance networks.

Regarding socioeconomic inequality, Galeano (2024) shows that people with fewer resources have fewer devices and less connectivity. Sánchez (2021) indicates that many people cannot be considered digital citizens because they lack access and skills to use devices and the internet, and that telework becomes a privilege of those who have connectivity and competencies. Meneses et al. (2021) state that the uses of ICT depend on specific economic, social, and political contexts and are oriented more toward dissemination than real emancipation. All this reinforces the idea that digital citizenship is

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conditioned by socioeconomic structures that perpetuate exclusions.

The right to digital disconnection also emerges as a relevant limitation, since Sánchez (2021) argues that labor precarity and the lack of state control over workdays hinder its exercise, generating forms of technological unemployment and restricting digital citizenship. Permanent connectivity can become a form of exploitation, showing that digital citizenship does not only imply access to and use of technologies, but also decent working conditions.

Taken together, all these findings are embedded in the theory of connectivism, according to which digital citizenship in Latin America still lacks the necessary conditions for people to fully build and manage their knowledge networks. The digitalization gap, together with the absence of critical skills, prevents many from connecting and filtering information; the infodemic, together with data centralization, affects the diversity of sources and autonomy in decision-making; and ethical challenges, together with labor precarity, show that participation in the network must be accompanied by civic values and guarantees of digital rights. At the same time, talent drain and socioeconomic inequality limit the region's capacity to produce and share its own knowledge.

The research suggests that the challenges and limitations identified compromise the full realization of a connectivist digital citizenship, but they also guide lines of action, such as reducing access gaps, strengthening critical literacy, and promoting inclusive policies that secure digital rights and favor the construction of fair and sustainable knowledge networks in Latin America.

Conclusions

The research made it possible to identify the main challenges and limitations of digital citizenship in Latin America between 2021 and 2025. By integrating evidence dispersed across several databases and countries, it made it possible to understand digital citizenship as a phenomenon crossed by structural digitalization gaps, socioeconomic inequality, and lack of critical literacy, providing a solid interpretive framework for decision-making in public policy, educational management, and the design of digital inclusion programs. It shows that increasing access to devices or connectivity is not enough; rather, infrastructure, competencies, ethics, and democratic participation must be articulated to advance toward substantive digital citizenship in the region.

The results allow possible future scenarios to be anticipated if the identified challenges are not addressed in a timely manner, since the persistence of gaps in infrastructure, skills, and participation may deepen existing inequalities, consolidate governance models based on data concentration, and limit the voice of Latin American countries in the global digital sphere. In contrast, if the findings are assumed as a roadmap, it is possible to guide curricular reforms, teacher training programs, cybersecurity strategies, and inclusion policies aimed at vulnerable groups, which could favor the construction of more equitable learning networks and the development of digital citizenship capable of critically influencing the political, economic, and cultural life of the region.

Based on these results, it is suggested that future research deepen the analysis through comparative empirical studies among countries, regions, and social groups, incorporating qualitative and ethnographic approaches that make it possible to understand concrete experiences of digital citizenship. It is also necessary to evaluate educational programs, public policies, and community projects aimed at reducing gaps and strengthening critical literacy. In addition, the interrelationship between digital citizenship, psychological well-being, labor rights, gender perspective, and interculturality should be explored in greater detail, as well as the impact of emerging technologies, in order to refine the conceptual framework and generate applied evidence for decision-making in education, government, and civil society.

The research presents limitations that must be considered when interpreting the results, such as the analysis period, restricted to studies published between 2021 and 2025, which may have excluded relevant background and longer-term trends. The final corpus consisted of a limited number of articles selected according to specific inclusion criteria that prioritized publications with DOI and open access, excluding part of the gray literature and other types of documents. Furthermore, the available scientific production is concentrated in certain countries, so the

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reality of several Latin American contexts may be underrepresented. However, these restrictions open a fertile field for future studies that complement and contrast the evidence systematized here.

Conflict of Interest Statement

The author declares that there are no conflicts of interest related to the conduct of this study or to the interpretation of its results. Likewise, the authors state that they have no personal, academic, or financial relationships that could influence the development or findings of the research.

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The authors declare that this research received no funding from public, private, or commercial institutions and that it was conducted with their own resources, which guarantees independence in the research process.

Ethics Statement

This study did not require the approval of an institutional ethics committee, as it was a systematic review based on scientific articles indexed in Scopus and other academic databases, without the participation of human subjects or the handling of personal data. The research was conducted under the principles of integrity, transparency, reproducibility, and respect for copyright.

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