

# The Development Conversation about Infrastructure:

Energy, Transportation, Water and  
Sanitation

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TECHNICAL  
NOTE N°  
IDB-TN-1800

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Inter-American Development Bank

June 2020



Cataloging-in-Publication data provided by the  
Inter-American Development Bank  
Felipe Herrera Library

Calderón, Claudia.

The development conversation about infrastructure: energy, transportation, water and sanitation / Claudia Calderón, Angélica Fernández Gómez Platero, Z'leste Wanner.

p. cm. — (IDB Technical Note ; 1800)

Includes bibliographic references.

1. Infrastructure (Economics)-Latin America-Public opinion. 2. Infrastructure (Economics)-Caribbean Area-Public opinion. 3. Public utilities-Latin America-Public opinion. 4. Public utilities-Caribbean Area-Public opinion. I. Fernández Gómez Platero, Angélica. II. Wanner, Z'leste. III. Inter-American Development Bank. Department of Research and Chief Economist. IV. Title. V. Series.  
IDB-TN-1800

<http://www.iadb.org>

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## **Abstract\***

The Landscape Report is a survey of the digital conversation on a given topic, in this case, infrastructure as it pertains to the sectors of Transportation, Energy and Water, and Sanitation. Using complex queries, via Boolean search, the report analyzes public digital channels (social media, digital news, and others) for mentions of topics related to these sectors to understand the public debate on these issues.

**JEL classifications:** O180

**Keywords:** Infrastructure, Water, Sanitation, Energy, Transportation, Digital conversation, Social media, Social listening

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\* This paper was undertaken as part of the Inter-American Development Bank's Latin American and Caribbean Research Network project "The Regulation of Public Utilities for the Future in Latin America and the Caribbean."

## Key Findings

- Infrastructure is one of the **highest-volume conversations** in the development discussion in the region, and that volume is largely driven by Transportation and conversation originating in Mexico.
- The **New International Airport of Mexico City** (NAIM) drives most of the Transportation conversation, particularly in 2018, when news and social media covered updates and controversy about the project and announcements of a public consultation. Meanwhile, **water interruptions and cuts** across the region are the focus of the Water and Sanitation discussion, and conversations about **solar and renewable energy and the environment** have gained popularity in Energy conversation as part of political messages and presidential campaigns.
- Discussion on **Infrastructure Services** largely involves Water and Sanitation-related conversation, where over 50 percent of the discussion touches on service issues, generated mainly by service interruption and shortages. Meanwhile, Energy and Transportation conversations are less focused on services and include more references to projects and general discussion which range from airports and road safety to renewable energy and hydroelectric dams.
- Infrastructure-related complaints are driven mostly by concerns about water shortages and leaks, lack of service and poor quality of public transportation and the cost of energy. However, as seen in most social media discussion, users tend to share someone else's complaint rather than express their own concerns directly.
- **Quality of service** is the most discussed issue among individuals addressing infrastructure, followed by price and access to services. Quality is the most talked about issue in Water and Sanitation and Transportation discussion. In Energy, however, access to services generates the most discussion.
- Global media coverage of infrastructure in the Latin American and Caribbean region focuses on three major areas: large-scale infrastructure projects and investments, including bilateral agreements to foster infrastructure; long-term

investments and solutions, particularly related to plans to boost renewable energy; and the effects of natural disasters on infrastructure, which drive the most noticeable spikes in coverage.

- **Water scarcity and droughts** across the region are among the most covered topics globally, with news centering on the impact and consequences of droughts. This is notably different from the conversation generated from within Latin America, which concentrates on water cuts and service disruptions.

## 1. The Digital Conversation on Infrastructure

- Infrastructure is one of the highest-volume conversations in the development conversation in the region, and that volume is largely driven by Transportation and conversation originating in Mexico.
- Discussions related to the construction of the New International Airport of Mexico (NAIM) have driven most of the Transportation conversation. Drinking water and water access are the focus of the Water and Sanitation discussion with references to water interruptions and cuts across the region. Conversations about solar energy, renewable energy, and environment have gained popularity in Energy, as they were part of political messages and presidential campaigns.

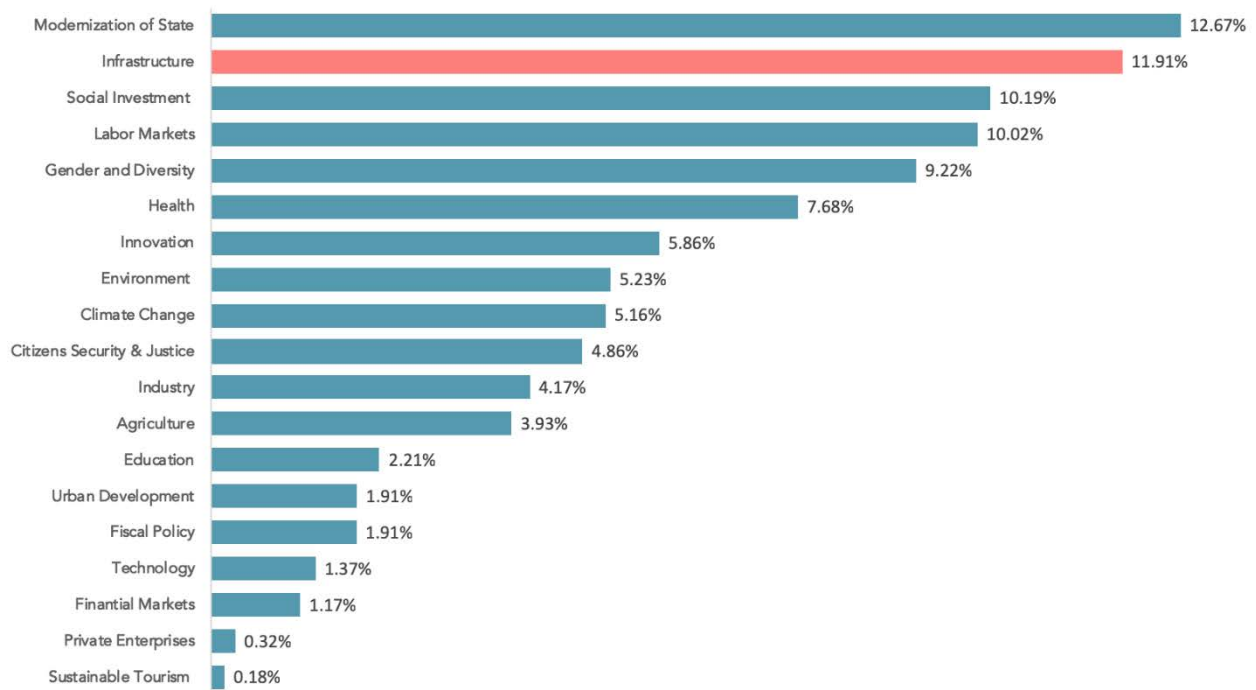
Infrastructure is a prominent theme in digital development conversation<sup>1</sup> in Latin America and the Caribbean, representing 12.2 percent of the development conversation between January 2016 to October 2018.<sup>2</sup> Infrastructure is the second most discussed sector after Modernization of the State.

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<sup>1</sup> The “development conversation” is how we define the consolidated view of public policy conversations on areas of interest to the Inter-American Development Bank (IDB), and it is based on the IDB’s sector taxonomy, made up of 21 sectors.

<sup>2</sup> The infrastructure conversation had 14,408,690 mentions, and the overall development conversation had 120,948,700 mentions during the time frame analyzed.

**Figure 1. Breakdown of the Development Conversation by Sector, Infrastructure Consolidated**



Looking at the three sectors that comprise Infrastructure, the high volume can largely be explained by conversations about Transportation, which is the sixth most discussed development sector (7.22 percent),<sup>3</sup> comparable to the Health sector. Water and Sanitation ranks thirteenth (2.99 percent),<sup>4</sup> and Energy seventeenth (1.70 percent).<sup>5</sup>

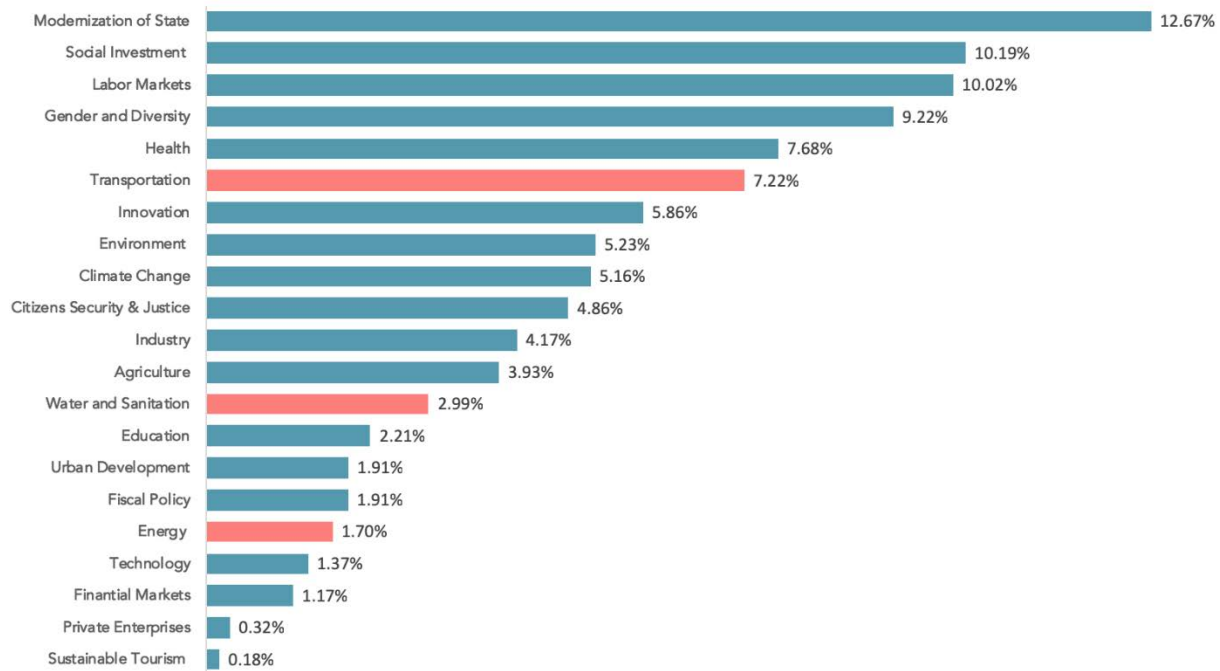
<sup>3</sup> Transportation had 8,735,633 mentions

<sup>4</sup> Water and Sanitation had 3,617,660 mentions

<sup>5</sup> Energy had 2,055,397 mentions



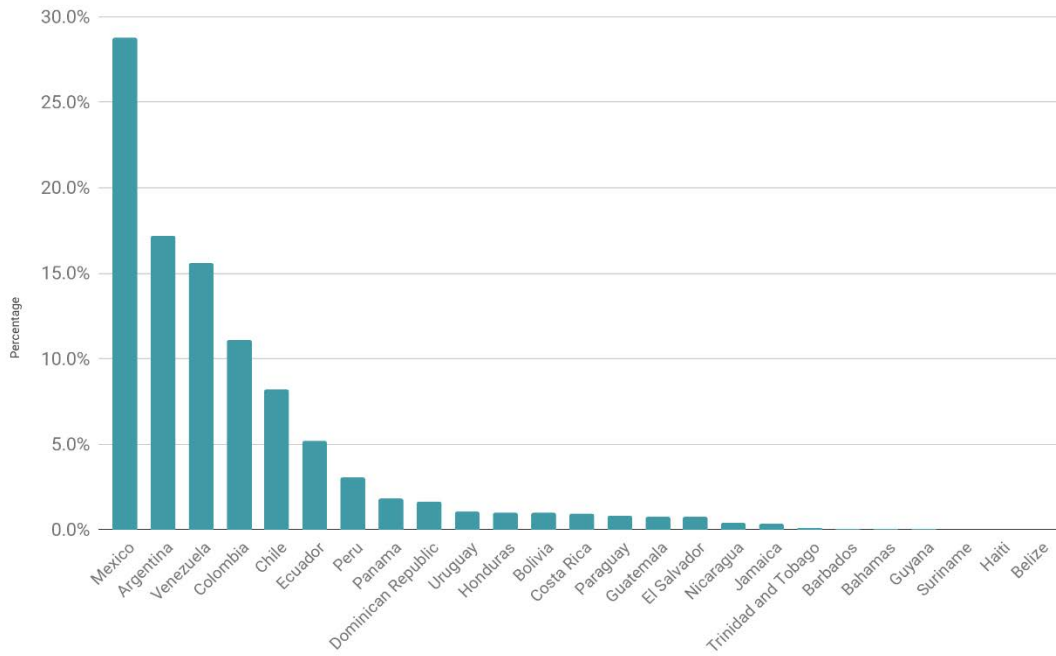
**Figure 2. Breakdown of the Development Conversation by Sector, Infrastructure Disaggregated**



Mexico generates the largest share of the regional infrastructure conversation at 28.8 percent.<sup>6</sup> Argentina, Venezuela and Colombia follow with 17.2 percent, 15.6 percent and 11.1 percent, respectively. All other countries contribute less than 10 percent each to the regional discussion, and all of the Caribbean combined accounts for less than 1 percent.

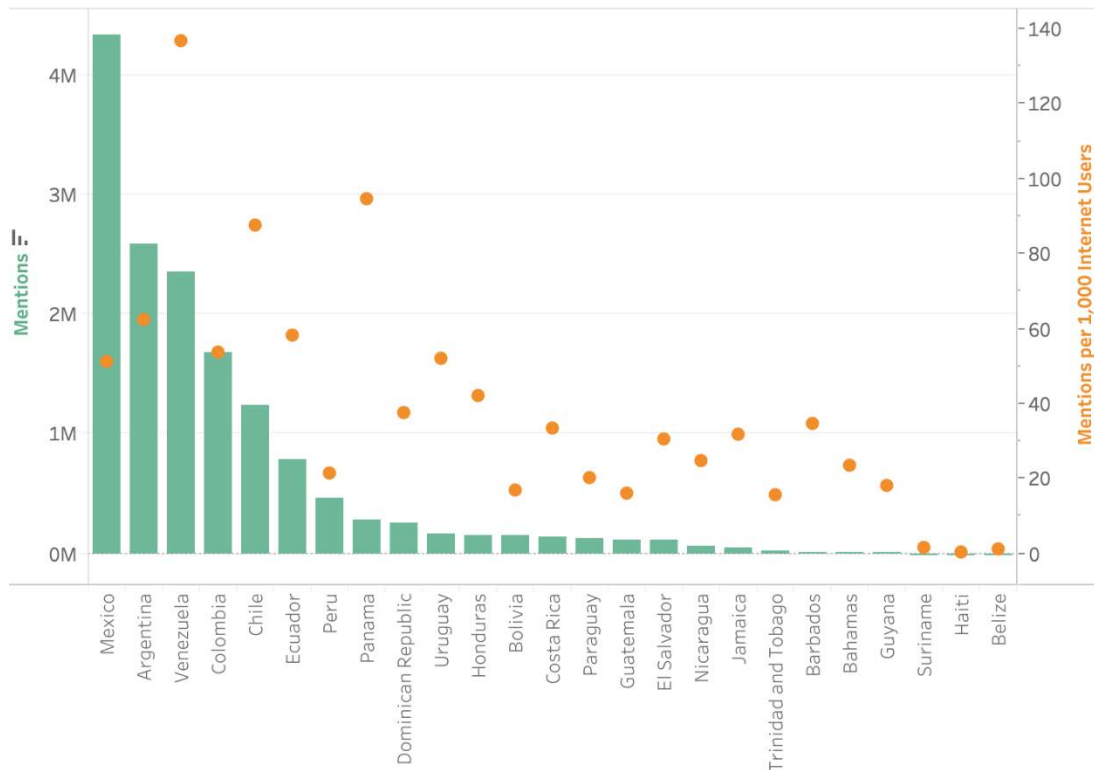
<sup>6</sup> Conversation both in Spanish and English

**Figure 3. Breakdown of the Infrastructure Conversation by Country**



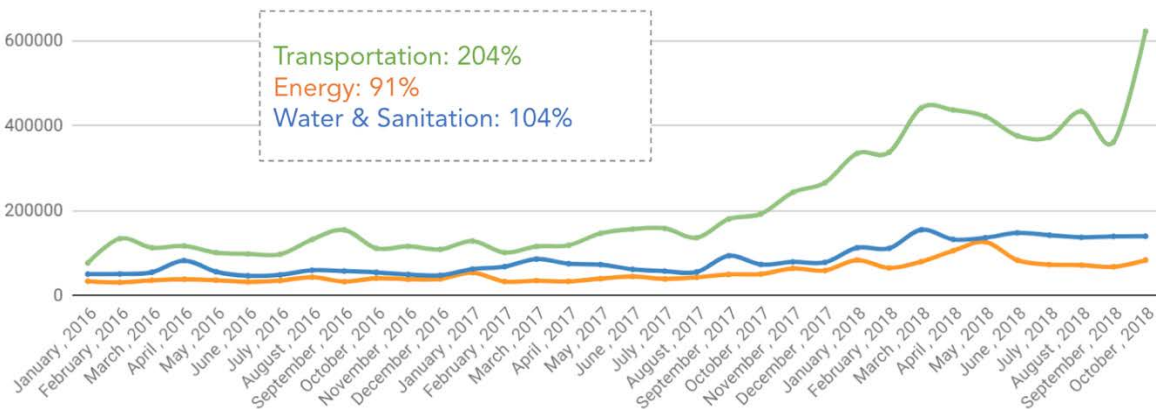
Adjusting the total number of mentions to 1,000 internet users, Venezuela is the country with the most conversation, followed by Panama and Chile.

**Figure 4. Mentions of Countries per 1,000 Internet Users**



The Infrastructure conversation grew by 157 percent from 2016 to 2018.<sup>7</sup> Among the three Infrastructure sectors, Transportation grew the most (204 percent), followed by Water and Sanitation (104 percent), and Energy (91 percent).

**Figure 5. Timeline of the Conversation by Sector (January 2016 - October 2018)**



<sup>7</sup> The development conversation grew by 163 percent from January 2016 to October 2018.

### ***1.1 Transportation***

Transportation is the most mentioned sector in the infrastructure conversation during the period analyzed. Conversation about Transportation centered on airports—particularly discussions related to the construction of the New International Airport of Mexico (NAIM) in Mexico City, which took over most of the conversation in 2018 and increased significantly from September 2018 to October 2018.

### ***1.2 Water and Sanitation***

Water and Sanitation is the second-most mentioned sector in the infrastructure conversation. The conversation focused on drinking water and water access with references to water interruptions and cuts in different cities in the region across Latin America and the Caribbean. The Water and Sanitation conversation peaked primarily when water services were interrupted, and on World Water Days, when the discussion focused on raising awareness about water conservation and access to clean water.

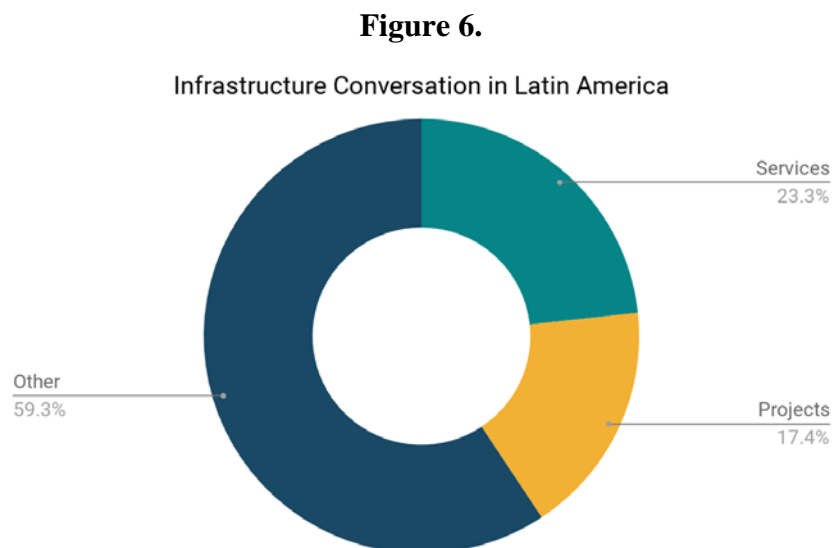
### ***1.3 Energy***

Energy is the third most mentioned sector in the infrastructure conversation. The Energy conversation centered on solar energy, renewable energy, and the environment, these topics gained popularity as they were part of political messages and presidential campaigns. The ongoing construction of hydroelectric dams in the region was another highly debated topic.

## **2. Infrastructure Issues Breakdown**

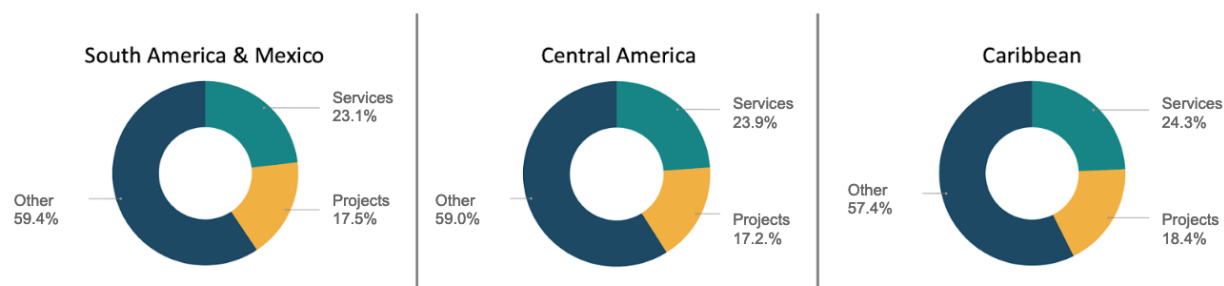
- Over half of the Water and Sanitation conversation is concentrated on infrastructure services issues, highlighting water shortages and cuts and service interruptions across the region. Meanwhile, conversations about Energy and Transportation cover a variety of topics—not directly related to services or projects—including general discussions on renewable and clean energy, hydroelectric dams, and references to airports.

While the Other category indeed represents the largest share of Infrastructure conversation at 59 percent, conversation on the area of interest, Services, represents 23 percent of the total conversation on Infrastructure in Spanish.<sup>8</sup>



This breakdown is similar across the sub-regions of Latin America and the Caribbean, with a very minor increase in conversation about projects in the Caribbean.

**Figure 7. Breakdown of the Conversation by Sub-region**

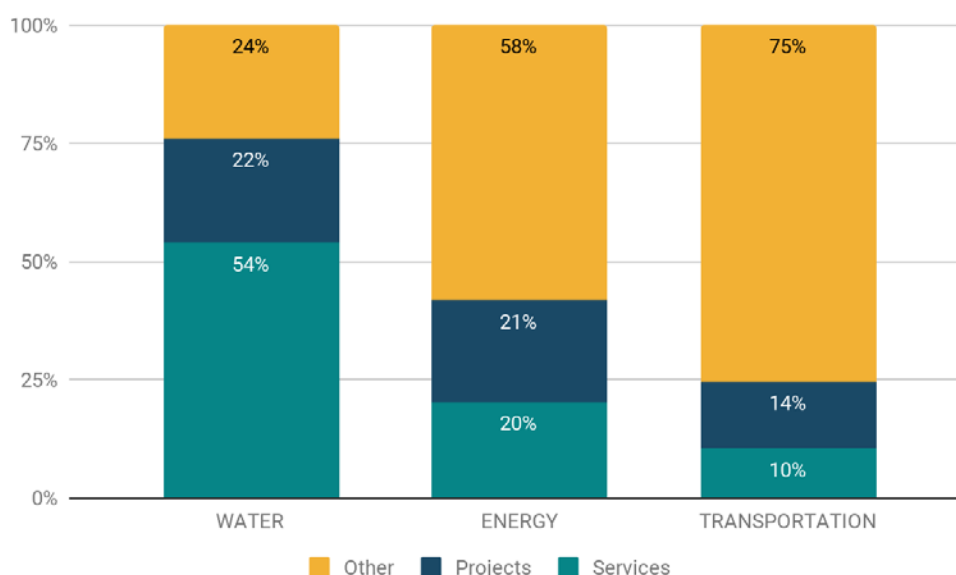


Looking at how these issues breakdown by sector, service is a pronounced theme in Water and Sanitation, with over half of the conversation. The service conversation in Water and Sanitation covers water shortages and cuts, as well as service interruptions.

<sup>8</sup> Conversation about Infrastructure services in Spanish-speaking countries excluding Venezuela.

Meanwhile, conversations about Energy and Transportation are mostly about other issues. In Energy, other issues include references to renewable energy highlighting a variety of topics from installation of solar panels to initiatives taking place outside the region to foster clean energy, as well as hydroelectric dam projects. In Transportation, other issues include references to airports, especially the New International Airport in Mexico City, terrorist attacks and problems with airport infrastructure due to earthquakes.

**Figure 8. Breakdown by Sector, January 2016 - October 2018**



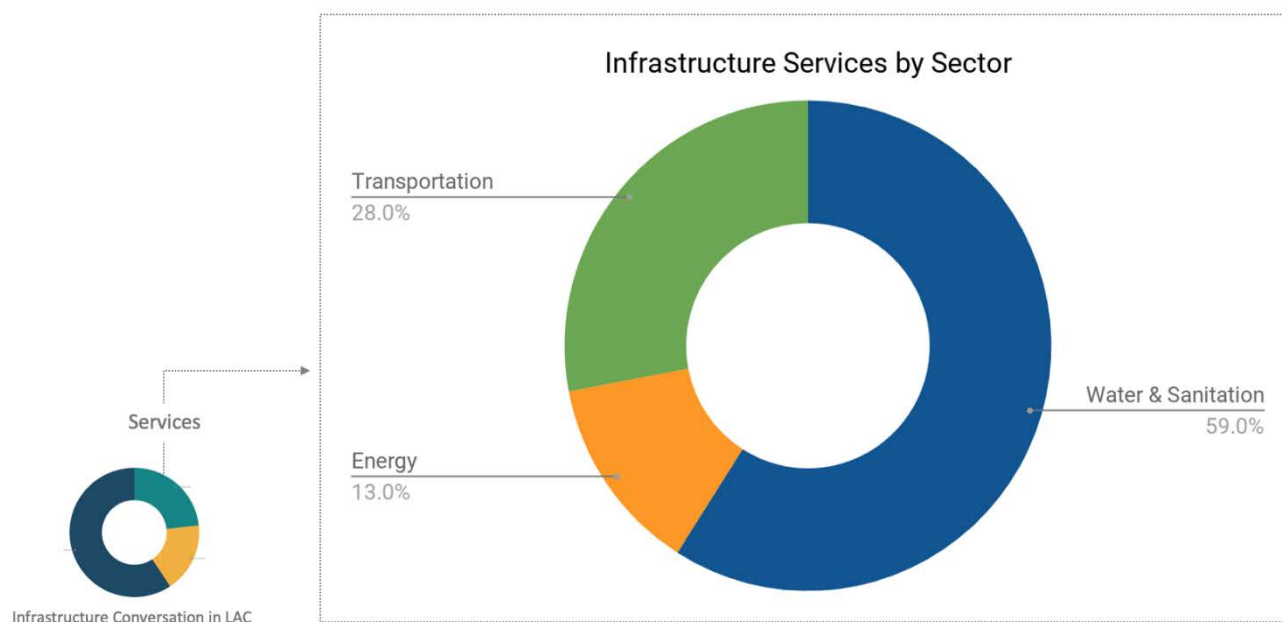
### 3. Infrastructure Services

- The Infrastructure Services discussion is predominantly comprised of Water and Sanitation service issues, including potable water supply and storage, largely generated by service interruption. This is true across countries and digital channels.
- Conversation about service-related issues for the three sectors differs by sector: Water and Sanitation tends to relate to service quality issues, and in particular interruptions; Energy deals more with access and especially expanding access to renewable energy; and Transportation service relates to price as well as quality, particularly in regard to safety on public transportation.

The conversation about infrastructure services—content related to cost, quality and access to infrastructure—is focused mostly on Water and Sanitation issues (59 percent), followed by

Transportation (27 percent) and Energy (13 percent). This breakdown is similar across the region, where over 50 percent of the conversation about infrastructure services in every country is related to Water and Sanitation. In Ecuador, El Salvador, and Belize over 70 percent of the conversation is related to water services.

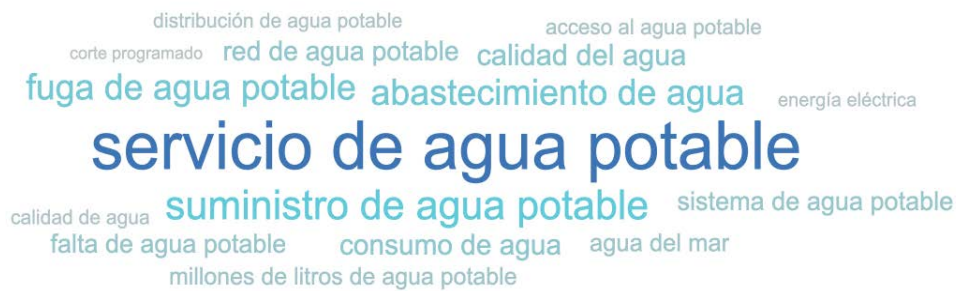
**Figure 9. Infrastructure Services by Sector**



### **3.1 Services: Water and Sanitation**

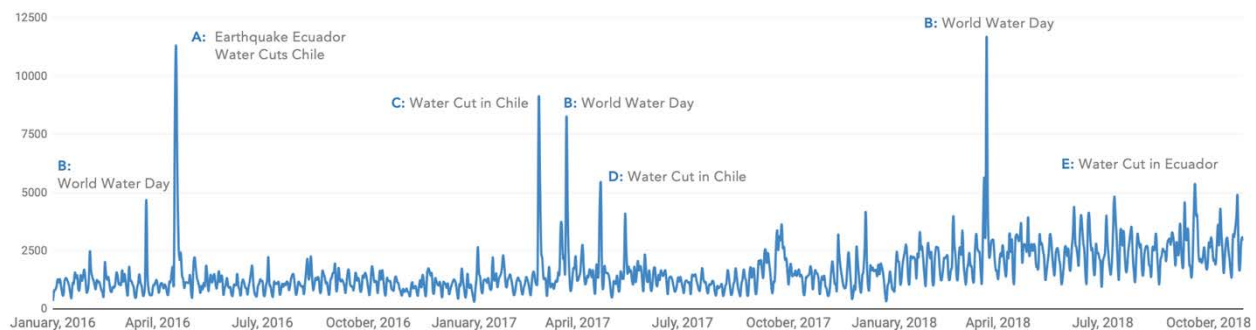
Service-related issues (cost, quality, access) represent over half (54 percent) of the Water and Sanitation conversation, significantly higher when compared to the other infrastructure sectors. Water and Sanitation service issues are focused on: *servicio de agua potable, suministro de agua potable, abastecimiento de agua, y fuga de agua potable*.

**Figure 10. Key Topics on Twitter: Water and Sanitation**



The water and sanitation conversation about services spikes considerably during water shortages and service interruptions, and on international awareness days such as World Water Day (March 22).

**Figure 11. Timeline of the Water and Sanitation Conversation Related to Services**



### 3.1.1 April 16-19, 2016: Earthquake in Ecuador and Water Cuts in Chile

In Chile, the conversation included complaints regarding Aguas Andinas services and announcements of water cuts and restoration times, including announcements of distribution points. In Ecuador, following the earthquake (April 16, 2016), references to lack of drinking water and water service dominated the conversation.

@covalle1969:

*Mínimo que #AguasAndinas pagué por los cortes de  
#agua lo mismo que nos cobra por reposición del servicio!*<sup>9</sup>

<sup>9</sup> <https://twitter.com/covalle1969/statuses/722167959851048960>



@Seguridad\_Ec:  
*“Empresas de agua potable están restableciendo el servicio”*  
@RicardoPatinoEC #EcuadorListoYSolidario #SismoEcuador <sup>10</sup>

### 3.1.2 March 22, 2016, 2017 and 2018: World Water Day

World Water Day conversations focused on water access around the world and other water-related statistics, and of water resources conservation.

@reddeemergencia:  
*Hoy es el día mundial del agua. En el mundo 1 de 10 habitantes del planeta no tiene acceso al agua potable. Cuidala.*<sup>11</sup>

@el\_pais:  
*#DiaMundialDelAgua. 2.100 millones de personas en todo el mundo no tienen acceso a un agua potable que haya sido tratada de forma segura ...*<sup>12</sup>

### 3.1.3 February 26, 2017: Water Cut in Chile

The city of Santiago suffered mayor water cuts due to high turbidity in the Maipo River, the main source of the city's drinking water. Mentions from and about Aguas Andinas related to water cuts updates, and supply schedules dominated the conversation.

@aguas\_andinas:  
*Aguas Andinas informó que paralizó sus plantas de agua potable por altas turbiedades en el Río Maipo.*<sup>13</sup>

### 3.1.4. April 20-21, 2017: Water Cut in Chile:

The conversation peaked due to major water cuts in Santiago. Mentions included Aguas Andinas' announcements and service updates.

@aguas\_andinas:  
*#AAInforma Aguas Andinas reinicia parcialmente la producción de agua potable.*<sup>14</sup>

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<sup>10</sup> [https://twitter.com/Seguridad\\_Ec/statuses/722490201654829057](https://twitter.com/Seguridad_Ec/statuses/722490201654829057)

<sup>11</sup> <http://twitter.com/reddeemergencia/statuses/712259740793970688>

<sup>12</sup> [https://twitter.com/el\\_pais/status/976726113367085056](https://twitter.com/el_pais/status/976726113367085056)

<sup>13</sup> [https://twitter.com/aguas\\_andinas/status/836042041855463424](https://twitter.com/aguas_andinas/status/836042041855463424)

<sup>14</sup> [https://twitter.com/aguas\\_andinas/statuses/855368876825169921](https://twitter.com/aguas_andinas/statuses/855368876825169921)

### 3.1.5 December 7, 2017: Water Cuts in Ecuador

The conversation increased due to the shortage of drinking water in Quito. Mentions included updates on the ongoing situation, and complaints pointing out the lack of water provision.

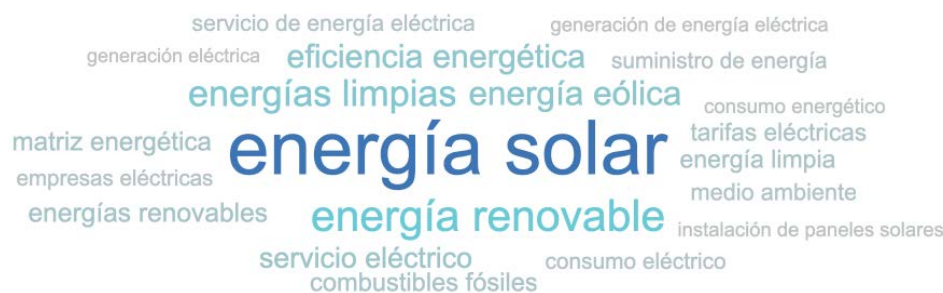
@lahoraecuador:  
*Así vivió #Quito este jueves la emergencia por  
desabastecimiento de agua potable #QuitoSinAgua*<sup>15</sup>

@UNQuito:  
*#Quito / La vía Simón Bolívar (sentido sur- norte) fue cerrada  
por moradores para exigir abastecimiento de agua con tanqueros*<sup>16</sup>

### 3.2 Services: Energy

Service issues represent 20 percent of the total energy conservation, and the most mentioned topics include references to renewable energy such as: *energía solar*, *energía renovable*, *energías limpias*, *energías eólicas*.

**Figure 12. Key Topics on Twitter: Energy Service**



Peaks in the Energy conversation are driven by political discussions, including critiques of politicians' actions or statements related to expanding access to clean energy during presidential elections—particularly in Colombia and Mexico.

<sup>15</sup> <https://twitter.com/lahoraecuador/statuses/938935997026439171>

<sup>16</sup>

[https://twitter.com/UNQuito/status/938845572928286721?ref\\_src=twsrc%5Etfw%7Ctwcamp%5Etweetembed%7Ctwtterm%5E938845572928286721&ref\\_url=https%3A%2F%2Fapp.brandwatch.com%2Fproject%2F1998175598%2Fdashboards%2F563053](https://twitter.com/UNQuito/status/938845572928286721?ref_src=twsrc%5Etfw%7Ctwcamp%5Etweetembed%7Ctwtterm%5E938845572928286721&ref_url=https%3A%2F%2Fapp.brandwatch.com%2Fproject%2F1998175598%2Fdashboards%2F563053)

**Figure 13. Timeline of the Energy Conversation Related to Services**



### 3.2.1 April 24, 2018

A tweet from Argentine journalist Guillermo Lobo criticizing the energy subsidies went viral with 2,697 retweets. This tweet generated online discussions with people supporting and criticizing the management of energy subsidies.

*@GuilleLobo:*

*Robaron todo, rompieron la matriz energética, mintieron.  
Los “subsídios” a la energía eran retornos para sepultar los bolsos,  
comprarse campos, aviones y yates. Son los mismos que hablan de tarifazos.<sup>17</sup>*

### 3.2.2 June 12, 2018

The Mexican Presidential debate generated debate in the energy conversation due to a tweet from Ricardo Anaya announcing his plans to install solar panels on every house to reduce energy costs.

*@RicardoAnayaC:*

*En mi gobierno, instalaremos paneles solares  
en el techo de las casas. Con tres módulos es suficiente para que el recibo de  
luz eléctrica llegue en ceros a los hogares mexicanos.  
Este será un programa nacional. #DebateINE<sup>18</sup>*

<sup>17</sup> <https://twitter.com/GuilleLobo/status/988538857892253698>

<sup>18</sup> <https://twitter.com/RicardoAnayaC/status/1006750663764684800>

### 3.2.3 March 5, 2018

A tweet from Colombia's Presidential candidate Gustavo Petro pointing out the benefits of "smart electric networks" was highly shared.

*@petrogustavo: Cuando una casa tiene paneles solares suficientes para generar su consumo de energia no necesita de redes. Pero la red eléctrica inteligente puede permitir que el sobrante de energía se disponga en la red o recibirla cuando hay déficit. El costo marginal tiende a cero.<sup>19</sup>*

### 3.2.4 December 8-9, 2017

A tweet from Chile's former President Michelle Bachelet sharing an interview highlighting Chile's "Energy Revolution" during her government received 3,945 retweets and 6,675 likes.

*@mbachelet: Debemos sentir orgullo de la revolución que hemos realizado en la matriz energética, que ha puesto a Chile como ejemplo mundial, en palabras de @algore. Mejor regulación y mayor competencia abrieron la puerta a energía más limpia y barata.<sup>20</sup>*

## 3.3 Services: Transportation

Services represents 10 percent of the total Transportation conversation, which focuses on *sistema de transporte, seguridad vial, transporte urbano*, in addition to concrete mentions of prices, particularly *10 pesos* and *30 pesos*.

**Figure 14. Key Topics on Twitter: Transportation Services**

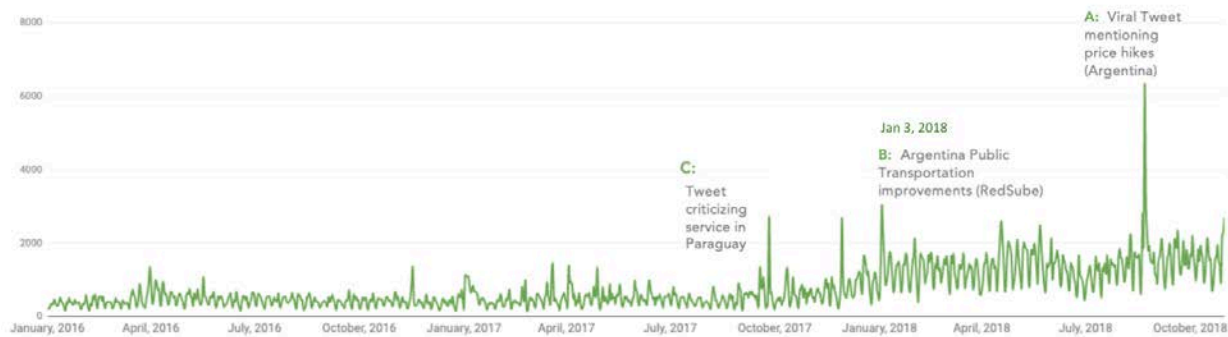


Conversation about Transportation services spiked around criticisms and complaints about transportation systems and messages of politicians.

<sup>19</sup> <https://twitter.com/petrogustavo/status/970793653227663360>

<sup>20</sup> <https://twitter.com/mbachelet/status/939207465677348865>

**Figure 15. Timeline of the Transportation Conversation Related to Services**



### 3.3.1 August 21, 2018

The conversation increased significantly following a tweet from @Nachoeg\_ criticizing price hikes in public transportation and gasoline, along with other issues which received 17,249 retweets and 40,012 likes.

@nachoeg\_ :

*La gente me da vergüenza. Dólar a 30 pesos, cualquier transporte público a más de 10 pesos, nafta casi 30 pesos, LA UNIVERSIDAD PUBLICA EN PELIGRO? ...*<sup>21</sup>

### 3.3.2 January 3, 2018

The conversation increased due to retweets of a tweet from Argentina's Transportation Minister Guillo Dietrich announcing that RedSube will help improve public transportation.

@Guillodietrich

*Con #RedSUBE vamos a seguir mejorando el transporte: haciendo metrobuses, pavimentando calles, instalando cámaras para mayor seguridad y generando un sistema predictivo. Trabajamos por un transporte público más confiable, rápido y seguro.*<sup>22</sup>

### 3.3.3 November 29, 2017

A tweet in Paraguay referencing quality of public transportation, among other public services, was retweeted multiple times generating a notable peak in the conversation (2,158 retweets).

<sup>21</sup> [https://twitter.com/nachoeg\\_/status/1032060854555107329](https://twitter.com/nachoeg_/status/1032060854555107329)

<sup>22</sup> <https://twitter.com/Guillodietrich/status/948558954589839360>

@ferbemore

PY

*Mala educación pública: pagás colegio privado.*

*Mala salud pública: pagás seguro médico.*

*Mala seguridad pública: pagás guardia privada.*

*Mal transporte público: comprás un auto.*

*Mal servicio de energía: comprás generador.*

*Mala calidad del agua corriente: comprás agua mineral.<sup>23</sup>*

## 4. Infrastructure Projects

- The Infrastructure conversation related to projects concentrates on the Transportation sector, with fewer references in Water and Sanitation, and Energy. This breakdown is similar across the region and especially prominent in Mexico, where transportation represents over 75 percent of project-related discussion.
- News and controversy related to the construction of the New International Airport of Mexico City, discussion about hydroelectric dams in the region, and road construction aiming to improve road safety in Argentina were among the narratives driving the discussion.

The Infrastructure conversation related to projects, which consists of announcements and information about government projects and advancements—including references to construction, project launches, new programs and initiatives, among other topics<sup>24</sup>—focuses mostly on Transportation projects (60 percent), followed by Water and Sanitation (20 percent) and Energy (20 percent).

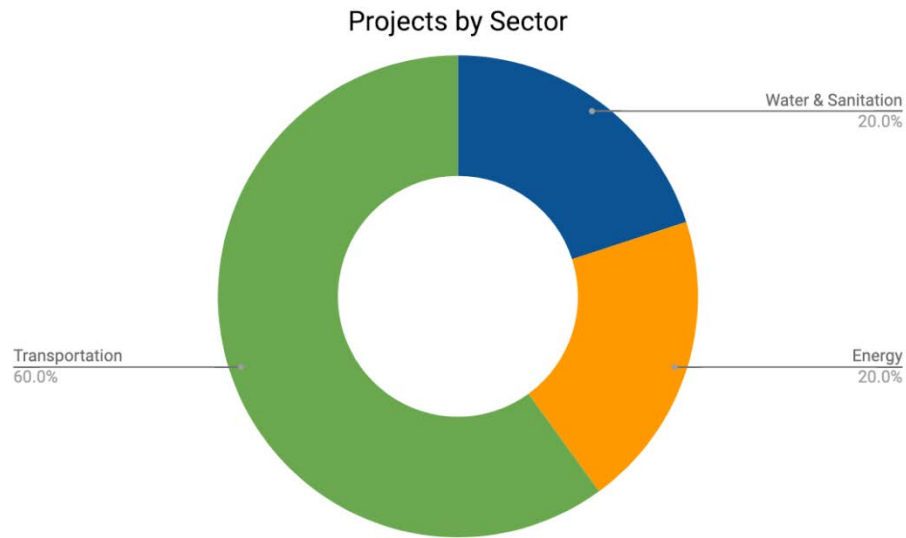
This is true across all Spanish-speaking countries analyzed, and especially prominent in Mexico, where transportation represents 77 percent of infrastructure project discussion. Meanwhile, in Panama and Peru infrastructure project conversation leans towards Water and Sanitation projects, at 40 percent and 41 percent, respectively.

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<sup>23</sup> <https://twitter.com/ferbemore/status/935854246230155264>

<sup>24</sup> The category of projects included mentions using keywords related to construction efforts, and infrastructure programs or projects. e.g., *proyecto, construcción, obras, inauguración*, etc.

**Figure 16. Projects Conversation by Sector**



The infrastructure projects conversation was dominated by the construction of the New International Airport in Mexico City (*construcción del nuevo aeropuerto*).

**Figure 17. Key Topics on Twitter: Infrastructure Projects**



Mentions of the airport included the announcement to cancel the construction of the New International Airport (NAIM),<sup>25</sup> and this conversation generated both positive and negative reactions. Mentions of the airport also included comments and information about the “Consulta NAIM” a public consultation where the Mexican government asked citizens about their opinions regarding the new airport.<sup>26</sup>

<sup>25</sup> <https://www.eluniversal.com.mx/cartera/economia/cancelar-el-aeropuerto-implica-un-retraso-de-5-10-anos-iata>

<sup>26</sup> <https://politica.expansion.mx/mexico/2018/10/25/los-puntos-clave-de-la-consulta-sobre-el-futuro-del-naim>

Other prominent topics included the ongoing construction of hydroelectric dams in the region. The construction of a highway aiming to improve road safety and transit in Argentina (*seguridad vial*)<sup>27</sup> was also noticeable in the discussion.

## 5. Other Infrastructure Issues

- The conversation about other infrastructure issues accounted for over half of the total infrastructure conversation, yet it is less prominent in the Water and Sanitation sector, where it only accounted for a fourth of the conversation.
- Discussion of wastewaters and solid waste, water companies and water conservation were among some of the issues covered in Water and Sanitation, while the energy conversation centered on renewable energy highlighting a variety of topics from installation of solar panels to initiatives taking place outside the region to foster clean energy.

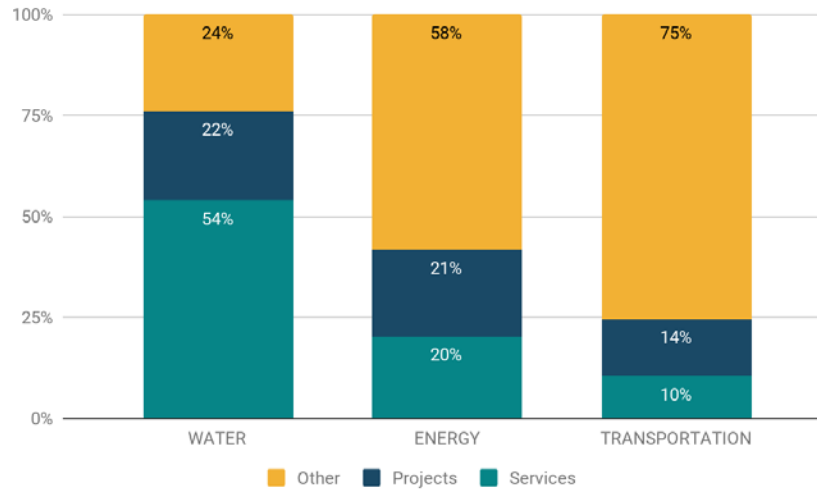
The conversation about other issues not related to services or projects includes references to airports, renewable, clean energy, hydroelectric dams, and waste management, among other topics, without an overarching theme. These conversations accounted for 59.5 percent of the total infrastructure conversation, and this breakdown was consistent throughout regions and countries. However, the conversation related to “other” was less prominent in the Water and Sanitation sector, where it accounted for only 24 percent of the conversation.

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<sup>27</sup> <https://twitter.com/Guillodietrich/statuses/1022584937696972802>



**Figure 18. Breakdown of Other Issues by Sector**



### **5.1 Other: Water and Sanitation**

In Water and Sanitation, the conversation about other issues is less prominent than in the two sectors, accounting only for 24 percent of the overall water conversation. A variety of topics are covered in the “other issues” conversation including wastewaters and solid waste, water companies and water conservation. Mentions of wastewaters and solid waste included government announcements and updates about residual water treatment plants,<sup>28</sup> mentions pointing out the impact and importance of solid waste management,<sup>29</sup> and some mentions of new technologies.

*@SinEmbargoMX*

*Investigador de la UNAM crea método que descontamina aguas residuales con energía solar*

<http://bit.ly/2Ab0JsN> <sup>30</sup>

The conversation also includes mentions of water companies, particularly related to events, as well as mentions pointing out the importance of taking care of water and water resources.

*@Ecogranjero*

*Cuidemos el #agua Y generemos conciencia entre todos*

*Muchas personas en muchos lugares haciendo pequeñas cosas pueden cambiar el mundo* <sup>31</sup>

<sup>28</sup> <https://twitter.com/RobRmzdelaParra/statuses/954090048592470017>

<sup>29</sup> <https://twitter.com/GADManabi/statuses/913804420130967552>

<sup>30</sup> <http://twitter.com/jorgevdominguez/statuses/932559930225180672>

<sup>31</sup> <https://twitter.com/Ecogranjero/status/869614522784522240>

## 5.2 Other: Energy


In Energy, approximately 50 percent of the conversation is related to renewable energy, and 13 percent is about hydroelectric dams. In the renewable energy conversation, there are references to solar energy, wind energy and clean energy with mentions covering a variety of topics including announcements of installation of solar panels,<sup>32</sup> plans and advances in expanding renewable energy in different countries across the region.<sup>33</sup> Mentions also include references to efforts and initiatives taking place in other non-Latin American countries, including Australia<sup>34</sup> and the United States,<sup>35</sup> among others.

The conversation about hydroelectric dams centered on Ituango in Colombia, and there were also mentions of hydroelectric power in Ecuador including “Hidroeléctrica Sopladora” and other activities in Chile.

@tudiscovery

*Costa Rica lleva más de 300 días abasteciéndose solo con energía renovable. El 79% de la energía se logró mediante el agua, el 11% gracias al viento, el 10% de geotermia y un 1% de la biomasa y el sol. #DNews* <sup>36</sup>  
(1,318 Retweets, 2,266 Likes)

@cseebach

*Notable Chile avanzando firme hacia una matriz eléctrica renovable. “No convencionales” alcanzan 20% en octubre, sumado al resto ya nos acerca a un total de energía renovable de 50%*  
 @cfinat <sup>37</sup>

@marquitospena

*Celebramos que el Senado le haya dado sanción definitiva a la Ley de Generación Distribuida. De esta forma, los hogares de todo el país podrán generar su propia energía eléctrica de origen renovable e inyectar a la red la que no utilicen. @Renovables\_Ar* <sup>38</sup>  
(1,071 Retweets, 2,770 Likes)

*La Hidroeléctrica #Sopladora genera 487 MW al Sistema Nacional Interconectado*  
*#EcuadorEsEnergía* <sup>39</sup>

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<sup>32</sup> <https://twitter.com/danielalozanocu/statuses/983339591615877120>

<sup>33</sup> <https://twitter.com/cseebach/statuses/930027062584279040>

<sup>34</sup> <https://twitter.com/Ecogranjero/statuses/912440078760398848>

<sup>35</sup> <https://twitter.com/elespectador/statuses/984412820920872965>

<sup>36</sup> <https://twitter.com/tudiscovery/statuses/948660241620647937>

<sup>37</sup> <https://twitter.com/cseebach/statuses/930027062584279040>

<sup>38</sup> <https://twitter.com/marquitospena/status/936286999870427136>

<sup>39</sup> [https://twitter.com/Presidencia\\_Ec/statuses/768854530649911296](https://twitter.com/Presidencia_Ec/statuses/768854530649911296)

### 5.3 Other: Transportation

In Transportation, approximately 55 percent of the conversation about “other issues” is related to airports. The airport conversation is mostly about the New International Airport of Mexico City. Mentions included criticisms of the cancellation of construction<sup>40</sup> and mentions in favor of the project’s cancellation.<sup>41</sup> There are also many references to and opinions about public consultation led by the Mexican government.

Among the airport mentions, there references to international events, including air crashes and investigations,<sup>42</sup> and terrorist attacks such as the Brussels terrorist attack on March 22, 2016. The earthquake in Mexico (September 19, 2017) also generated conversation due to structural damages and flight delays.

@reformanegocios

*El terremoto de este martes dañó las instalaciones del Aeropuerto Internacional de la Ciudad de México <http://bit.ly/2hpf3H> #sismocdmx*<sup>43</sup>

## 6. Complaints and Concerns

- Complaints covered a range of topics including water shortages and leakages, lack of good service and quality in public transportation, energy cost, and management problems among other topics. However, as seem in most social media discussion, users tend to retweet someone else’s complaint (more than 60 percent) rather than express their own concerns directly.

We analyzed social perceptions and complaints about services in the three sectors to identify the major areas of concern in the region. Water and Sanitation was the sector where most complaints were identified (62 percent), followed by Transportation (24 percent) and Energy (14 percent).

Complaints covered a range of topics including water shortages and leakages, lack of good service and quality in public transportation, energy cost, and management, among other topics.

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<sup>40</sup>

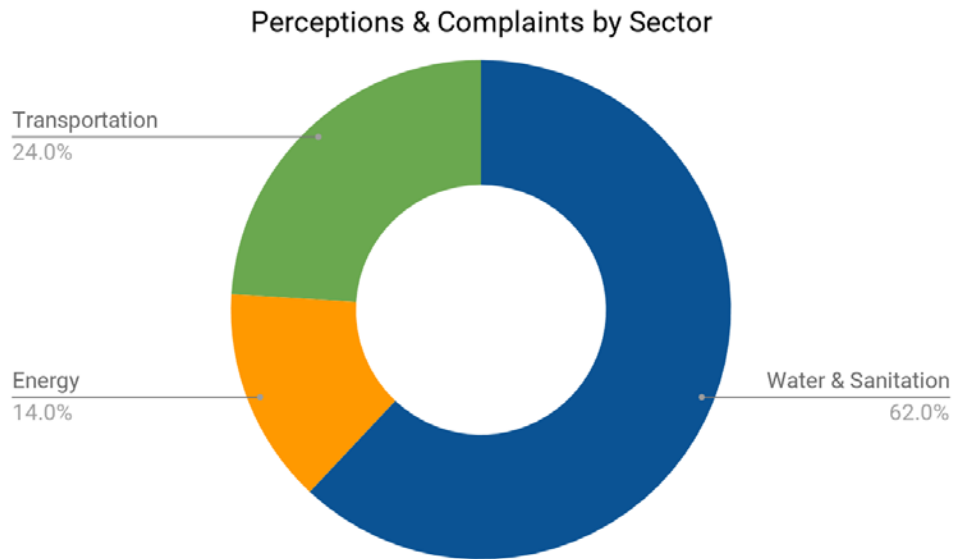
[https://twitter.com/VRubioMarquez/status/1057352913952038912?ref\\_src=twsrc%5Etfw%7Ctwcamp%5Etweetembed%7Ctwterm%5E1057352913952038912&ref\\_url=https%3A%2F%2Fapp.brandwatch.com%2Fproject%2F1998175598%2Fdashboards%2F563053](https://twitter.com/VRubioMarquez/status/1057352913952038912?ref_src=twsrc%5Etfw%7Ctwcamp%5Etweetembed%7Ctwterm%5E1057352913952038912&ref_url=https%3A%2F%2Fapp.brandwatch.com%2Fproject%2F1998175598%2Fdashboards%2F563053)

<sup>41</sup> <http://twitter.com/AldoEmmanuelCo1/statuses/1057473113384833025>

<sup>42</sup> <https://www.eluniverso.com/noticias/2018/10/30/nota/7026569/identifican-victimas-accidente-aereo-indonesia>

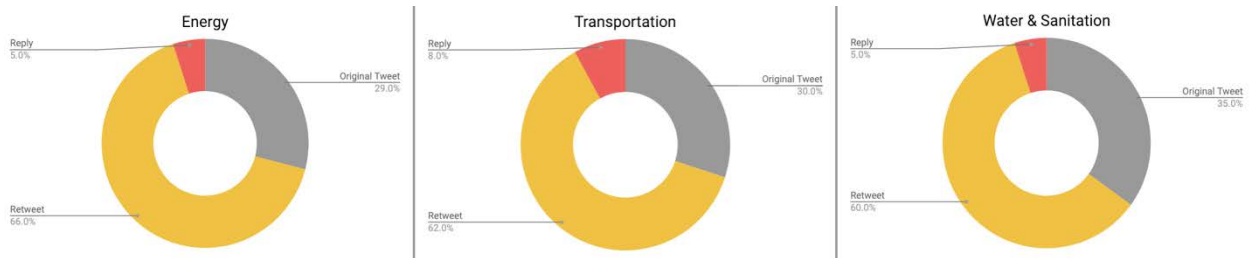
<sup>43</sup> <https://twitter.com/reformanegocios/status/910344590653353984>

**Figure 19. Breakdown of Conversation by Sector**



Most individuals—over 60 percent in the three sectors—expressed their concerns by retweeting others’ complaints rather than expressing opinions themselves via original mentions, and a smaller share of users used comments/replies to complain.

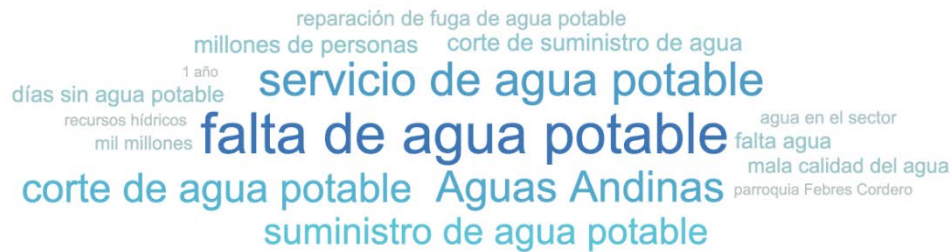
**Figure 20. Breakdown of Twitter Conversation by Original Mentions, Retweets, and Replies**



### **6.1 Water and Sanitation**

Mentions in Water and Sanitation were mostly about: *falta de agua potable, servicio de agua potable, corte de agua potable*. There were also mentions of *mala calidad de agua*.

**Figure 21. Key Topics among Complaints in the Water and Sanitation Conversation**



Mexico and Chile were the countries with the most mentions. Chile accounted for 23 percent of the conversation share as various water cuts took place in the country, and Mexico accounted for 26 percent, with mentions making references to the Iztapalapa area of the city of Puebla, which suffered water shortages after the 2017 earthquake.

@lasillarota:

*Sucia y con olor a caño, así reciben agua en #Iztapalapa tras #MegaCortedeAgua Desde hace años reciben en sus casas agua de mala calidad* <sup>44</sup>

## 6.2 Energy

Mentions related to Energy were about *Servicio de energía eléctrica, empresas eléctricas, and energía solar*.

**Figure 22. Key Topics among Complaints in the Energy Conversation**



Mentions of *servicio de energía eléctrica* were references to bad service and complaints due to lack of electricity for hours.

<sup>44</sup> <https://twitter.com/lasillarota/statuses/1060603946065166337>

@ViviMirandal:  
*#ElectricaribeRindeCuentas En este momento transmisión por @CanalTelecaribe  
Habrá operador que sea competente? El caribe sigue y seguirá pagando el mal servicio de  
energía eléctrica? Atentos a este proceso!*<sup>45</sup>

@Alveiro\_: *Por favor @CodensaEnergia mejorar calidad del servicio en zonas rurales como  
@GuascaAlcaldia . Vereda Santa Lucía 14 horas sin energía, sin explicar motivo.  
@Superservicios y @CundinamarcaGob . Guasca también merece calidad en el servicio  
eléctrico.*<sup>46</sup>

Mentions of *energía solar/energía renovable* point out the use of solar energy as a low-cost alternative in response to high energy costs, and other mentions note the high cost of solar energy. Other mentions, especially in Panama, criticized the lack of government incentives to change towards solar energy.<sup>47</sup>

Argentina (24 percent) and Colombia (22 percent) were the countries with the most mentions. In Argentina, there were mentions pointing of outages of energy service lasting up to up to eight hours in various.<sup>48</sup> Bad service from Electricaribe was mentioned in Colombia.<sup>49,50</sup>

Three power outages in Argentina, Ecuador, and Peru were analyzed to see if they sparked conversation on social media or the news. However, none of the analyzed power outages generated significant conversation on digital media.

### 6.2.1 Ecuador

On October 20, 2016, only 21 percent of mentions are related to a power outage, with many of these mentions criticizing hydroelectric plants in the country. Mentions on this day do not represent a significant peak in the conversation.

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<sup>45</sup> <https://twitter.com/ViviMirandal/statuses/1036992699822428168>

<sup>46</sup> [https://twitter.com/Alveiro\\_/statuses/1021108761413472256](https://twitter.com/Alveiro_/statuses/1021108761413472256)

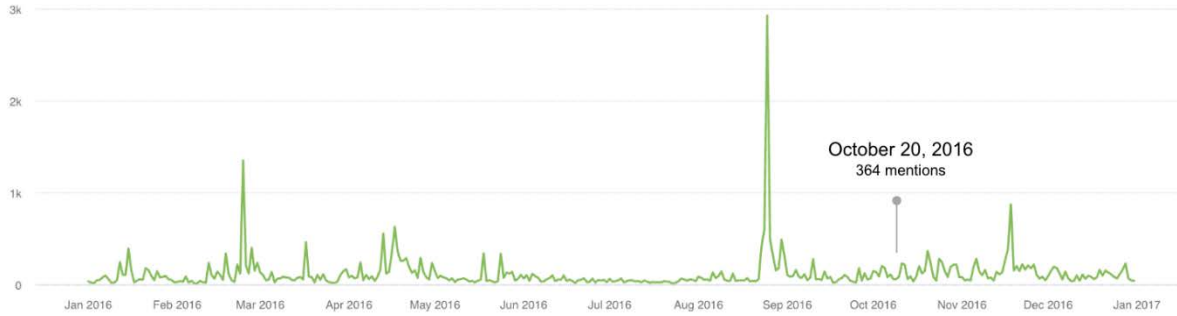
<sup>47</sup> <https://twitter.com/RitmoEquis/statuses/1001207559938854912>

<sup>48</sup> <https://twitter.com/DanielaBambill/statuses/995122805242056704>

<sup>49</sup> <https://twitter.com/VickyDavilaH/statuses/796051248420179969>

<sup>50</sup> <https://twitter.com/LISETHFERNANDEZ/statuses/1057689446454321153>

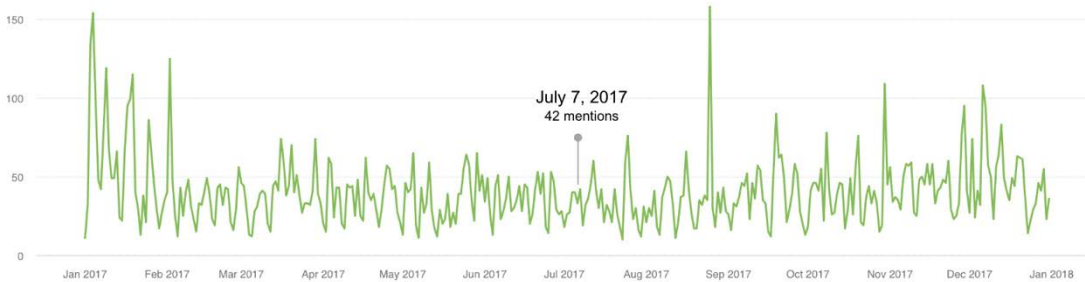
**Figure 23. Energy Conversation in Ecuador**



### 6.2.2 Peru

The conversation on July 7, 2017 does not show a significant increase in volume and there are no relevant mentions to power outages. There are only 4 relevant mentions to power outages in Lima on July 6, 2017. These mentions are merely informative and do not trigger a discussion.

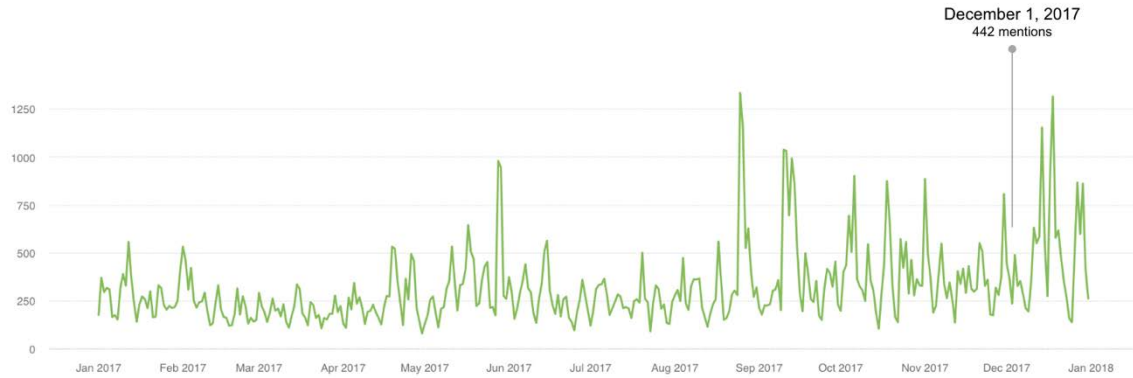
**Figure 24. Energy Conversation in Peru**



### 6.2.3 Argentina

The conversation peaked on November 30, 2017 with the approval of the “Ley de generación distribuida.” The power outage of December 1, 2017 did not trigger a discussion.

**Figure 25. Energy Conversation in Argentina**



### 6.3 Transportation

Mentions related to Transportation covered *transporte urbano, mala calidad, pésimo servicio, mal servicio*.

**Figure 26. Key Topics among Complaints in the Transportation Conversation**



Mentions of *Transporte Urbano* included complaints due to the rising costs of public transportation in many mentions conversations about cost are tied with the quality of transportation.

*@licmariajulia: Es un hecho: sí habrá aumento en las tarifas del transporte urbano; el gobierno dice que es un pesito, pero ¿para el usuario? ¡pregúntele!*<sup>51</sup>

Mentions of *Mal Servicio* included complaints about the quality of vehicles and service. Among the mentions there are references to Uber, with people pointing out Uber as a good

<sup>51</sup> <https://twitter.com/licmariajulia/statuses/941756168417968129>



alternative to “bad public transportation” and taxis<sup>52</sup> and in other cases complaining about poor quality of Uber service.<sup>53</sup>

*@testigocreacion: @HectorSerranoC @ManceraMiguelMX mal servicio, malas unidades y ahora altos precios del transporte público... es correcto? Cc @LBallesterosM*<sup>54</sup>

*@Manuel95lopez: Que pésimo sistema de transporte público tiene @Valledupar buses viejos, demora en las rutas @TutoUhiaAlcalde @MEPREOCUPAVALLE 😞mal servicio*<sup>55</sup>

Mexico (53 percent) was the country with the most mentions, which mainly involved the cost and quality of public transportation.

*@echd: Replying to @gustavomlemus  
El incremento a la tarifa es alarmante, pero más alarmante las condiciones del “sistema” de transporte urbano, si fuera de primer mundo al menos tendría “justificación”. Justificación sin valor, pues las tarifas son ajenas a la realidad económica de la sociedad*<sup>56</sup>

## 7. Public Opinion about Infrastructure

- People do not express their own thoughts and opinions on infrastructure in large volume and instead rely on Twitter to share informative media (news articles, blogs) related to infrastructure issues.
- Of those individuals discussing infrastructure issues, quality of service is the most discussed issue, followed by price and access to services. The quality theme is linked to Water and Sanitation and Transportation sectors, while access appears as the most discussed area in Energy.

### 7.1 Individual Tweeters Sample

In order to isolate infrastructure conversation according to the perspectives of individual people in the region, a sample of the 50 most active<sup>57</sup> individual Twitter accounts from each infrastructure sector was selected.<sup>58</sup>

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<sup>52</sup> <https://twitter.com/danferbenitez/status/989311490367868929>

<sup>53</sup> <https://twitter.com/victorsantos89/statuses/913620895872245760>

<sup>54</sup> <https://twitter.com/testigocreacion/statuses/814882221869780992>

<sup>55</sup> <https://twitter.com/Manuel95lopez/statuses/830389826142748672>

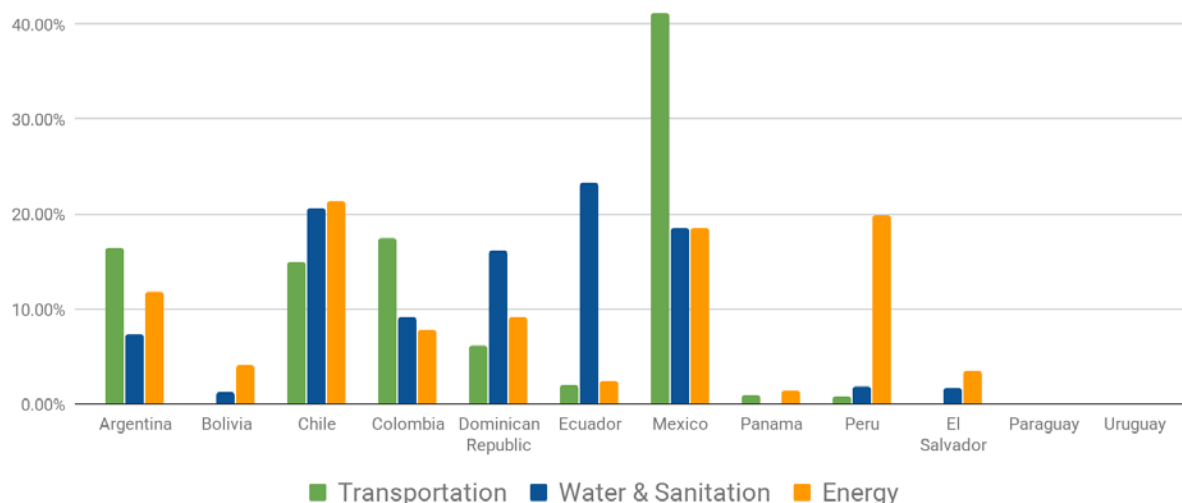
<sup>56</sup> <https://twitter.com/echd/statuses/1041798632645779456>

<sup>57</sup> Level of activity was defined as number of mentions.

<sup>58</sup> To reach the sample, twitter accounts that use keywords related to government, media, news, alerts in their bio were excluded, as well as verified accounts and accounts defined as an organization based on their profile.

Breaking down by sector, individual tweeters discussing Transportation are predominantly from Mexico (41 percent), while Ecuador leads the individual Water and Sanitation discussion (24 percent), and Energy mentions are concentrated in Chile (21 percent) and Peru (19 percent).

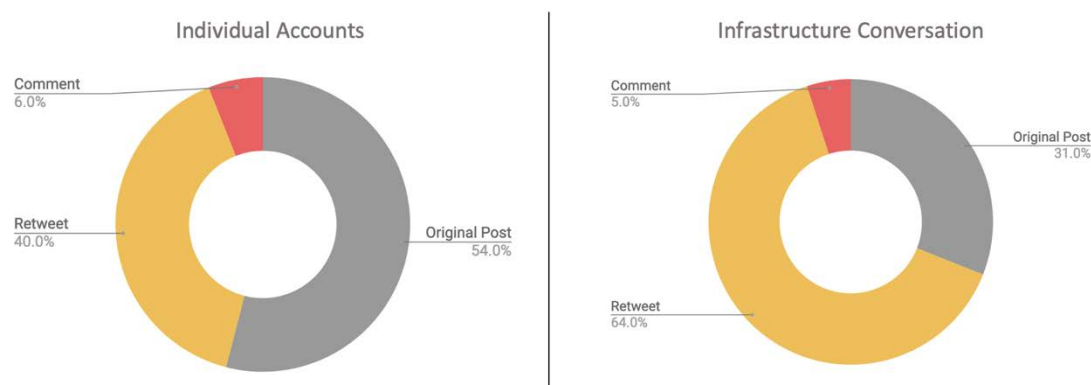
**Figure 27. Breakdown by Country and Sector of the Sample of Twitter Individual Accounts**



## 7.2 Individual Twitter Activity

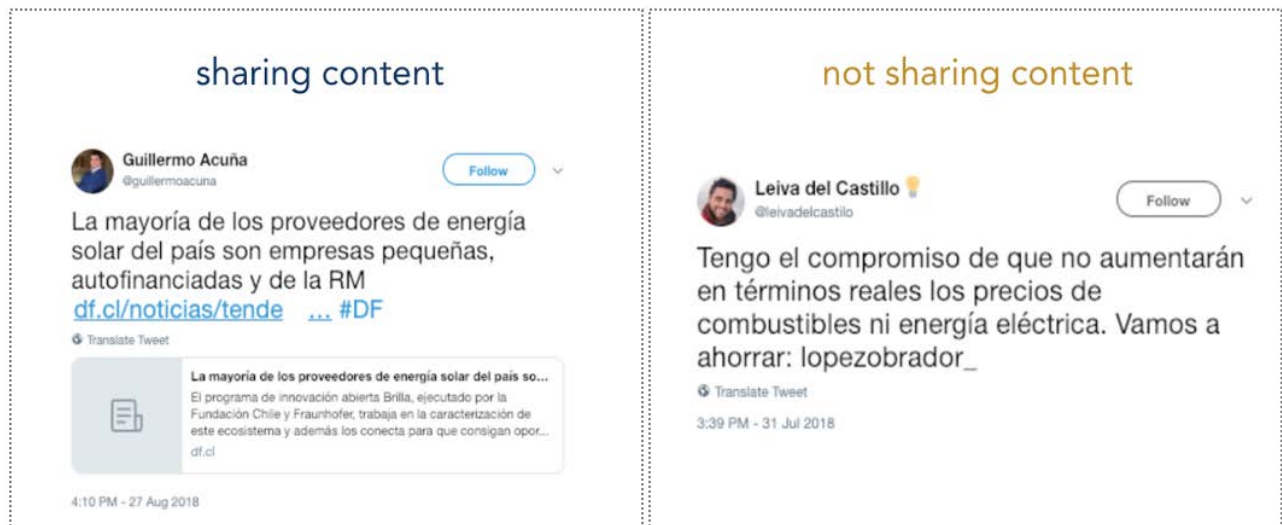
Twitter conversation generated by the sample of individual accounts has a larger share of original posts (54 percent) than the broader infrastructure conversation, yet the volume of retweets is still high at under half of the content produced by individuals (40 percent).

**Figure 28. Breakdown of the Type of Tweets from Individuals' Accounts vs. Overall Infrastructure Conversation**



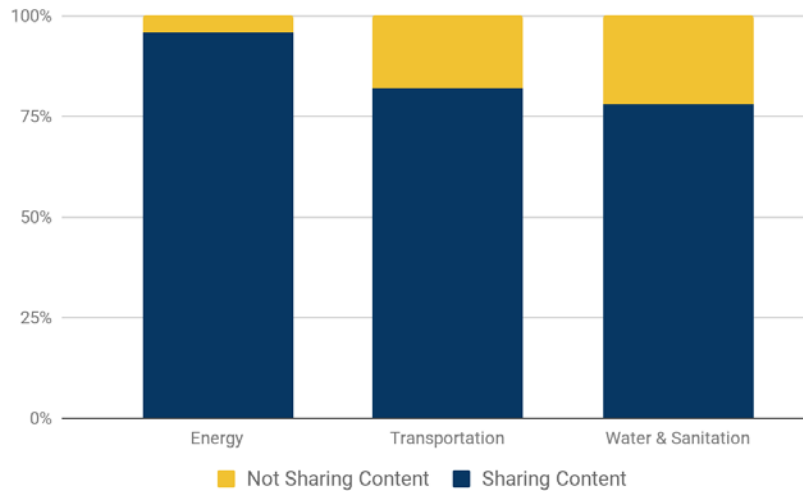
However, despite the fact that the share of original posts is higher, this content is still predominantly sharing of content, meaning that individuals create their own tweet that shares a link to an informative news article, blog, or image picture, rather than expressing a formed opinion or view.

**Figure 29. Sample of Original Post Defined as Sharing Content vs. Not Sharing Content**



This pattern holds across sectors, where the majority of content is sharing of information rather than expressing a statement by the user, and it is strongest in Energy issues, where the proportion of shared content is nearly 100 percent.

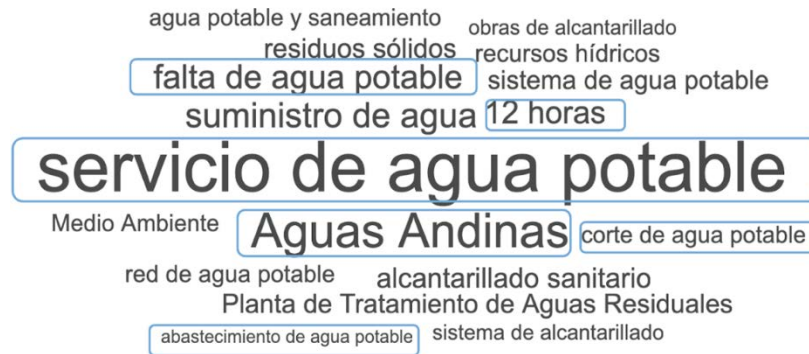
**Figure 30. Original Post from Individuals' Accounts Sharing Content vs. Post Not sharing Content**



### 7.3 Water and Sanitation

The conversation about Water and Sanitation among individuals<sup>59</sup> concentrates on water services and service interruptions. Twitter mentions include announcements of service interruptions<sup>60</sup> and references to lack of drinking water in different cities, e.g., Quito<sup>61</sup> and Lima.<sup>62</sup>

**Figure 31. Key Topics in Water and Sanitation Conversation**



<sup>59</sup> A total of 3,385 original tweets from the sample of authors make up the Water and Sanitation conversation

<sup>60</sup> <https://twitter.com/edurobayo7/statuses/1047952145964830721>

<sup>61</sup> <http://twitter.com/edurobayo7/statuses/1048714878976970754>

<sup>62</sup> <https://twitter.com/mendozadelavega/statuses/785225691654721536>

There are also mentions of government initiatives and projects related to solid waste and sewerage.<sup>63</sup> References to water resources also appear, with most mentions sharing events or articles about water resources management and their importance.<sup>64,65</sup>

The conversation topics about Water and Sanitation among individuals (water services and interruptions) are reflected in the general Water and Sanitation conversation, where the major conversation topics referenced water shortages, cuts, and interruptions.

#### 7.4 Transportation

The conversation about Transportation among the individuals<sup>66</sup> focuses on public transportation, urban transportation, and transportation systems. Mentions of Mexico's new Airport are prominent in the conversation.

**Figure 32. Key Topics in Transportation Conversation**



The conversation about *transporte publico* and *sistema transporte y transporte urbano* includes mentions referring to the improvement of the quality of public transportation,<sup>67</sup> cost of public transportation,<sup>68</sup> inauguration of new transportation systems (e.g., new buses<sup>69</sup> and a cable car line in the Dominican Republic<sup>70</sup>). Issues related to *ciclismo urbano* and *infraestructura ciclista* also appear on the conversation. Some of these mentions point out the need for cycling infrastructure in Mexico<sup>71</sup> and maintenance of existing infrastructure.<sup>72</sup>

<sup>63</sup> <https://twitter.com/juangms25/statuses/1009799213419507712>

<sup>64</sup> <https://twitter.com/djcandido/statuses/933395729862856704>

<sup>65</sup> <https://twitter.com/dachalarca/statuses/978981006878347264>

<sup>66</sup> A total of 7,898 original tweets from the sample of authors make up the Transportation conversation.

<sup>67</sup> <http://twitter.com/FabianFFV/statuses/919284684449820674>

<sup>68</sup> <https://twitter.com/NicolePna/statuses/1028311864353189888>

<sup>69</sup> <https://twitter.com/Carlossassarini/statuses/928800246871855104>

<sup>70</sup> <http://twitter.com/GriselSanchez4/statuses/996104579354947585>

<sup>71</sup> <http://twitter.com/ferfisfer/statuses/959655529080676353>

<sup>72</sup> <http://twitter.com/ElNahual/statuses/868184257969213440>

## 7.5 Energy

The conversation about Energy among individuals<sup>73</sup> concentrates heavily on information-sharing about renewable energy, including mentions of solar, wind, and clean energy.

**Figure 33. Key Topics in Energy Conversation**



Mentions include news about national and international efforts to transition into renewable energy,<sup>74</sup> educational information about energy,<sup>75</sup> and announcements of initiatives fostering transition to renewable energy.<sup>76</sup> Other issues mentioned in the conversation were Chile's plan to reach 100 percent renewable energy<sup>77</sup> and announcements of new innovation such as the *Watercube*, which uses solar energy to produce potable water.<sup>78</sup>

Individuals' conversation and the overall Energy conversation both centered on similar themes, which included solar energy and renewable energy.

## 7.6 Issues Analysis

For further segmentation of individuals' conversation<sup>79</sup> on infrastructure, seven predefined categories were identified using representative keywords.

The categories were the following:

1. Price: keywords related to the cost of services such as *pasaje*, *costo*, *impuesto*, etc.

<sup>73</sup> A total of 4,734 original tweets from the sample of authors make up the Energy conversation.

<sup>74</sup> <http://twitter.com/frarroyo/statuses/904530879200059393>

<sup>75</sup> <https://twitter.com/andresutreras/statuses/964904798456819714>

<sup>76</sup> <http://twitter.com/versuserwin/statuses/876498402992902151>

<sup>77</sup> <https://twitter.com/cfinat/status/1046824457162166273>

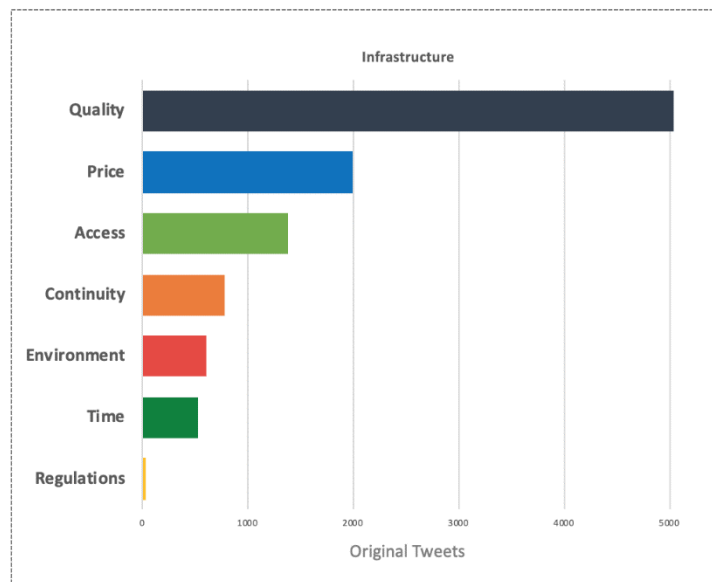
<sup>78</sup> <http://twitter.com/alorandi/statuses/748263554730471424>

<sup>79</sup> Only original mentions

2. Access: keywords related to services access such as *acceso*, *cobertura*, etc.
3. Continuity: keywords related to service interruptions such as *apagón*, *corte*, etc.
4. Quality: keywords related to quality of services such as *seguridad*, *gusto*, *potable*, etc.
5. Time: keywords related to service times such as *tiempo de espera*, *congestión*, *puntualidad*, etc.
6. Environment: keywords related to sustainability to such as *contaminación*, *sustentabilidad*, etc.
7. Regulations: keyword related to regulations such as *incentivo*, *regulación*, etc.

Of a total of 21, 149 original tweets, quality of service is the most mentioned category (5,044 original tweets), followed by the price of services (1,991 original tweets) and access to services (1,376 original tweets).

**Figure 34. Breakdown of the Infrastructure Conversation by Categories**



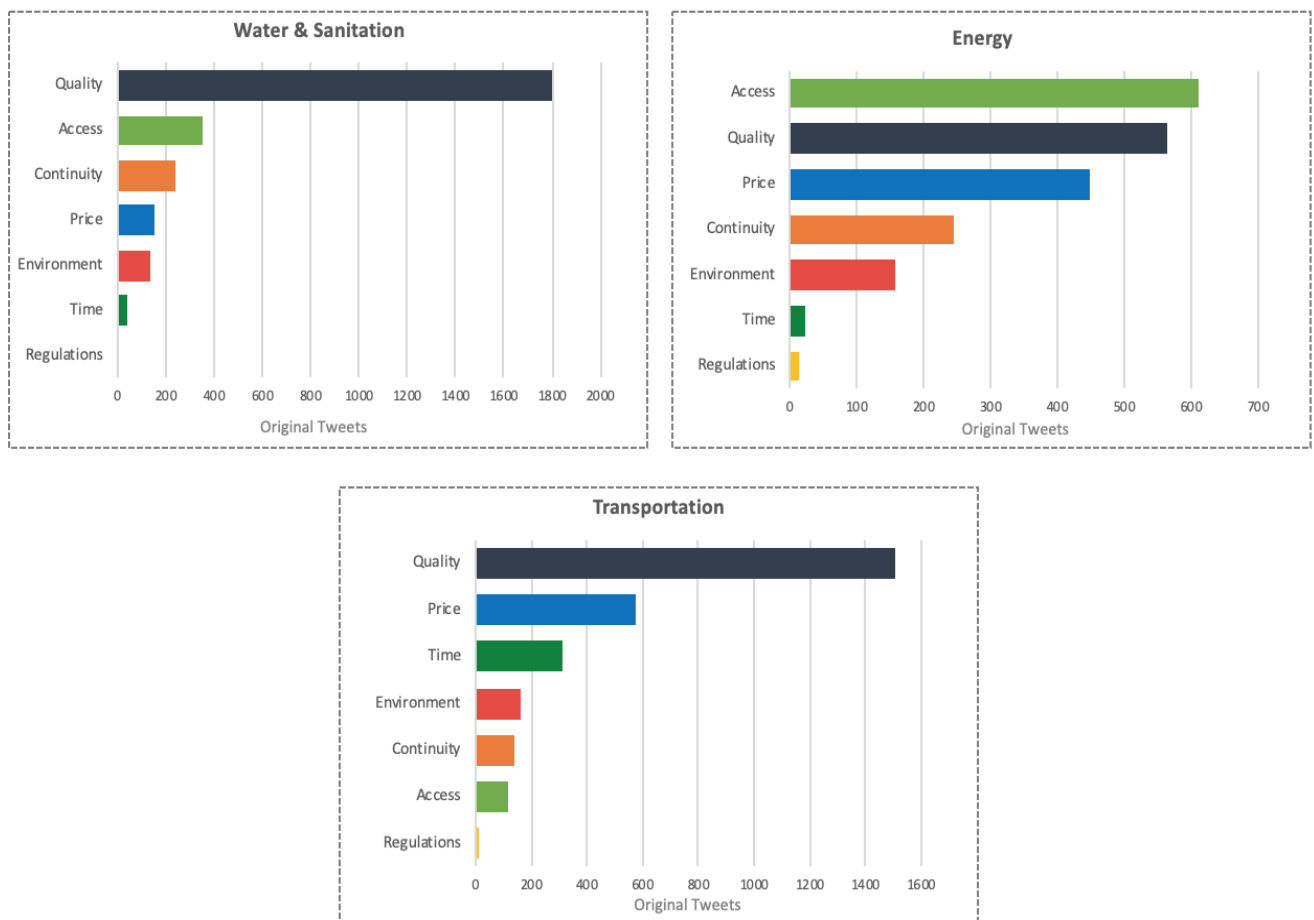
When looking at the breakdown of the three infrastructure sectors separately,<sup>80</sup> quality of service is the most mentioned category in both the Water and Sanitation (1,802 original tweets),

<sup>80</sup> Water and Sanitation: 3,385 original tweets  
 Transportation: 7,898 original tweets  
 Energy: 4,734 original tweets

and Transportation conversations (1,508 original tweets), and it appears second in the Energy conversation (565 original tweets).

Access is the most mentioned category in the Energy conversation (610 mentions), yet one of the least mentioned in Transportation (115 original tweets). Regulations are the least mentioned category in all three sectors.

**Figure 35. Key Categories in the Infrastructure Conversation by Sector**





## 8. Global Media Coverage of Infrastructure in Latin America and the Caribbean

- Globally, media coverage on infrastructure and Latin America and the Caribbean focuses on three mayor areas: large-scale infrastructure project and investments, long-term investments and solutions (e.g., renewables and new energy sources), and effects of natural disasters such as hurricanes and earthquakes, which drive the most noticeable spikes in coverage.
- Water scarcity and droughts across the region are among the most covered issues, with news centering on the impact and consequences of droughts. This is notably different from the conversation generated from within Latin America, which concentrated on water cuts and service disruptions.

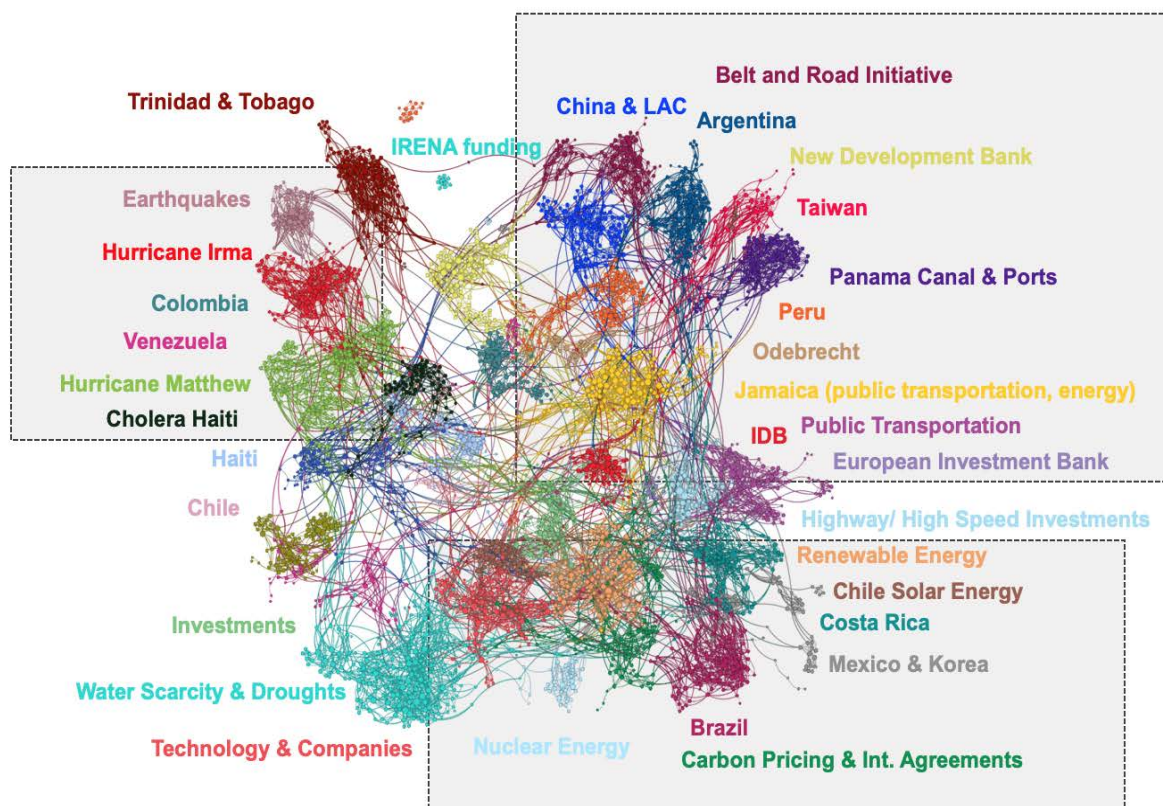
Global news and blogs about infrastructure issues and Latin America and the Caribbean<sup>81</sup> includes three overarching themes, as illustrated in Figure 36 below:

1. Natural Disasters in the upper left corner of the network.
2. Investments towards long-term solutions in the bottom right corner.
3. Large-scale infrastructure projects and investments in the upper right corner.

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<sup>81</sup> Thematic mapping of news and blogs about infrastructure in Latin America and the Caribbean using natural language processing to cluster articles base on language similarity.

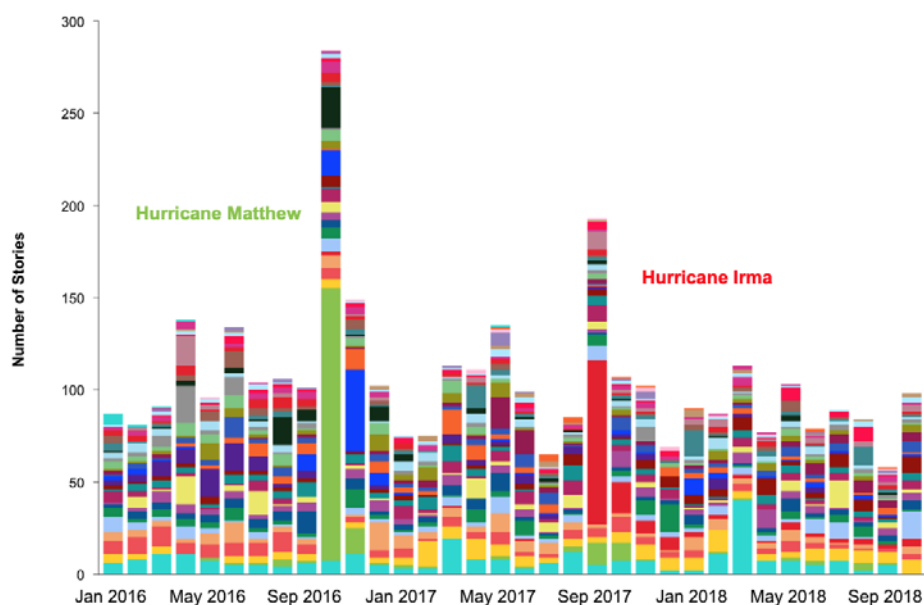
**Figure 36. Thematic Map of News and Blog Coverage of Infrastructure Topics about Latin America and the Caribbean**



*Note:* Network with 3,580 news and blog articles published from January 2016 to October 2018 that mention infrastructure issues and Latin America and the Caribbean, including references to water and sanitation, energy and transportation.

**Natural disasters**, including Hurricane Matthew (light green cluster, top left), Hurricane Irma (red cluster, top left) and Earthquakes (pink-brown, top left) are a highly discussed theme, which drive the largest spikes in media coverage, with most media outlets providing ongoing coverage and updates about the impact of the disasters and relief efforts in the areas affected.

**Figure 37. Timeline of News and Blog Coverage about Infrastructure in Latin America and the Caribbean, January 2016 - October 2018**



**Investments towards a long-term solution**, including renewable energy (orange cluster, bottom right) are one of the most prevalent topics in the conversation, with articles pointing out investments and plans to boost renewable energy. News about international efforts related to Carbon Pricing and International Agreements (dark green cluster, bottom right) are also included in this conversation covering governments' actions to combat climate change and invest in low-carbon energy.

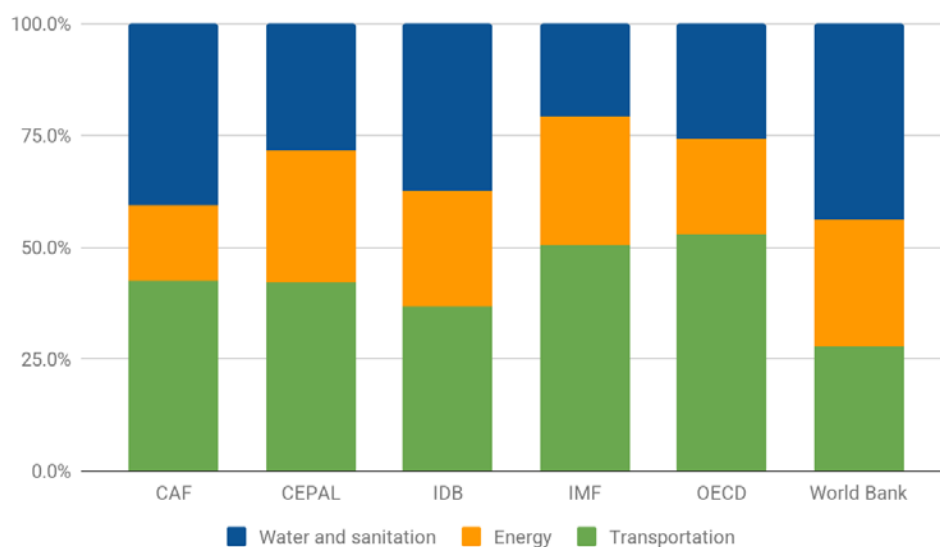
**Large-scale infrastructure projects**, including topics such as China and LAC (blue cluster, upper right), Belt and Road Initiative (maroon, upper right) and Panama Canal and Port (purple, upper right) among other topics. News on issues covers infrastructure projects through bilateral relations

Aside from the three overarching themes, water scarcity and droughts (blue-green cluster, bottom left) also appears as another prominent theme in the discussion with news covering water scarcity in different countries as well as the impacts and consequences of droughts.

## 9. Multilaterals in the Infrastructure Conversation

Multilaterals<sup>82</sup> are largely discussed in the context of Transportation, representing approximately half of the infrastructure discussion for each multilateral: OECD (52.9 percent), IMF (50.3 percent), CAF (42.5 percent), CEPAL (42.2 percent). Meanwhile, mentions of the World Bank (43.9 percent) and the IDB (37.3 percent) lean more heavily towards Water and Sanitation issues. However, it is worth noting that coverage of the three sectors is the most balanced in the case of the IDB at 37 percent Transportation, 26 percent Energy and 37 percent Water and Sanitation.

**Figure 38. Discussion about Multilaterals in Infrastructure Conversation by Sector**



<sup>82</sup> Analyzing how multilaterals are mentioned in conjunction with infrastructure issues. Mentions included references to a multilateral organization in the mention itself. e.g., @AdmCarreterasBo: Personal técnico de la ABC junto a representantes de @el\_BID inspeccionaron las obras del proyecto de rehabilitación km 13-Abapó, la infraestructura vial de 129 km beneficiará el traslado de productos como maíz, trigo y sorgo a mercados de Santa Cruz, Argentina y Paraguay Jul 27, 2018