

## Problem

The COVID-19 pandemic has demanded a societal behavioral change to slow the spread of the disease. Making people stay home and wear face masks have become a priority for governments around the world. Following previous literature on the effects of text messages on promoting healthy behavior, São Paulo's innovation in government lab, (011).lab, implemented a text message (SMS) intervention informed by behavioral insights aimed at encouraging people to stay at home, wear facemasks, and maintain a safe distance from others. A randomized controlled trial (RCT) was designed to investigate whether text messages can be an effective tool to promote behavioral change during the COVID-19 pandemic, and the extent to which the content of the message matters. The trial showed that the civic duty message (“avoid deaths of family and friends is YOUR DUTY”) was the most effective to change people’s behavior in the city of São Paulo’s context.

Following this positive result, the city of São Paulo partnered with Vital Strategies to send 3 behaviorally-informed text messages to citizens aiming to promote mask wearing and safe distancing. Between August 10<sup>th</sup> and 14<sup>th</sup>, approximately 8.24 million messages were sent to more than 2.74 million citizens nudging them to follow the new behavioral requirements. Priority was given to São Paulo’s administrative districts with the highest incidence of COVID-19 in the last three weeks before the launching, based on data from the Secretariat of Health.

Since August, the restrictions are getting more flexible in the city of São Paulo. In October, the city of São Paulo entered the “green phase” of restrictions imposed by the state of São Paulo. In this phase, there is a partial economic reopening, with stores and restaurants opened for 12 hours with 60% capacity. Small events are also allowed, as long as people keep 1.5 meters distance and wear a mask<sup>1</sup>.

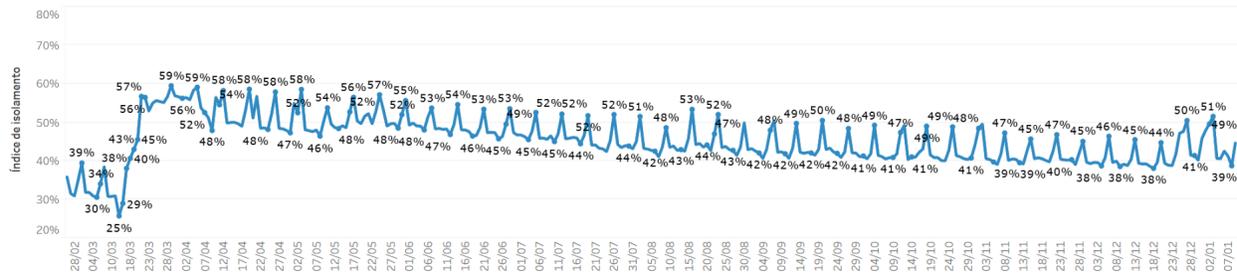


**Figure 1: “Plano SP”: evolution from May to November**

Source: [https://www.saopaulo.sp.gov.br/wp-content/uploads/2020/11/20201130\\_Apresentacao-Plano-SP.pdf](https://www.saopaulo.sp.gov.br/wp-content/uploads/2020/11/20201130_Apresentacao-Plano-SP.pdf)

With fewer restrictions, economic activity increases and people start to circulate more. This is reflected in a reduction in the social isolation index for the city of São Paulo, which reached 38% during weekdays in November.

<sup>1</sup> <https://www.saopaulo.sp.gov.br/wp-content/uploads/2020/10/Apresentacao-Plano-SP.pdf>



**Figure 2: Social isolation index for the city of São Paulo**

Source: <https://www.saopaulo.sp.gov.br/coronavirus/isolamento/>

A smaller social isolation index indicates that people are traveling more inside the city, thus using more the public transportation network. In this context, the (011).lab expanded the communication campaign to a context-based strategy. As the city reopens, public transport terminals stand out as a potential dissemination locus, especially if citizens do not properly comply with the preventive behaviors. Thus, the laboratory adapted the previous messages into one that was sent when the person is at the bus terminal, with adequate content considering the particular challenges of this situation.

## Intervention

Leveraging the geofence technology, the city of São Paulo designed an image plus message to be sent as a “push notification” to citizens that were at a bus terminal at a specific time of the day.

**Table 1: Intervention**

Image	Original text	English translation
	<p>ALERTA COVID19: Evitar MORTES de familiares e amigos também é SEU DEVER! Fora de casa, use máscara cobrindo BOCA e NARIZ o tempo todo. Nos terminais, mantenha DISTÂNCIA das pessoas na fila. Dentro dos ônibus, evite comer ou tocar o rosto e use sempre ÁLCOOL GEL nas mãos. Ajude a manter o sistema de transporte seguro! Mais em <a href="https://bit.ly/PMSP_covid19">bit.ly/PMSP_covid19</a></p>	<p><b>COVID-19 ALERT:</b> to avoid DEATHS from family and friends is also YOUR DUTY. Outside your home, wear a mask covering MOUTH and NOSE all the time. At the terminals, keep DISTANCE from people in the queue. Inside buses, avoid eating or touching your face and always use HAND SANITIZER. Help keep the transportation system safe! More at <a href="https://bit.ly/PMSP_covid1">bit.ly/PMSP_covid1</a></p>

Source: SPTrans and (011).lab

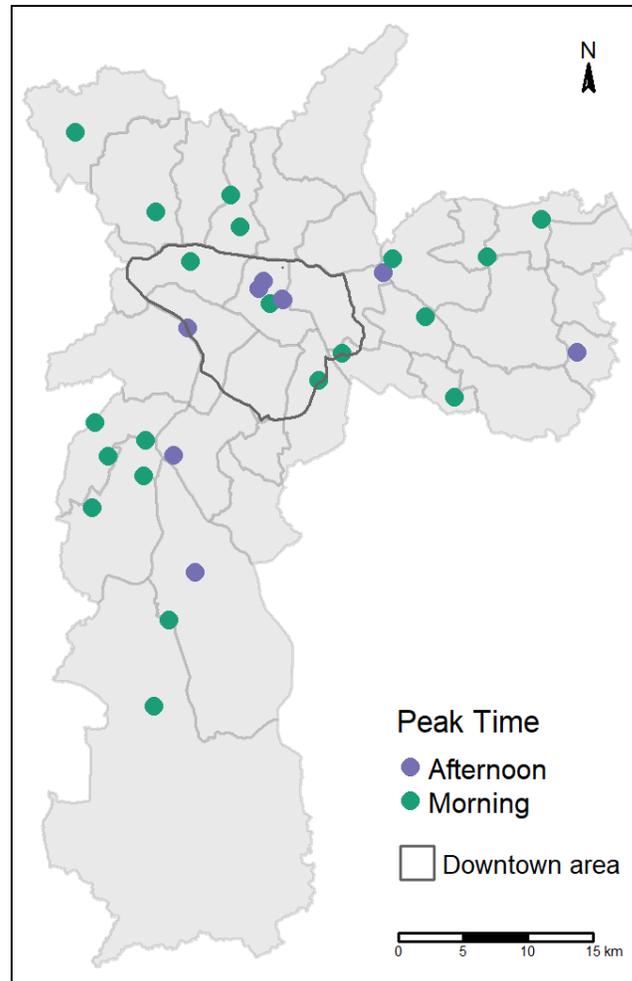
We designed a clear and concise message, with language and graphic specific to the city of São Paulo. It incorporates the 3 Ws: wash your hand (“always use HAND SANITIZER”), watch your distance (“At the terminals, keep DISTANCE from people in the queue”), and wear a mask (“Outside your home, wear a mask covering MOUTH and NOSE all the time”) and the instruction to avoid touching eyes, nose and mouth (“Inside buses, avoid eating or touching your face”). The link at the end of the message goes to the official São Paulo City Hall webpage about Covid-19<sup>2</sup>.

The image represents the audience, individuals are wearing masks and they are appropriately physically distanced. The picture has no copyright because it was produced by the city of São Paulo’s Department of Transportation.

The final message and picture were decided in a meeting with the Departments of Transportation and Communication and the (011).lab.

The city of São Paulo has 31 bus terminals, where 622,543 people boarded in November 2020. The peak hour varies among terminals; some are busier in the morning and some are busy in the afternoon.

<sup>2</sup> [https://bit.ly/PMSP\\_covid19](https://bit.ly/PMSP_covid19) >>  
[https://www.prefeitura.sp.gov.br/cidade/secretarias/saude/vigilancia\\_em\\_saude/doencas\\_e\\_agrivos/coronavirus/index.php?p=291730](https://www.prefeitura.sp.gov.br/cidade/secretarias/saude/vigilancia_em_saude/doencas_e_agrivos/coronavirus/index.php?p=291730)



**Figure 3: Bus terminals in the city of São Paulo**

Source: (011).lab

The table below shows the number of messages to be sent to each terminal every day between the 7<sup>th</sup> and the 11<sup>th</sup> of December. For each terminal, we selected the hour with the largest number of people boarding, the “peak hour”. Then, we expanded the campaign duration to one hour before and one hour after that peak hour. Therefore, the terminals received the campaign for three hours in each one of the five campaign’s days. The only exception is “Terminal Parque Dom Pedro II”: because of its location, people board there in the morning (coming from the periphery and taking the last bus to the city center) and in the afternoon (coming from the city center and taking the bus to the periphery). Thus, this terminal received messages in the morning and in the afternoon peak.

The audience is bus passengers using one of São Paulo’s bus terminals. We could not discriminate the audience based on demographic categories, such as gender and age, because of electoral legislation.

**Table 2: Terminals, peak hour and total messages sent**

Terminal	Terminal peak hour	People boarding	Terminal share	Messages/day
Term. Parque Dom Pedro II	6h - 7h - 8h 16h - 17h - 18h	25,114	13.24%	25,632
Term. Itaquera	17h - 18h - 19h	22,519	11.87%	22,984
Term. Santo Amaro	16h - 17h - 18h	16,636	8.77%	16,979
Term. Grajaú	17h - 18h - 19h	14,772	7.79%	15,077
Term. Varginha	5h - 6h - 7h	10,759	5.67%	10,981
Term. Campo Limpo	5h - 6h - 7h	9,450	4.98%	9,645
Term. Capelinha	5h - 6h - 7h	8,841	4.66%	9,023
Term. Vila Nova Cachoeirinha	6h - 7h - 8h	8,140	4.29%	8,308
Term. Sacomã	6h - 7h - 8h	8,054	4.25%	8,220
Term. Jardim Ângela	5h - 6h - 7h	7,010	3.70%	7,154
Term. Cid. Tiradentes	17h - 18h - 19h	6,712	3.54%	6,850
Term. Bandeira	6h - 7h - 8h	6,443	3.40%	6,576
Term. Pirituba	6h - 7h - 8h	5,550	2.93%	5,664
Term. Guarapiranga	5h - 6h - 7h	5,312	2.80%	5,421
Term. Pinheiros	16h - 17h - 18h	4,416	2.33%	4,507
Term. Lapa	6h - 7h - 8h	4,035	2.13%	4,118
Term. Mercado	16h - 17h - 18h	3,919	2.07%	3,999
Term. João Dias	6h - 7h - 8h	3,811	2.01%	3,889
Term. Carrão	6h - 7h - 8h	2,930	1.54%	2,990
Term. Parelheiros	5h - 6h - 7h	2,714	1.43%	2,770
Term. Vila Prudente	6h - 7h - 8h	2,687	1.42%	2,742
Term. A. E. Carvalho	5h - 6h - 7h	1,758	0.93%	1,794
Term. Jardim Britânia	5h - 6h - 7h	1,664	0.88%	1,698
Term. Sapopemba	5h - 6h - 7h	1,612	0.85%	1,645
Term. Penha	5h - 6h - 7h	1,375	0.72%	1,403

Term. Princesa Isabel	16h - 17h - 18h	927	0.49%	946
Term. São Miguel	4h - 5h - 6h	662	0.35%	675
Term. Casa Verde	6h - 7h - 8h	604	0.32%	616
Term. Água Espraiada	15h - 16h - 17h	541	0.29%	552
Term. Aricanduva	17h - 18h - 19h	444	0.23%	453
Term. Amaral Gurgel	16h - 17h - 18h	273	0.14%	278
Total		189,684		193,589
People boarding in peak hours	189,684	Messages to be sent per day	193,589	
Messages to be sent per day	193,589	Campaign duration (days)	5	
Messages/people boarding	102%	Campaign messages	967,945	

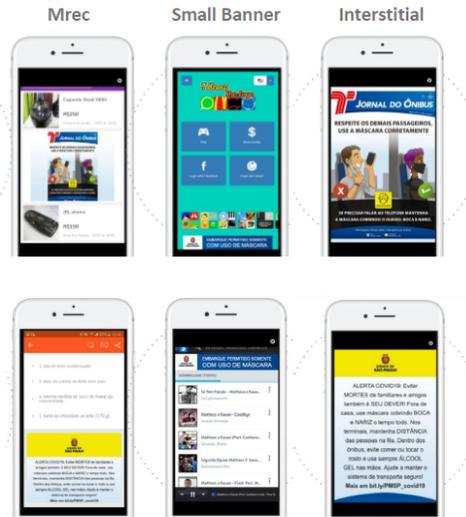
Source: (011).lab

We gave our provider - Freakom - the image and text of the message, the information displayed in the table above, and the terminals' locations. The provider was responsible for creating the geofence around each terminal, for organizing the message content in an appropriate format, and for sending the messages.

## Message delivery

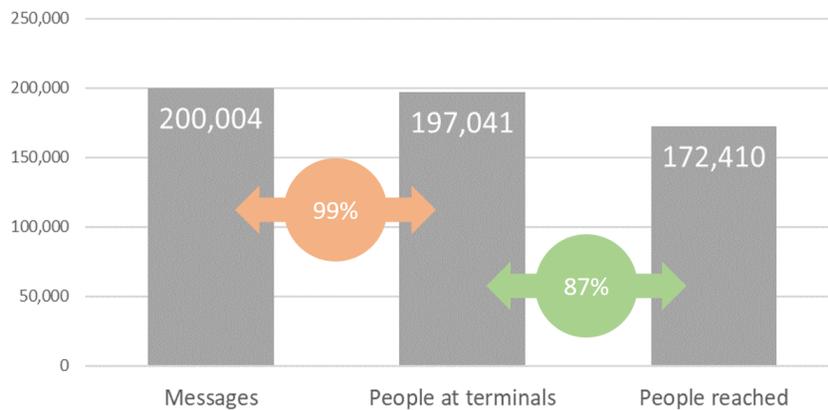
We could hire 32,075 messages more than what was initially planned, amounting to a total of 1,000,020 messages, and we agreed with Freakom to divide it considering the share of each terminal.

The campaign was delivered in 3 different formats adapted to the webpage or application the person was using when he/she was at the bus terminal.



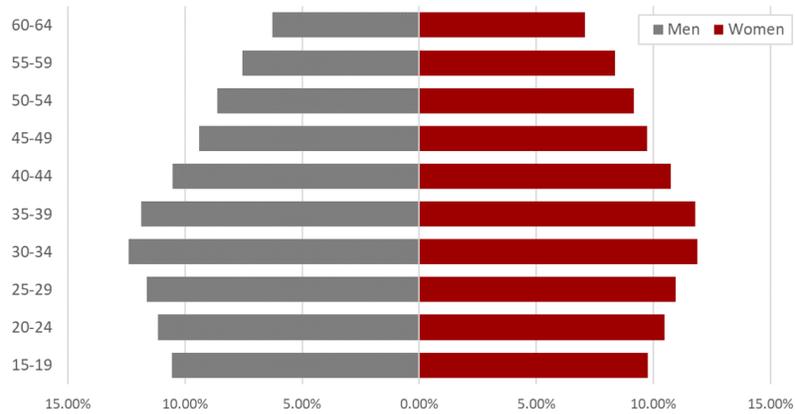
**Figure 4: Messages as sent by Freakom**  
Source: Freakom

The image below shows daily average numbers for the campaign. Between the 7<sup>th</sup> and the 11<sup>th</sup> of December, 200,004 messages were hired to be sent to people using the bus terminals each day. Freakom identified an average of 197,041 people using the terminals each day, of whom 172,410 received the message. Therefore, Freakom estimates that the campaign reached 87% of people located in the region of the terminals, and some people received the message more than once. There were 10.112 clicks in the messages.



**Figure 5: daily average numbers for the campaign**  
Source: Freakom

51% of people reached were women and 49% were men. This percentage is well balanced among age groups.



**Figure 6: Percentage of men and women by age group**  
 Source: Freakom

Freakom also had information on the operational system people used in their cellphones. As expected, 97% of people use Android and only 3% use IOS.

## Video Observation

To understand the extent to which the messages were effective in changing people's behavior, we decided to rely on observation. That was the chosen strategy because there are no data collection of “masks properly used”, or “hands properly cleaned”. With this strategy, we will not have a causal inference about the effect of our communication campaign. Nevertheless, we can have insights into typical behaviors.

We agreed with the Department of Transportation to have video records of the terminals on Friday 4th, before the intervention, and on Friday 11th, when the intervention happened. We received 90GB of videos and analyzed them.

Our main takeaway is that, as expected, we can not state that the messages changed people's behavior. This result is in line with what we found in our first pilot: the messages had an effect on awareness, but were not effective to promptly change behaviors.

However, we see some repetitive behavior patterns that can be addressed in a new intervention by (011). Lab in partnership with Vital Strategies, or can be incorporated by the Department of Transportation's standard procedures against Covid-19.

In the next pages we explain those behaviors and illustrate them with imagens from the videos.

## Takeaway 1: Most people comply with the preventive behaviors

When there are not many people on line, passengers keep a safe distance and avoid crowding. They obey the floor markings when it is possible.

	
	
<p>We can see that people keep a safe distance when waiting for the bus in a small line.</p>	<p>When the line is big, passengers don't respect the safe distance. There are two lines, side by side.</p>

## Takeaway 2: The great majority of people wear a mask at the terminals.

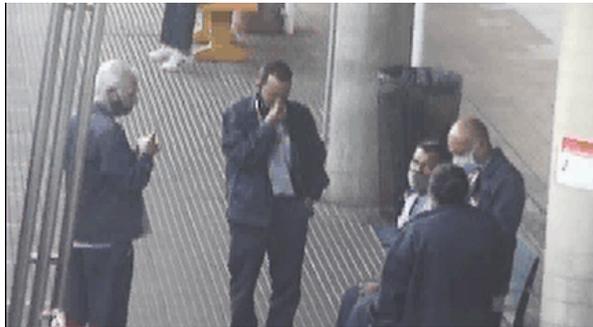
The behavioral science literature shows that people are influenced by what others do (social norms). We can say that the Department of Transportation was successful in promoting mask wearing among its passengers.



### Takeaway 3: Terminals' workers need to comply with the sanitary rules - they are the example

The behavioral science literature shows that people are influenced by what others do (social norms). Knowing that, it is crucial that bus terminals' workers, from shopkeepers to bus drivers) follow the rules because passengers will use them as an example of how to behave.





#### **Takeaway 4: People crowd and don't wear a mask around eateries**

All terminals have small Food Outlets that sell snacks and beverages. In those places people drink and eat, removing their masks. What we see is that not only people eating and drinking are not wearing a mask; people waiting to order already have their masks removed. In addition, as there is no floor marking, people stand less than 2 meters apart. The space around eateries can be better organized, communicating to people how they should follow the 3 Ws in this situation.





### Takeaway 5: Hand sanitizer needs to be of easy access for people

Every Food Outlet has a big waste container. Many people eat and drink what they have ordered in the eatery counter. Then, they displace any paper bag or plastic glass in the waste container and put their masks back. However, not many people sanitise his/her hand. We believe one reason for it is the location of the hand sanitizer: instead of being placed next to the waste container, it is in places of difficult access (in the side of the eatery, or in a high place). Besides, the eateries often have just one bottle of hand sanitizer. If they had more, they could locate one bottle on each side of their counter.

If we want people to create new habits and to behave following some standard rules new to them, we need to facilitate that behavior. Food Outlets in the bus terminals are doing the opposite: they are making the desired behavior more difficult.

We could test the extent to which facilitating the access to hand sanitizer increases its usage. One possibility is to place pedal activated hand sanitizer stands in some eateries and not in others, and see how people react to it.





**Takeaway 6: When people are talking in the cell phone they often don't use the mask properly**

We see in the videos that people often remove the mask to talk or to send an audio in the cell phone. It highlights the importance to communicate that it is mandatory to wear a mask even if you are using your cell phone, such as in the image we used in the campaign.



**Takeaway 7: People often don't wear a mask properly in the terminals in order to eat or drink**

Eating and drinking are moments that lead to masks not being correctly used. We understand that people sometimes can not avoid eating or drinking in their commuting, and when eating or drinking, they will not wear a mask. Nevertheless, it is important to communicate that those moments should be avoided and, if it is going to happen, it should be as brief as possible, followed by mask change and hand sanitizing.



