

IMPACT EVALUATION OF PAULISTA ABERTA ON URBAN VITALITY

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IMPACT EVALUATION OF PAULISTA ABERTA ON URBAN VITALITY *BOOKLET*



Organized by

Bike Anjo
Corrida Amiga
ITDP
LABMOB

Support

ICS - Instituto Clima e Sociedade

Overall Coordinator

Victor Andrade

Executive Coordinator

Marcela Kanitz

Technical Consultative Committee

Danielle Hoppe
JP Amaral
Sílvia Stuchi

Impact Evaluation Experts Consultants

Leonardo Bueno
Ligia Vasconcellos (sênior consultant)

Research Assistant

Rafael Drummond

Field research

Metrópole I:1

Technical Staff

Fabiano Pires (graphic design)
Pedro Bastos (proofreader)
Bike é Legal (drone filming)

Global Observers

Comitê de Acompanhamento e Fortalecimento do Programa Ruas Abertas
Conselho Gestor Local da Avenida Paulista
Câmara Municipal de São Paulo
Prefeitura Regional da Sé
CET Companhia de Engenharia de Tráfego de São Paulo
Secretaria Municipal de Mobilidade e Transportes de São Paulo
Associação Paulista Viva
Grupo de Estudos de Pesquisas Epidemiológicas em Atividade Física e Saúde (USP)

Collaborators

Bloomberg
Fecomércio
Metrô de São Paulo
Secretaria Municipal de Esportes e Lazer
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The mobilization for opening Paulista Ave. up to pedestrians began in 2014 at the request of civil society organizations and population. The result of this mobilization gave rise to the Paulista Aberta [Car-free Paulista] event in 2015 within the context of the Open Streets program, decreed by the São Paulo City Hall. At that time, the City Hall sought to restrict motorized vehicles from circulating and promote the opening of streets for people on Sundays and holidays. One of the landmarks of Paulista Ave. opened to the public on Sundays has been the demonstration of the importance of promoting recreational sites through the occupation of public spaces.

The main objective of this project was to evaluate the impact of Paulista Aberta on local urban vitality. The research was developed by a team constituted by the Laboratory of Sustainable Mobility (LABMOB) from the Graduate Program in Urbanism (PROURB) at the Federal University of Rio de Janeiro (UFRJ) in partnership with ITDP Brasil, Bike Anjo, and Corrida Amiga. It had the support of the Instituto Clima e Sociedade (iCS). The development of this research had the assistance of several key actors directly or indirectly involved/impacted by Paulista Aberta, and experts related to the project, such as researchers and NGOs.

Secondary objectives were to evaluate the following hypotheses and questions:

1. Users' and residents' modal migration;
2. Public space demand at Paulista Ave. and in the city of São Paulo;
3. Change in the users' and residents' recreational patterns;
4. Environmental impacts related to air and noise pollution;
5. Evaluation of the program by the beneficiaries – residents, users, and merchants.

In addition to the objectives of the impact assessment itself, the project is part of an initiative led by the Instituto Clima e Sociedade (iCS) to foster research that applies impact assessment methodologies to investigate the effects of urban interventions in favor of active mobility. Studies on this subject are still scarce, especially in the Brazilian context. In this sense, it aimed to disseminate the methodology of impact assessment and its limitations and potentialities for analyzing the effects of urban interventions.

The study starts with the hypothesis that open streets increase urban vitality and the quality of life in some place. The analysis was carried out through several indicators

related to the population's quality of life and to what was considered part of an excellent performance of public spaces in environmental, urban, social, and economic terms. The methodology used estimated the effects of the intervention through the analysis of indicators formed from quantitative and qualitative primary data, collected in the field between October and November 2018, and from existing secondary data. Whenever was possible, the study sought to analyze counterfactual scenarios in order to strengthen the attribution of the results obtained from the Paulista Aberta intervention itself, and not from other factors. The purpose was to get as close as possible to causal relationships between the variables surveyed and the implementation of the program to move beyond simple correlations (hence the importance of useful counterfactuals). Due to limitations in obtaining adequate retroactive and counterfactual data for some of these indicators, it is essential to highlight that part of the analyzes is composed of diagnoses on the topics addressed, and not on impact measurements themselves.

The impact assessment for Paulista Aberta made it possible for the project to get more evidence of some results of this program. Besides, the evaluation and diagnoses presented may contribute to the continuous qualification of the program, as well as to support decision making so that other streets and avenues in São Paulo

(and other Brazilian cities) might also be subject to host a similar public policy.

This booklet is divided into four main parts: the present "Introduction"; "Methodology", which briefly discusses the importance of the impact assessment of urban interventions and the design of the methodology applied in the study; "Main Results", which presents the principal impact measurements and the elaborated diagnoses of primary quantitative data and secondary data collected by the survey. Finally, the fourth section, "Conclusions," points to evidence found in the analysis of the positive and negative impacts of the program on the different dimensions of urban vitality chosen by this study.

More detailed information on the methodology issues and the total content obtained from results, including in-depth interviews, can be found at the final of the technical report, available for download in Portuguese.



Impact assessment of urban interventions is essential for the planning and monitoring of public policy outcomes. The monitoring of indicators before and after the intervention produces information about their effects and their capacity to achieve the policies goals. The impact assessment also enables documentation of possible unexpected, positive, or adverse effects. When the benefits of public intervention are testified, impact assessments collaborate to support the design of public policies and investments in new projects, heading new strategies and local interventions.

The Paulista Aberta impact assessment study is an ex-post evaluation since the analysis occurred after the implementation of the Program. One of the initial limitations of the research was the need to get hold of retroactive data to make possible a comparison of previous and later Paulista Aberta scenarios. About the secondary data, researchers collected information from periods before October 2015, the month in which the Program began. Concerning the primary data collected in questionnaires and interviews, the team used recall techniques to help respondents out to retrieve information about the period before the intervention. The study brings analysis and diagnosis of the Paulista Aberta

Program through the triangulation of secondary and primary qualitative-quantitative data collected through local observation, quantitative questionnaire application, and in-depth interviews.

The methodology development got started by researchers contacting key actors involved or impacted by the Program. At that first moment, researchers held meetings with members of the project and these actors. The primary purpose of the meetings was to broaden the team's understanding of the complexity of the Program. They have brought essential inputs as hypotheses of possible positive or negative effects from these different actors and initial mapping of existing secondary data possibilities.

From these first meetings, the team was able to set up a network to monitor the research in some strategic phases, constituted by these actors already mentioned and by professionals with specific knowledge related to the project.

Two impact assessment specialists, a project team member, and a senior external consultant monitored the design of the impact assessment methodology based on the following steps :

1 – Definition of a target group: to outline the beneficiaries of the project;

2 – Definition of the Theory of Change: to develop the logical model that associates the intervention with the expected result;

3 – Benchmarking: to identify references of similar projects and success stories which served as a starting point for the evaluation and composition of the indicators;

4 – Definition of impact assessment indicators: to identify the metrics to be evaluated, which should relate directly to the results outlined in the theory of change;

5 – Definition of measurement levels of the indicators: to decide on how to carry out the analysis and verification of the impact of the indicators;

6 – Counterfactual: the team defined groups that should be treated and their respective controls, that is, the group

that would constitute the alternative scenario that did not undergo the intervention;

7 – Sampling plan: the research sample would depend on the choice of measurement methods through a statistical calculation and supposed to vary according to the size of the expected effect (power calculation);

8 – Measurement schedule: to set up time of data collection. The team carried out measurements through the same ones attributed to the treatment and control group through primary and/or secondary data.

9 – Analysis and interpretations: to apply impact measurements, analysis, and identification of possible biases and heterogeneities within the groups under observation.

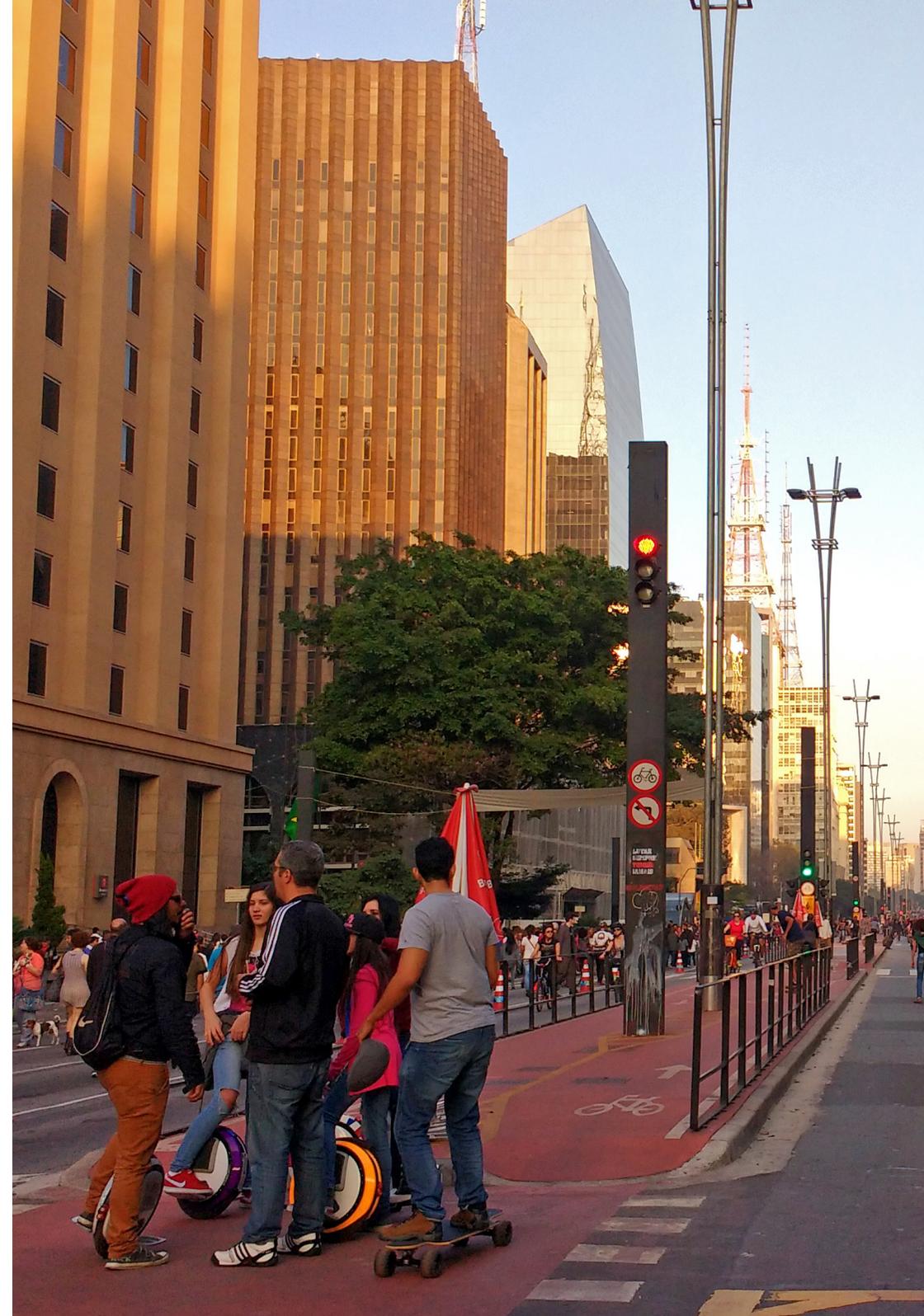
The following sections briefly describe steps 1 – Delimitation of a target audience, 2 – Defining the Theory of Change, and 6 – Counterfactual (listed above) and methods for collecting primary and secondary data. The third part “Main Results” covers the analyzes and interpretations referring to step 9.



PAULISTA ABERTA PROGRAM'S TARGET AUDIENCE

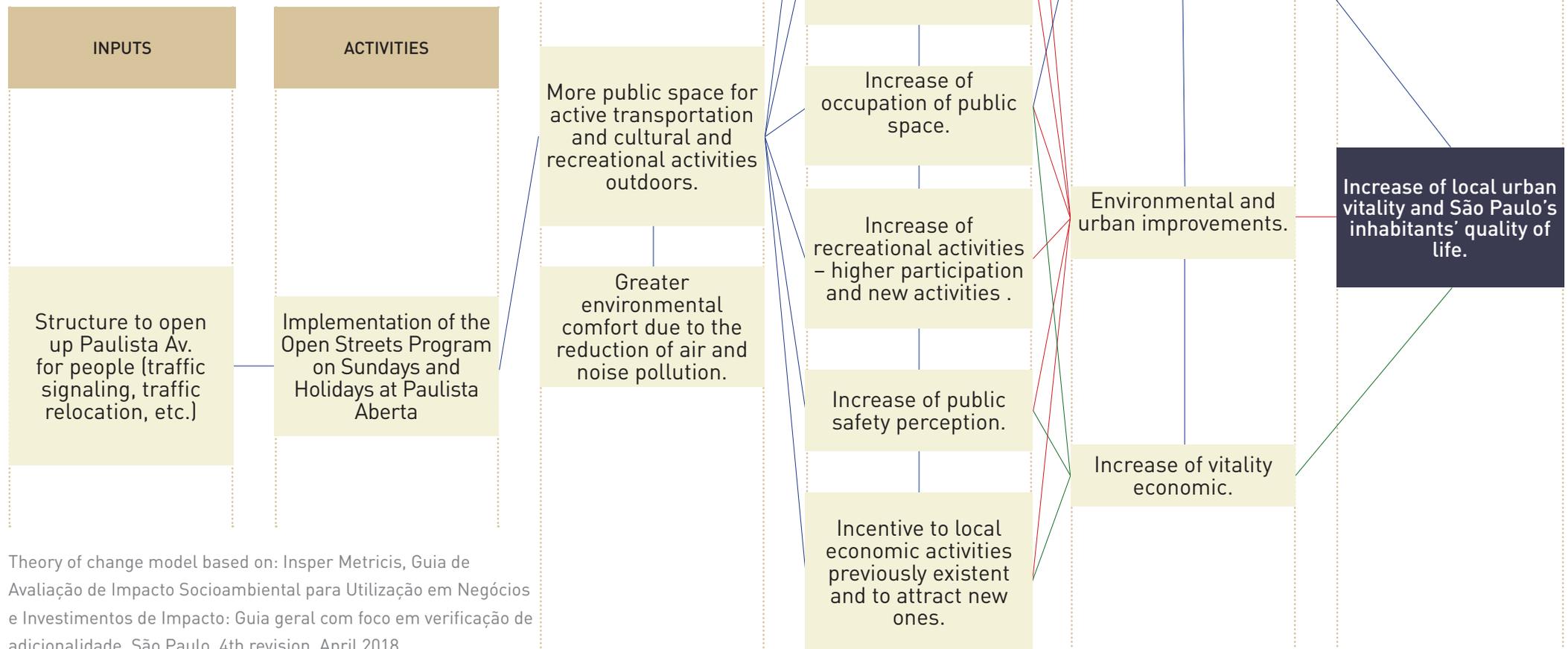
Research defined the following groups as beneficiaries of the Paulista Aberta Program:

- a) Retailers: permanent commercial establishments and street vendors located at Paulista Ave.. Segment likely to suffer significant direct and indirect economic impacts from the program.
- b). Residents: resident population in the surroundings of Paulista Ave.. Segment impacted directly by the program in economic, environmental, and behavioral terms.
- c) Residents: resident population in the surroundings of Paulista Ave.. Segment impacted directly by the program in economic, environmental, and behavioral terms.



THEORY OF CHANGE

The theory of change is a planning and evaluation tool commonly used in initiatives aimed at promoting social change. It starts from long-term expected impacts to build a logical framework up that details the process of changing needed to achieve these impacts. Below, the logical design of the theory of change developed by the project:



Theory of change model based on: Insper Metricis, Guia de Avaliação de Impacto Socioambiental para Utilização em Negócios e Investimentos de Impacto: Guia geral com foco em verificação de adicionalidade. São Paulo, 4th revision, April 2018..



Urban vitality is related to the excellent performance of public spaces and refers to their capacity in supporting the various urban functions – social, economic, and environmental –, generating sustainable occupation models. Social aspects can be represented by pedestrians passing over a specific place, co-presence and the potential of social interaction in these spaces; the economic functions are related to non-residential

uses and microeconomic exchanges; environmental functions are related to the natural ecosystem of the urban environment, represented by the quality of air, soil, water resources, and green areas.

Here, urban vitality is evaluated through indicators related to the following dimensions:

- I – Environmental: environmental quality, limited to the air pollution and noise evaluation;
- II – Urban: mobility, land use, and public spaces;
- III – Social: habits and collective well-being;
- IV – Economic: related to economic development and income generation.

JALALADDINI, Siavash; OKTAY, Derya. *Urban Public Spaces and Vitality: A Socio-Spatial Analysis in the Streets of Cypriot Towns*. Procedia - Social and Behavioral Sciences, Elsevier, 2012.

SABOYA, Renato; VARGAS, Julio; NETTO, Vinicius. Fatores morfológicos da vitalidade urbana: uma investigação sobre a arquitetura e seus efeitos. In: NETTO et. all (orgs). *Efeitos da Arquitetura: os impactos da urbanização contemporânea no Brasil*. Brasília, 2017.

SPIRN, Anne. Chapter 1: City And Nature. *The Granite Garden: Urban Nature and Human Design*. New York: Basic Books, 1984.

COUNTERFACTUAL

Comparisons of Means

The compare means test was used in the primary data collected when research applied questionnaires at Paulista Ave. and Brig. Faria Lima Av. The hypothesis assumed is that the control group is as similar as the treatment group, hence it is considered as a counterfactual. Since there were no drawing samples, the limitation is that research was not able to guarantee that control and treatment groups would be comparable in terms of means, both between observed and unobserved variables. Despite this fact, the comparison of means was used, but considering it more a case study rather than an impact assessment itself. In this methodology, the more one believes in the hypothesis of similarity between the groups; the closer one gets to the idealization of impact evaluation – which is the causal analysis.

The Brig. Faria Lima Avenue was chosen to play the control group role because it is similar to Paulista Ave. among several key parameters (such as percentage of ground-floor retails, land use profiles and pavement typology, as specified in the Technical Report of this

study), and for already have been considered as a possible place to host the Open Streets Program by the São Paulo City Hall previously. Therefore, despite the limitation in finding an avenue comparable to Paulista Ave. due to its iconic character, thus Brig. Faria Lima Ave. was the avenue that more approached to the counterfactual ideal.

Residents & Retailers

Brig. Faria Lima Ave. residents and retailers composed the counterfactual group for impact assessment in comparison of the same correspondent group in the surroundings of Paulista Ave.

Users

It was not possible to apply the impact assessment methodology on them due to the lack of a plausible counterfactual. The fact that it represented an ex-post evaluation (that is, after the intervention) increased difficulty in choosing a group of people in a scenario that did not host an intervention.

Synthetic Control

Synthetic control was used in the secondary data, such as air pollution, mobility, and real estate values. This method is useful in cases where only aggregate data from the unit of analysis that is intended to be used in the impact assessment is available. In the methods mentioned above, there was a sample of individuals composing the control and treatment groups. It was possible to get hold of averages and variances in the units of analysis, which were the individuals interviewed. In the synthetic control, research aggregated data in the unit of analysis. However, it is possible to look at the trajectory of these aggregated data over time and compare them with similar units. In the case of this study, a suitable counterfactual can be constructed using more than one comparison unit. Instead of choosing a single street to be the counterfactual of Paulista Ave., a combination of several other streets can better reproduce the characteristics of the street treated (Paulista Ave.).

PRIMARY AND SECONDARY DATA COLLECTION

Most of the indicators are composed of primary data collected during a work field that happened in October 2018. As mentioned earlier, this is an ex-post evaluation where research faced limitations from obtaining backward secondary data. Therefore, most of the indicators are composed only by primary data regarding the scenario information after the implementation of the Paulista Aberta; because of that, they will not be subject to counterfactual analysis.

The following primary data collection methods were used to survey:

- Local observation: researchers visited Paulista Ave. and Brig. Faria Lima Ave. to fill out on-site forms regarding built environment information and activities taking place on the public space during the Paulista Aberta event.
- Drone shooting: shooting during time intervals in different spots to quantify occupation at Paulista Ave. and Brig. Faria Lima Ave.
- Quantitative questionnaires: applied to beneficiaries with representative samples for Paulista Aberta

visitors on September 30th and October 14th; for Paulista Ave.'s and Faria Lima's residents surroundings between October 1st and November 4th; ground-floor retailers between October 1st and 18th; and for street vendors on October 21st.

- In-depth interviews: interviews with beneficiaries and actors involved with the Program.

At first, the research scope included only quantitative questionnaires, with representative samples to develop analyzes on aggregated data. However, shortly after going to the work field and after a brief reading of the collected data, it was also decided to apply in-depth interviews, seeking more detailed reports on the perceptions of beneficiaries and actors related to the Program. The expanded Technical Report encloses the in-depth interviews in full.

Since the kick-off of the project, the team requested information from several public and private actors with the aim of mapping existing data on some topics covered in the study, such as air pollution, mobility, economy and data on local retailers. In the meantime, the team

accomplished another search looking for data displayed on open platforms. The analyzes on secondary data that are part of the third part of this booklet – Results and Analysis – refer to the data available online (CETESB) or provided directly by the institutions Metrô SP, DataZAP, and Fecomércio exclusively for this study.

This topic presents the main analyzes and interpretations of the impact study in the different dimensions related to urban vitality. It is worth mentioning the impossibility to apply the impact assessment methodology in all themes and indicators. The impact was investigated only in those indicators where it was possible to get a historical scene - before and after - and / or a synthetic control represented by the Av. Brig. Faria Lima. Therefore, the other results are only diagnoses identified during the study on the analyzed indicators and can not be considered counterfactual analyzes.

The booklet presents only the most relevant quantitative and secondary primary data to investigate the effects of Paulista Aberta on urban vitality. The complete analysis of the data collected in the study, along with the reports collected in the in-depth interviews, are found in the Technical Report.

SOCIOECONOMIC PROFILE

To select residents and users to be interviewed, the method of quota sampling was stratified by different groups such as gender and age group.

Initial sample / sample obtained from users interviewed:

Paulista Ave.
300 / 342

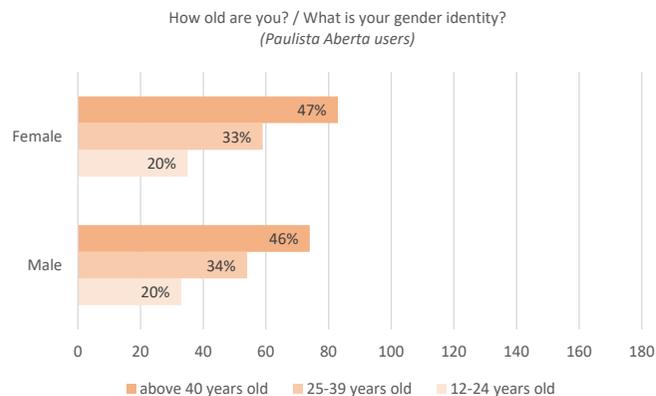
Initial sample / sample obtained from residents interviewed:

Paulista Ave.	Brig. Faria Lima Ave.
200 / 197	200 / 214

USERS

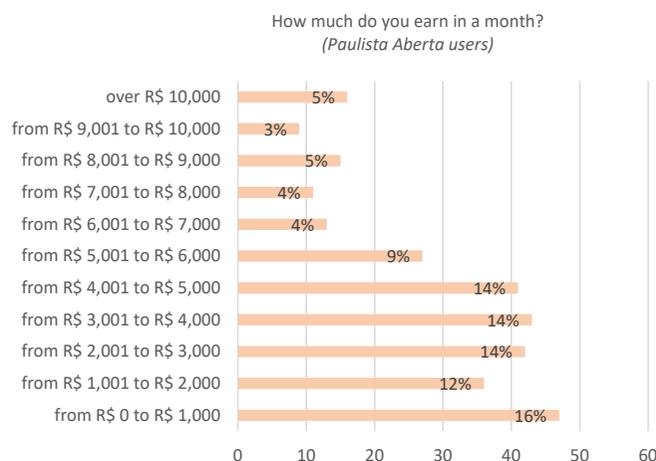
Gender & Age

52% Female, 47% Male and 1% Other.



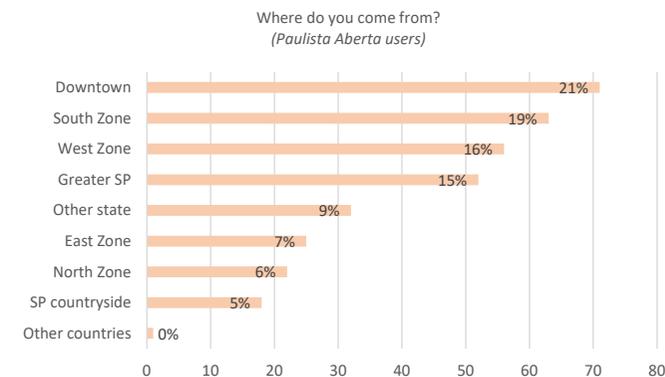
Income

58% above R\$3,000.00.



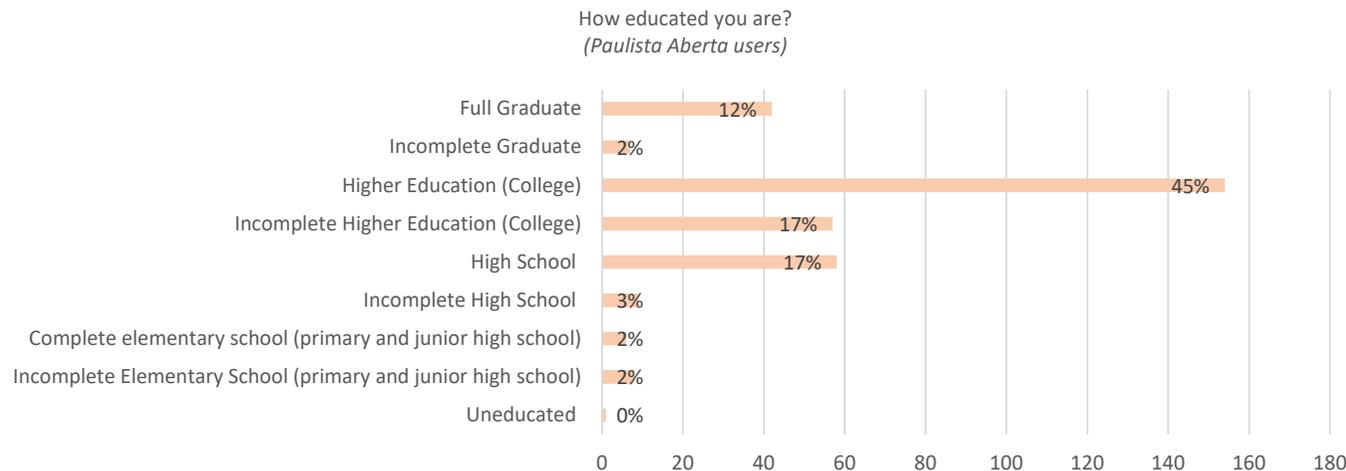
Residential Location

Most of them lives in Downtown, South Zone, West Zone, and Great São Paulo (São Paulo city and surroundings).



Schooling

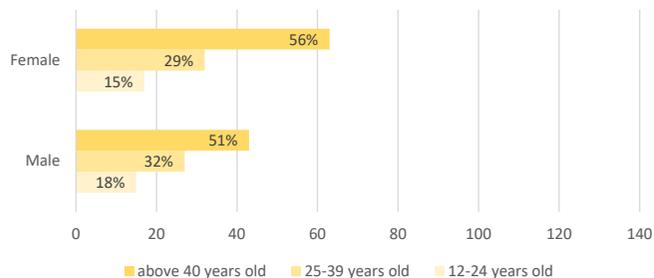
Three largest groups with Complete Higher Education (45%), Complete High School (17%) and Incomplete Higher Education (17%).



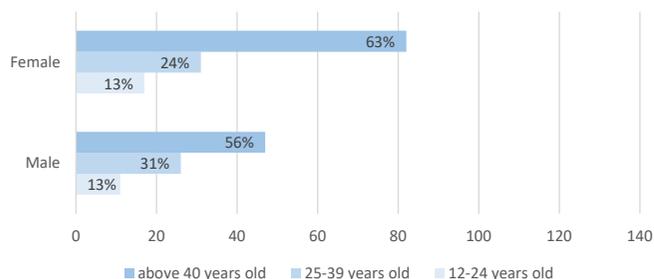
RESIDENTS

Gender & Age

How old are you? / What is your gender identity?
(Paulista Ave.'s residents)



How old are you? / What is your gender identity?
(Faria Lima Ave.'s residents)

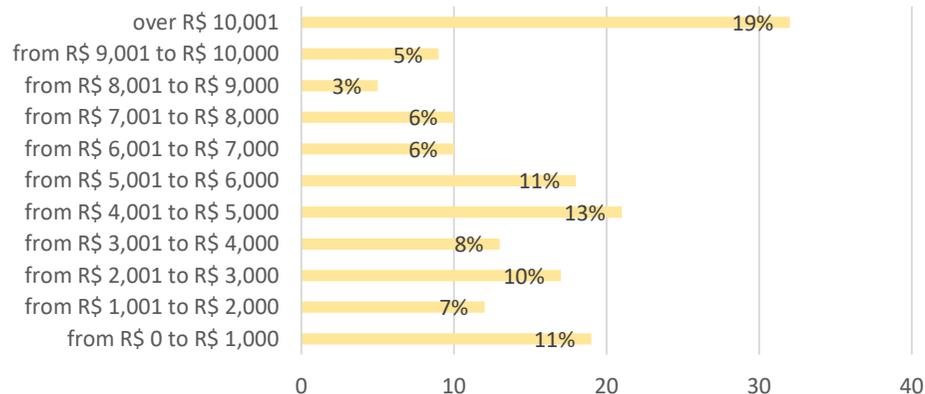


Income

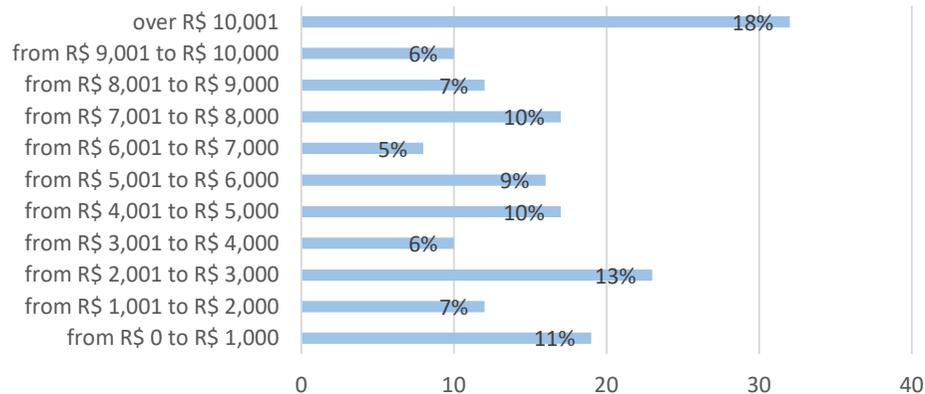
71% of Paulista Ave. and 69% of Brig. Faria Lima Ave. residents have an income above R\$ 3,000.00.

19% of Paulista Ave. and 18% of Brig. Faria Lima Ave. residents have an income above R\$ 10,000.00.

How much do you earn in a month?
(Paulista Ave.'s residents)



How much do you earn in a month?
(Faria Lima Ave.'s residents)



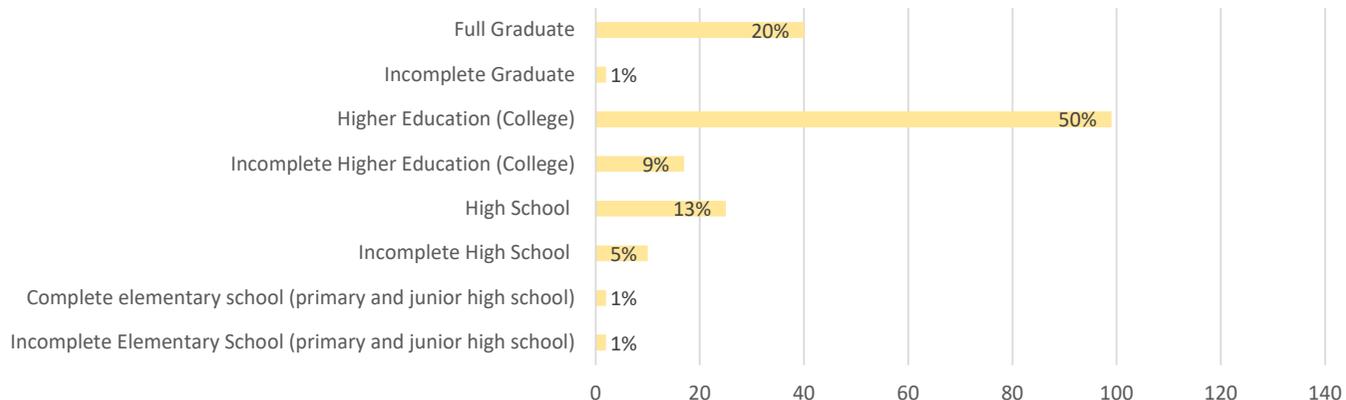
RESIDENTS

Schooling

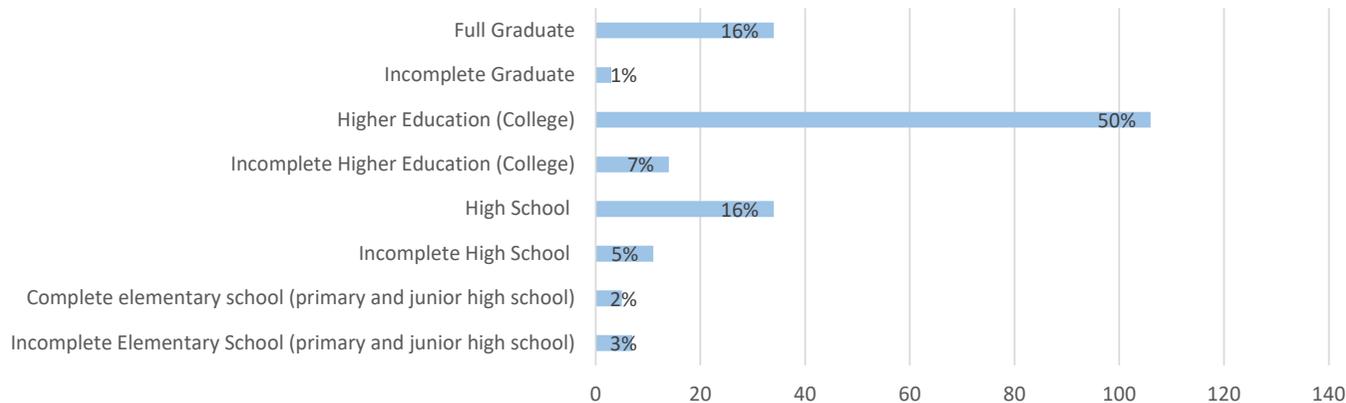
71% of the Paulista Ave. residents and 67% of Brig. Faria Lima Ave. residents hold a school degree, considering aggregate data of people with complete higher education and / or complete and incomplete graduate school.



How educated you are?
(Paulista Ave.'s residents)



How educated you are?
(Faria Lima Ave.'s residents)



ENVIRONMENTAL DIMENSION

AIR POLLUTION

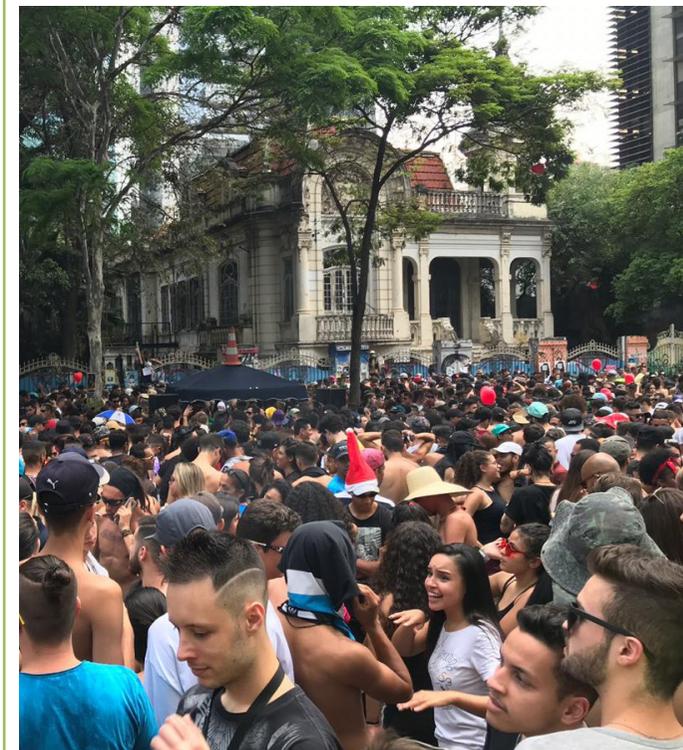
The calculation performed by synthetic control of secondary data available from the Environmental Company of the State of São Paulo (CETESB)'s gas measurement stations did not show an impact of the Paulista Aberta program on CO gas emissions on the Paulista Ave. area. It is worth noting that it was not possible to collect information on the beneficiaries' perception regarding air pollution, nor to collect primary data on the emissions at the site.

The nearest station to Paulista Ave. is Cerqueira César station, about 1 km from the Cyclist's Square [Praça do Ciclista]. Assuming that this station could reflect at least in part the emissions variations around Paulista Ave., it would be possible to estimate the impacts that the Paulista Aberta program would have on air quality in this area. It is essential to highlight the limitations of this method. The first is that the measuring stations are only able to capture variations in the emissions in the immediate surroundings from their locations themselves. Thus, we cannot assert that the Cerqueira César station would be registering the total emissions of the entire Paulista Ave. Also, the Cerqueira César station is not located precisely at Paulista Ave., but on a

nearby street. Another limitation is the accuracy of the pollutant measurement equipment: different equipment is not always as accurate, which increase difficulty in the comparability of samples.

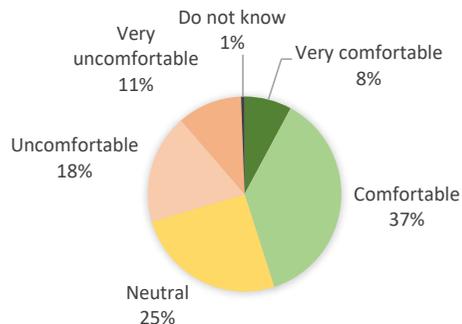
NOISE POLLUTION AT PAULISTA ABERTA

One of the reasons that had a great highlight regarding Paulista Aberta was the impact of public policy on the region's environment, especially concerning the perception of noise pollution. It can be caused by traffic or even by the considerable crowds of people gathering together around musical events.

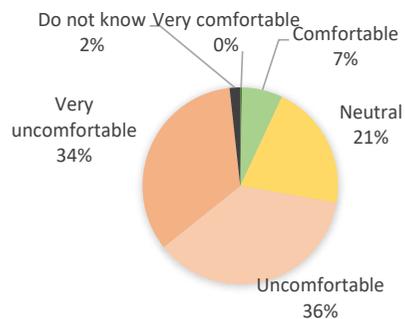


USERS

How would you rate Paulista Aberta's noise pollution level?
(Paulista Aberta's users)

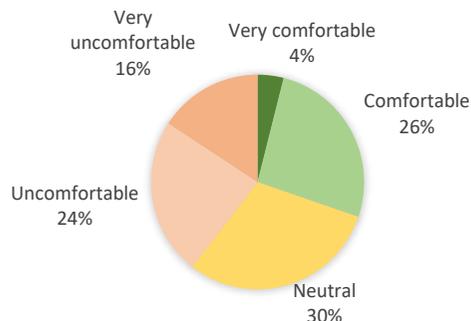


How would you rate Paulista Aberta's noise pollution level during workdays?
(Paulista Aberta's users)

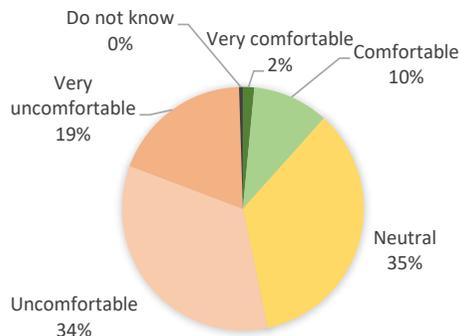


RESIDENTS

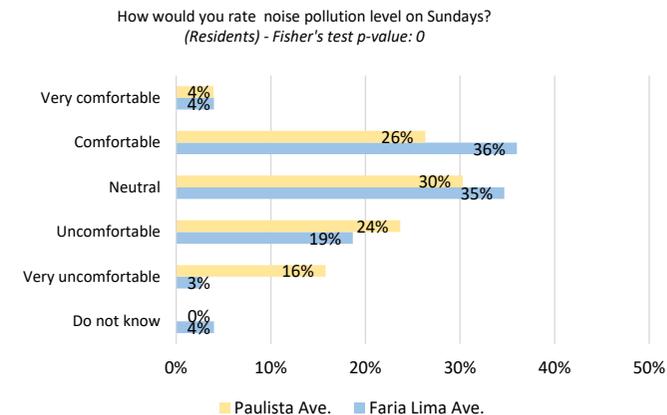
How would you rate Paulista Aberta's noise pollution level?
(Paulista Ave.'s residents)



How would you rate noise pollution level at Paulista Ave. during workdays?
(Paulista Ave.'s residents)

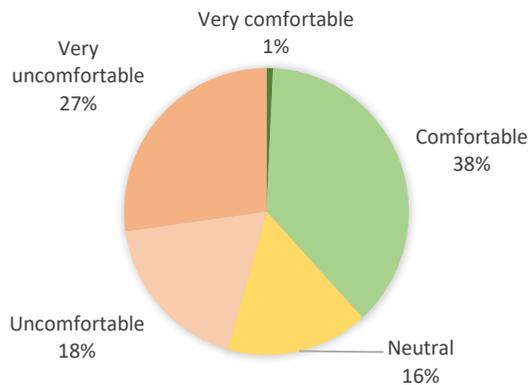


The comparison of averages between residents of the Paulista Ave. area and residents of Brig. Faria Lima Ave. shows a trend of greater discomfort around the Paulista Aberta, as it is clear in the chart below.

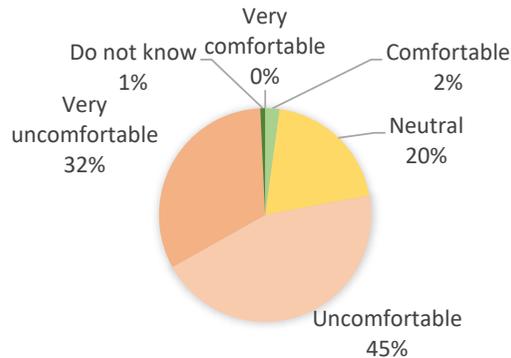


STREET VENDORS

How would you rate Paulista Aberta's noise pollution level on Sundays?
(Street Vendors at Paulista Aberta)



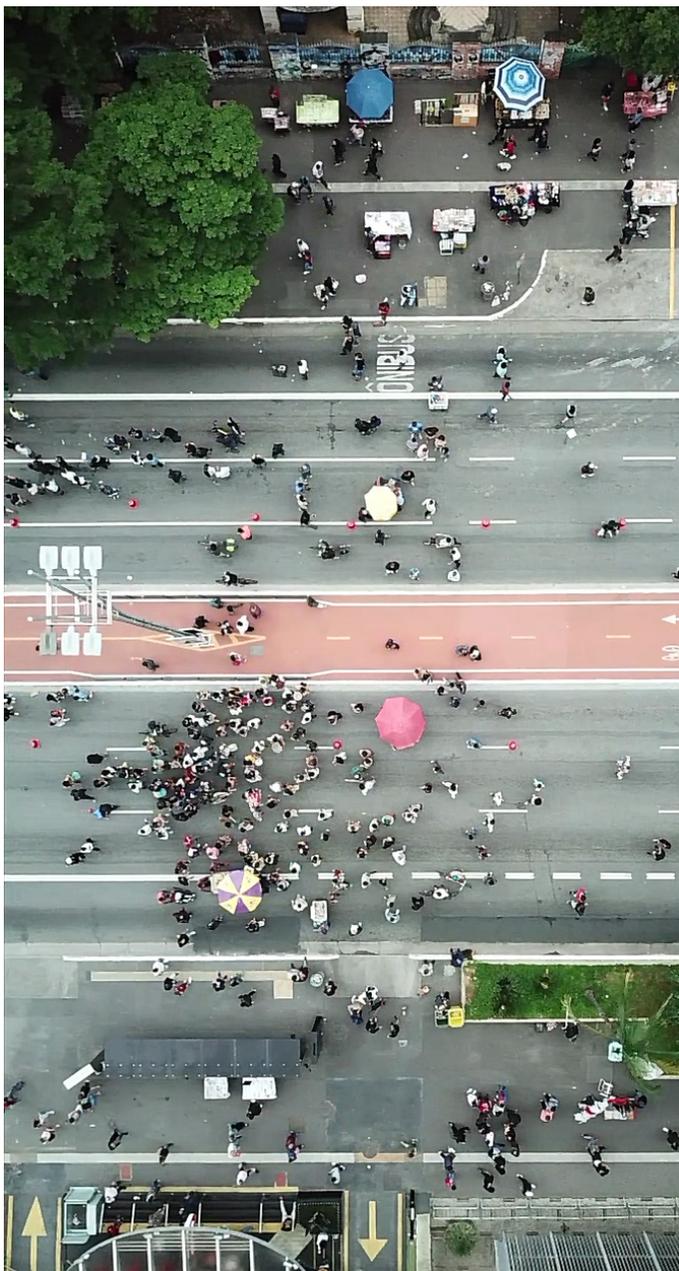
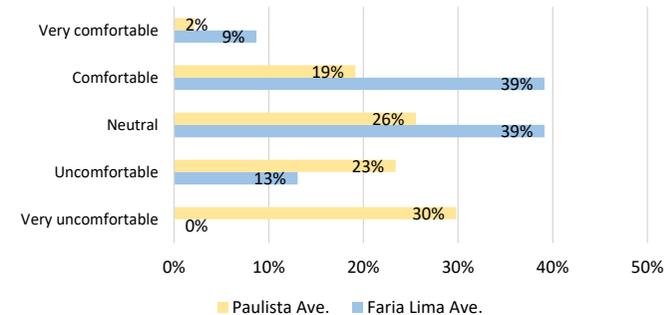
How would you rate noise pollution in the city of São Paulo?
(Street Vendors at Paulista Aberta)



GROUND-FLOOR RETAILERS

Regarding ground-floor retailers located at Paulista Ave., 53% of them feel “uncomfortable” or “very uncomfortable” on Sundays, being the less tolerant group about noise pollution at Paulista Aberta. For these retailers, during weekdays the rate of discomfort or much discomfort is much lower, at 27%. The comparisons of means show that the Paulista Ave.’s ground-floor retailers present a more significant discomfort than Brig. Faria Lima Ave.’s retailers.

How would you rate noise pollution level on Sundays?
(Ground-floor shops) - Fisher's test p-value: 0



URBAN DIMENSION

Built Environment

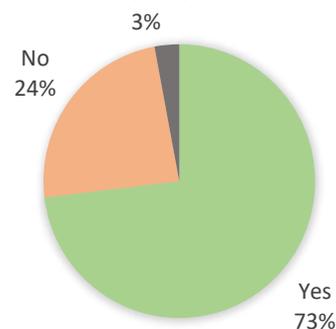
Aspects related to the type of specific use of the ground-floor establishments, shading, nocturnal illumination, and accessibility in the intersections are quite similar between the two routes investigated – Paulista Ave. and Av. Brig. Faria Lima. In both places, ground-floor establishments stand out uses related to services, business, food, and shops. There were found some minor differences in the dimensions of the track elements such as sidewalks and blocks with respect to the percentage of active facades (91% facades visually permeable at Paulista Ave. against 49% on Av. Brig. Faria Lima) and to the cycle infrastructure (83 para cycles at Paulista Ave. against 33 at Av. Brig. Faria Lima). Despite the lower number of para cycles at Av. Brig. Faria Lima, it is worth mentioning that surveys on urban mobility indicated a higher index of the use of the bicycle as a way of commuting among the residents of this region.

Use of public space

Among the target public, 73% of the users, 42% of the Paulista Ave.'s and 44% of the Av. Brig. Faria Lima's residents affirmed that Paulista Aberta had influenced them on performing a more significant number of activities in the public spaces, such as the streets and parks, in other moments of their daily basis routine.

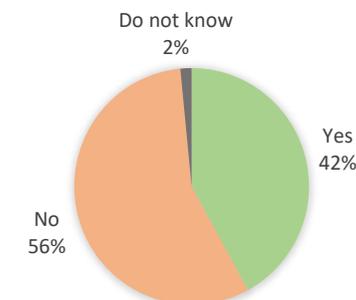
USERS

In your perception, has Paulista Aberta influenced you to perform more outdoor activities in public spaces, such as streets, squares, alleys, at other times of your daily life?
(Paulista Aberta's users)
Do not know

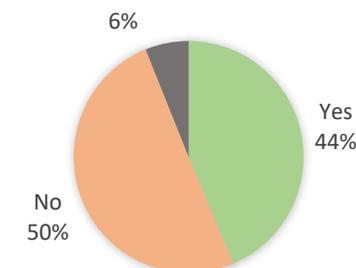


RESIDENTS

In your perception, has Paulista Aberta influenced you to perform more outdoor activities in public spaces, such as streets, squares, alleys, at other times of your daily life?
(Paulista Ave.'s residents)



In your perception, has Paulista Aberta influenced you to perform more outdoor activities in public spaces, such as streets, squares, alleys, at other times of your daily life?
(Faria Lima Ave.'s residents)
Do not know



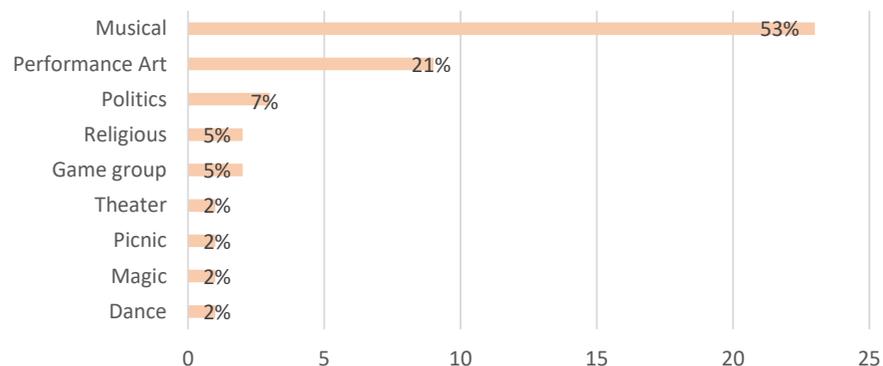
The counting through static drone shooting estimated an average of 950 pedestrians and 70 cyclists passing by every five minutes in the four points of the “Paulista Aberta” selected to shoot. On Av. Brig. Faria Lima, the research counted an average of 85 pedestrians and 36 cyclists during the same period in the four points chosen to observe.

The survey on the appropriation of public space identified 43 activities in a single course on a day of Paulista Aberta. There were 297 people involved in the organization of these activities and 2,379 people attending the events at that time.

The following chart points out the subjects related to the events that took place during Paulista Aberta as we performed this data collection.



Themes of the activities happening at "Paulista Aberta"



The number of people seated in makeshift places identified 428 people altogether during the survey with an average of 26 people in each of the 16 blocks of the Paulista Aberta extension. Traffic islands and curbs were the most improvised places as seats. In addition to the improvised seats, the bus-seat benches along the length of the avenue were busy. In front of the SESC Paulista banks were installed along the sidewalks, also widely used.

Although most of the activities and presentations were taking place on the sidewalks (66% of those involved in organizing the events were positioned on them), it is worth noting that most of the spectators (78%) were occupying the road. It reinforced the importance of releasing space for people to enable the accomplishment of these activities.

Urban Mobility

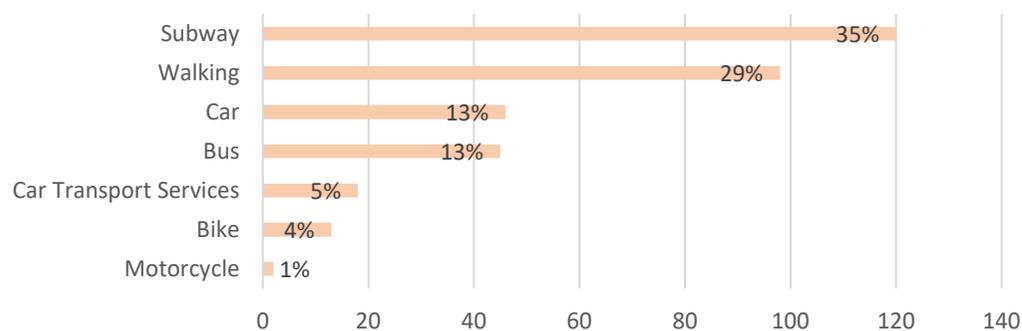
USERS

As for the last mode of transportation access to Paulista Aberta, public transportation (35%) and buses (13%) had the highest utilization rate among visitors, representing 48% of the local access modes, followed by walking (29%) and driving (13%). It is important to note that 29% (98) who came walking, only 18% out of them used another mode combined with walking, while the rest walked directly from home to Paulista Aberta. The research questioned those who attended Paulista Ave. before the implementation of the program, although no relevant variations were observed among the index of each mode of transportation. Overall, 31% who visited the area previously at that time declared they used the same

mode of transportation in the day they were surveyed.

Regarding the regions that respondents came from, most of them were from Downtown (37%), West Zone (20%) and South Zone (19%). The East and North zones had lower participation than the others, since only 6% and 5% of the respondents came from there, respectively.

What was the last mode of transportation you took to get to Paulista Aberta?
(Paulista Aberta's users)



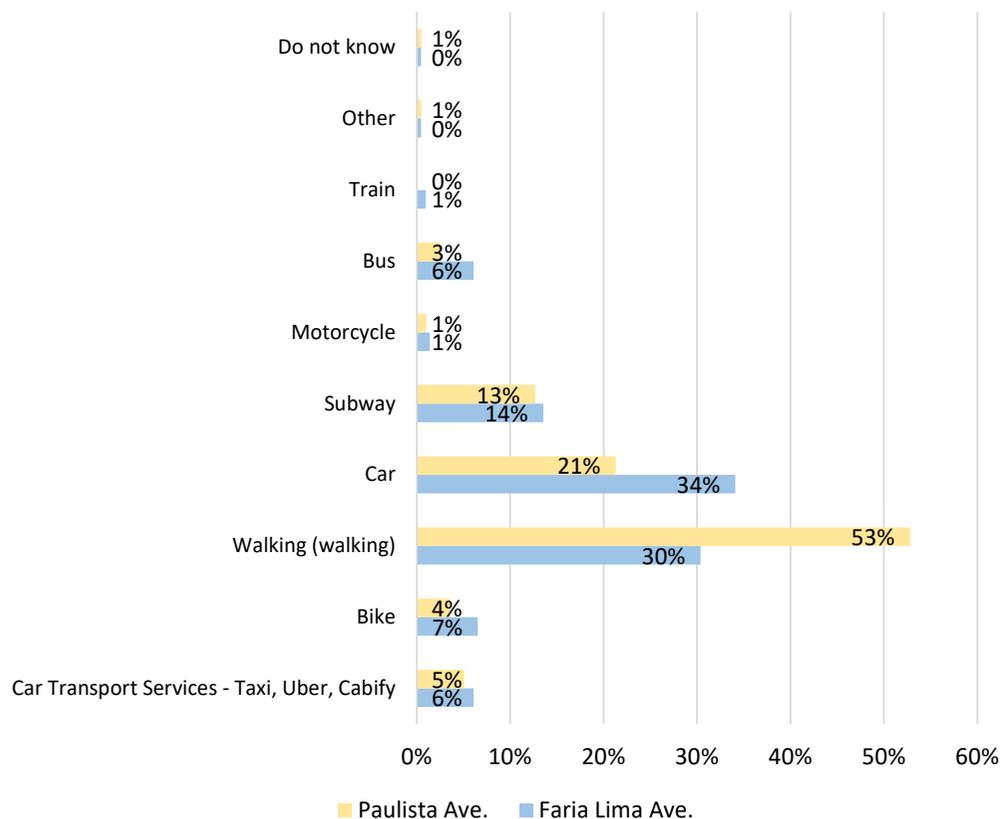
RESIDENTS

Car-driving through Paulista Ave. area on Sundays decreased (43% to 21%) and walking commuting increased (21% to 53%). When comparing data, it is possible to verify that the migration was mainly from

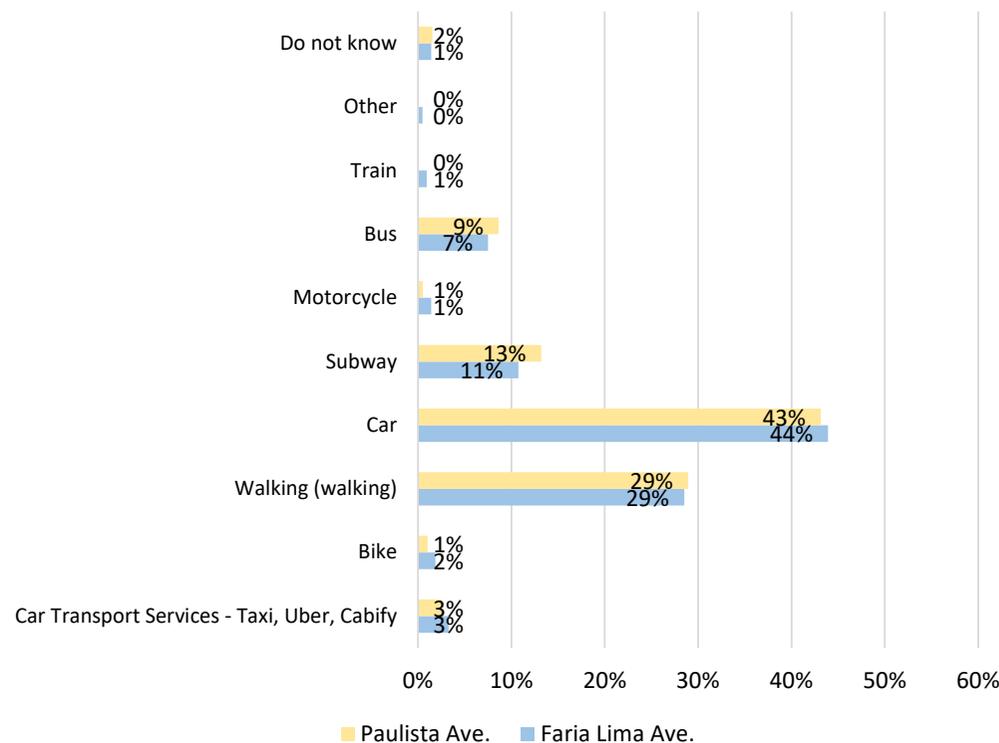
cars to walking at Paulista Aberta. It makes much sense considering that the residents have difficulty in driving due to the closing of Paulista Ave. to cars. Therefore, it was already an expected result. By doing the counterfactual analysis, there are impacts, indeed.

If before the intervention, the distribution of modal usage was practically the same, after the program, the patterns change considerably, as indicated below by the comparison of means.

Nowadays, which mode of transportation do you use most often on Sundays?
(Residents) - Fisher's test P-value: 0

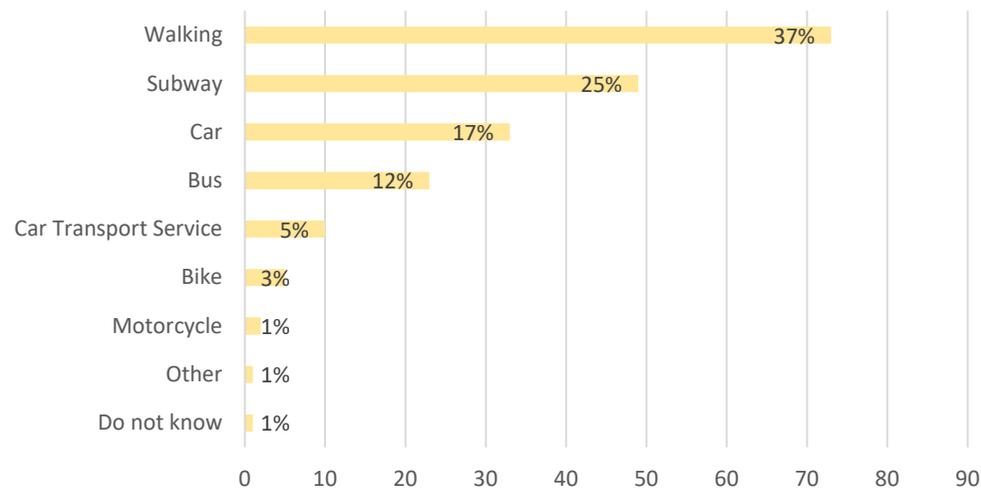


Before Paulista Aberta, which means of transportation did you use most often on Sundays?
(Residents) - Fisher's test P-value: 0,91

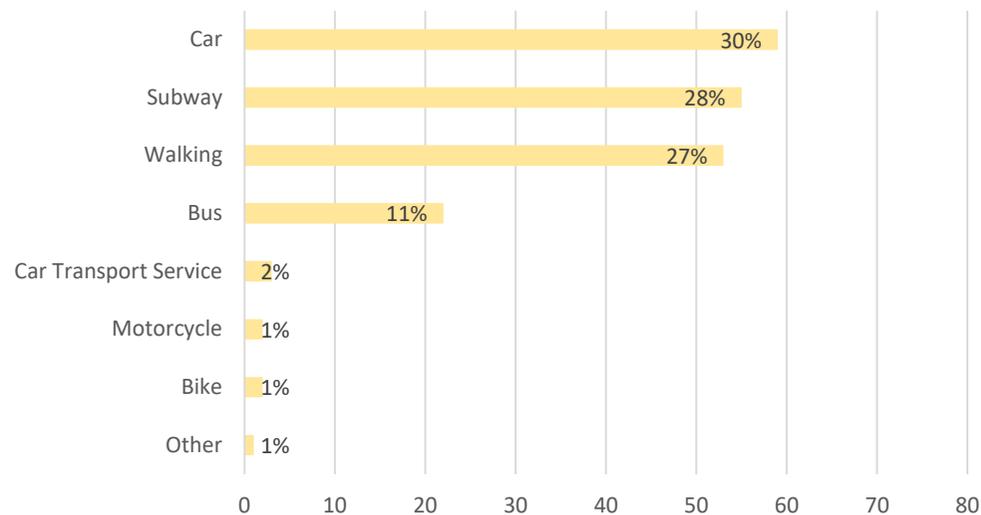


There were no effects observed on travel behavior during the weekdays. However, post-implementation trends of the Program were verified both at Paulista Ave. and Brig. Faria Lima Ave. areas regarding driving decrease in favor of walking increase, which can be seen in the charts below.

In your daily life, which mode of transportation do you use most often during weekdays?
(Paulista Ave.'s residents)

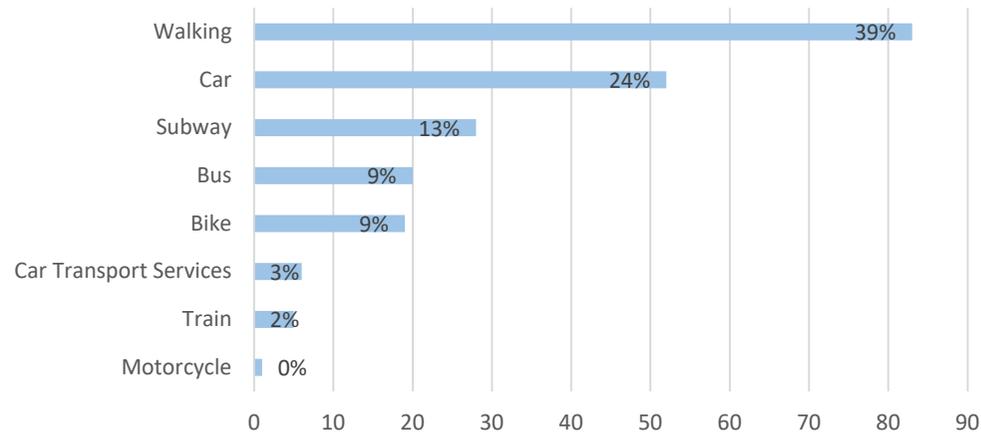


Before Paulista Aberta, which mode of transportation did you use most often during weekdays?
(Paulista Ave.'s residents)

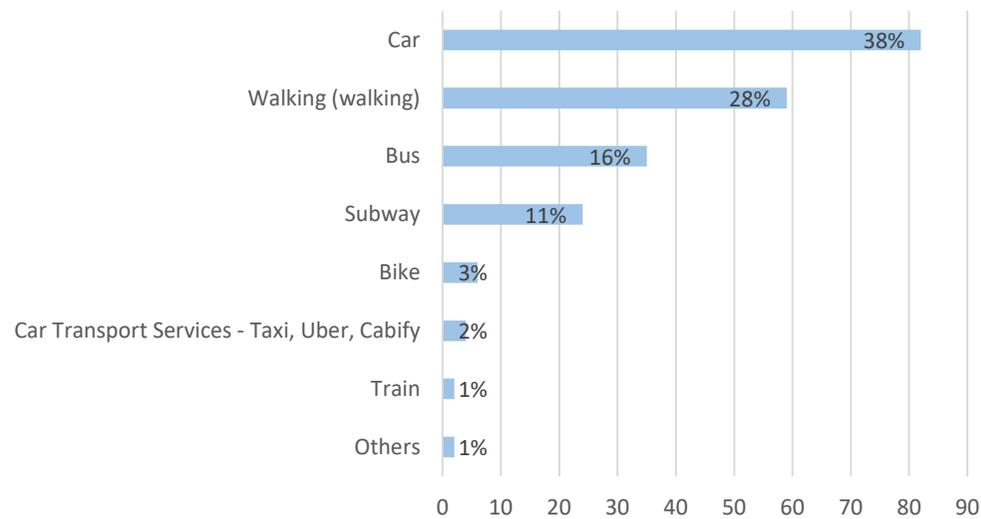




In your daily life, which mode of transportation do you use most often during weekdays?
(Faria Lima Ave.'s residents)



Before October 2015, which mode of transportation did you use most often during weekdays?
(Faria Lima Ave.'s residents)

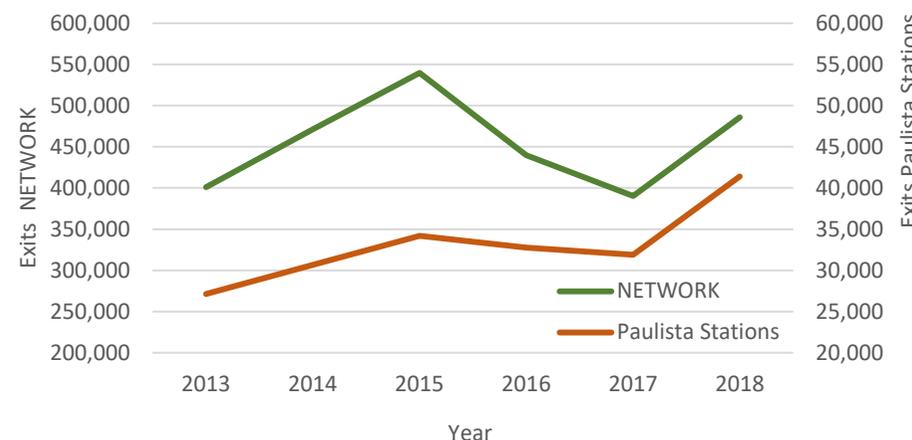


Subway secondary data

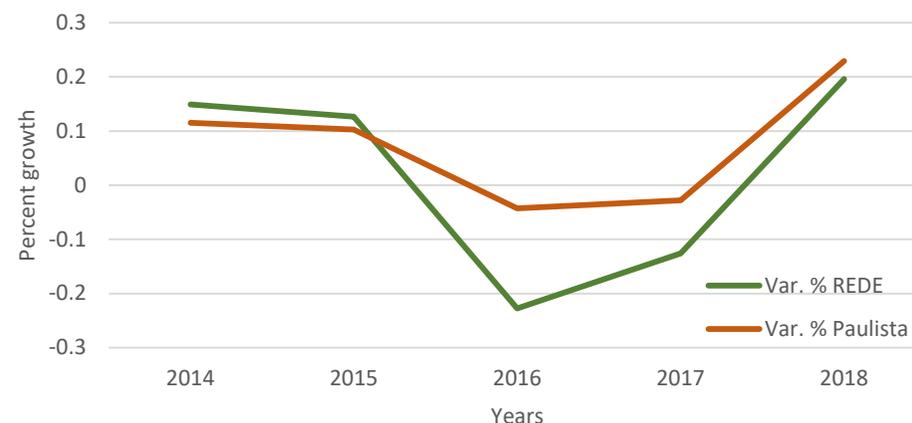
Due to data limitation, it was not possible to develop impact assessment models. However, the analysis of the available data already provides reasonable indications on the transformations in the mobility patterns over there. The data refer to the volume of entrances and exits of the subway stations located at Paulista Ave. (Brigadeiro, Trianon-Masp, Consolação) on Sundays in comparison of the total entries of lines 1- Blue, 2 – Green, 3 – Red, 5 – Lilac; and outputs from the lines 1 – Blue, 2 – Green, 3 – Red.

It is worth noting how the subway stations along Paulista Ave. show smaller declines in the volume of passengers about the other stations in the less successful years. More impressive still is that this phenomenon occurs after 2015. Before 2015 the trajectory of the two groups is very similar, which can be better seen in the second chart (note how the growth rates evolve in parallel for the two groups). Since the Paulista Aberta’s kick-off in 2015, Paulista Ave. subway stations have always increased their number of passengers than other subway lines, which suggests that more and more people has gone to Paulista Aberta. Even when growth is negative from year to year, Paulista Ave. subway stations experiences fewer passenger declines than others.

Exits Volume Evolution
(typical months - May)



Percentage Change in Exits Volume
(typical months - May)

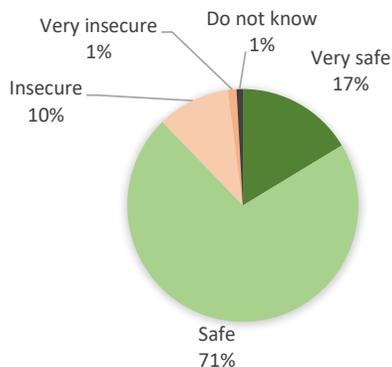


Although it is not appropriate to assume causality in this case, the research concluded that there are indications that Paulista Aberta has attracted more people when comparing the subway stations along Paulista Ave. to the subway network.

Public Security at Paulista Aberta

USERS

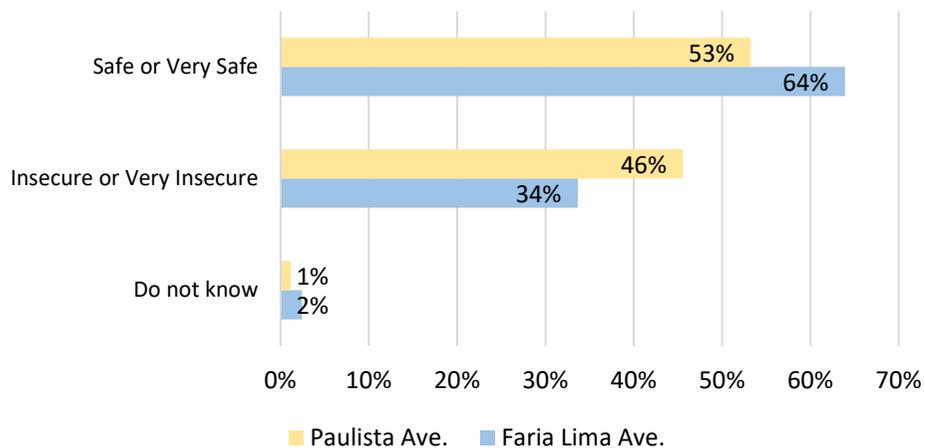
How do you consider Paulista Aberta's public safety as a user's perception?
(Paulista Aberta's users)



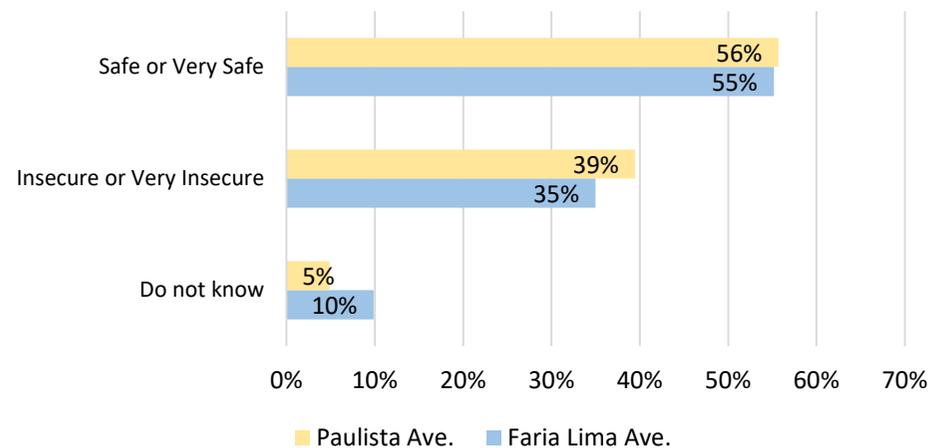
RESIDENTS

Evidence showed that 60% of residents in the Paulista Ave. area finds Paulista Aberta "Very Safe" or "Safe" and 39% "Very Unsafe" or "Unsafe." The comparison of means with residents of the Brig. Faria Lima Ave. shows a tendency of greater insecurity in the place according to the opinion of the residents of the Paulista Ave. area after the implementation of the program.

How would you rate public safety on Sundays nowadays?
(Residents) - Fisher's test p-value: 0,049



How did you consider public safety on Sundays before Paulista Aberta?
(Residents) - Fisher's test p-value: 0,16



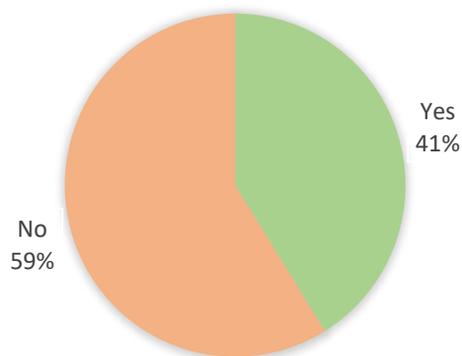
SOCIAL DIMENSION

Physical Exercise at Paulista Aberta

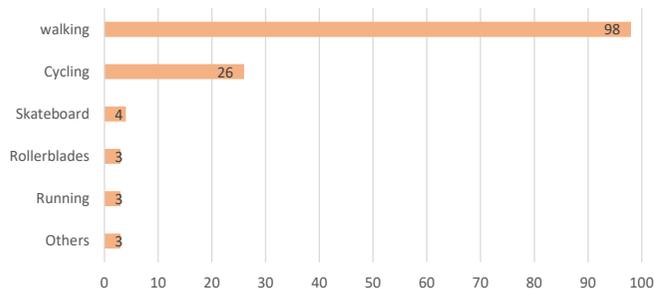
USERS

Among interviewees, 41% of them reported having a habit of practicing some physical exercise during their visits to Paulista Aberta. The main exercises practiced are walking and cycling.

Are you used to performing any physical exercise at Paulista Aberta?
(Paulista Aberta's users)



What is the physical exercise that you perform at Paulista Aberta?
(Paulista Aberta's users) - MULTIPLE CHOICE

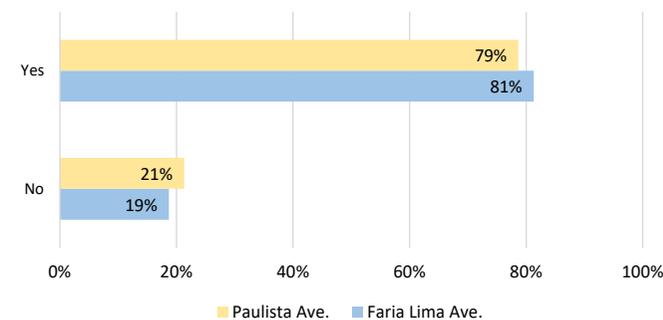


RESIDENTS

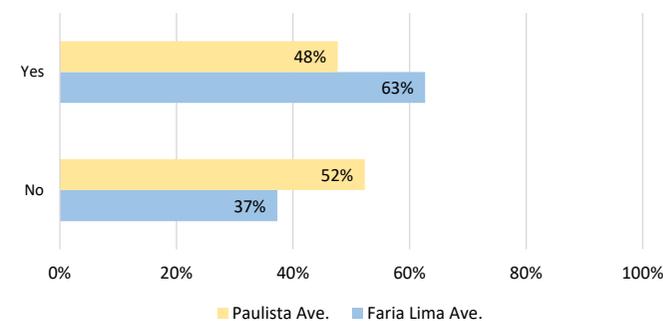
Regarding the residents of the Paulista Ave. area, 52% of those who attend Paulista Aberta practice physical exercises there.

The comparison of means between the Paulista Ave. area's residents and its counterfactual shows that there is a much higher percentage of the Brig. Faria Lima Ave. area's residents who use the street to practice physical activities on Sundays. Therefore, the counterfactual analysis shows trends of less use of the place for physical activities by the residents of the program region. It might be explained by the fact that the Paulista Aberta has become a space more conducive to cultural activities and shopping and less conducive to the practice of sports for its residents.

Nowadays, do you practice any physical exercise?
(Residents) - Chi-squared test p-value: 0,51



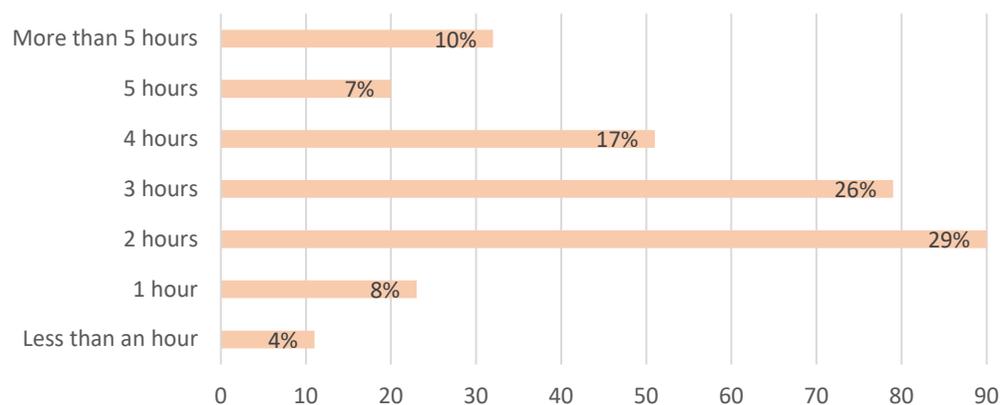
Do you practice any physical exercise at the avenue on Sundays nowadays?
(Residents) - Chi-squared test p-value: 0,03



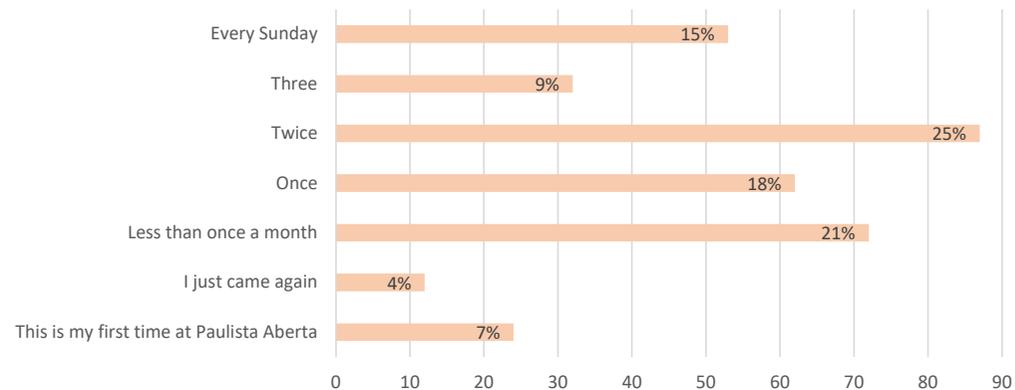
Recreational Habits

USERS

How long do you stay at Paulista Aberta when you visit it on Sundays? (Paulista Aberta's users)

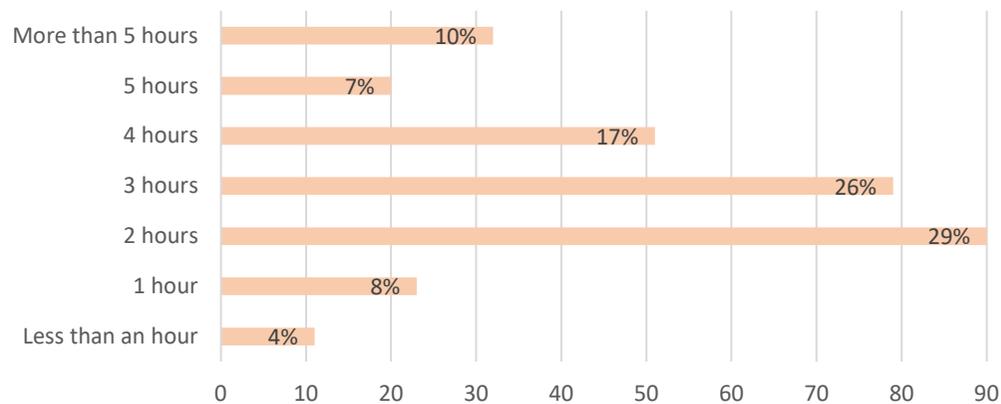


How many Sundays per month do you come to Paulista Aberta for recreational purposes? (Paulista Aberta's users)



It is shown that 89% of the visitors regularly go to Paulista Aberta as 25% go at least twice a month. Regarding the time spent on visits, 29% spent 2 hours at the site and 26% spent around 3 hours. In addition to physical exercises, the main recreational activities are shopping, music-related activities, and cultural centers.

How long do you stay at Paulista Aberta when you visit it on Sundays? (Paulista Aberta's users)

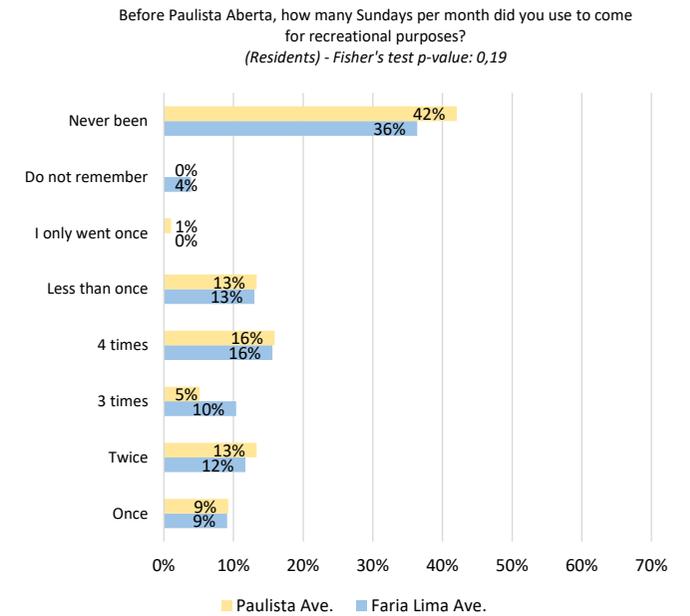
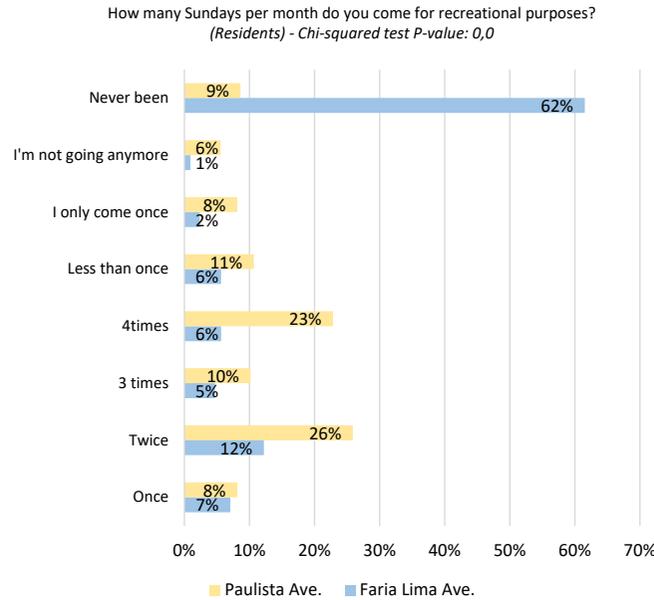
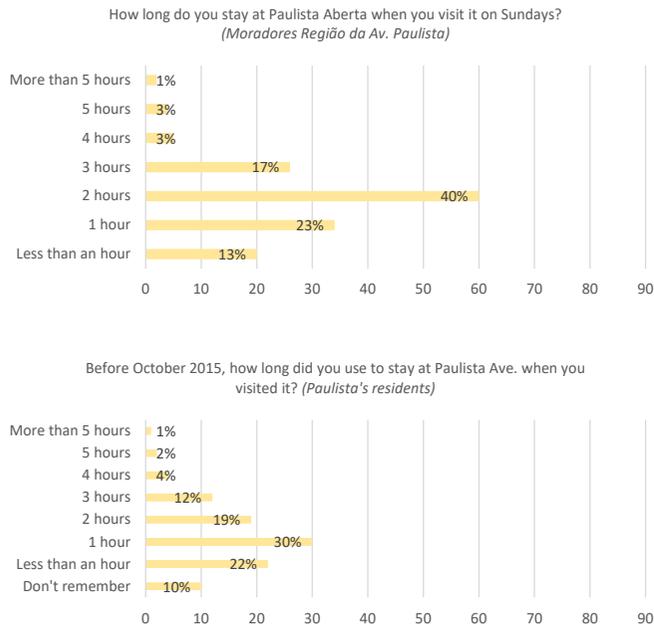


RESIDENTS

It is shown that 79% of the residents in the surrounding area regularly visit the Paulista Aberta as 23% declared that they go on every Sunday of the month. Regarding the time spent on visits, 40% spent 2 hours, and 23% spent around 1 hour there. The main activities they perform during Paulista Aberta are also related to shopping, music, cultural centers, and movies.

The counterfactual analysis shows that the Paulista Aberta induced an impact on the residents' recreational habits on Sundays, attracting them to perform more activities outdoors. As can be seen in the chart below, there are significant differences in the recreational habits between Paulista Ave.'s and Brig. Faria Lima Ave.'s residents. It is impressive a large number of residents of Av. Brig. Faria Lima who have never been outdoors (specifically there) for

recreational activities. The fact that habits before program implementation were similar between the two groups reinforces the impact of Paulista Aberta on the recreational habits of the Paulista Ave.'s residents.



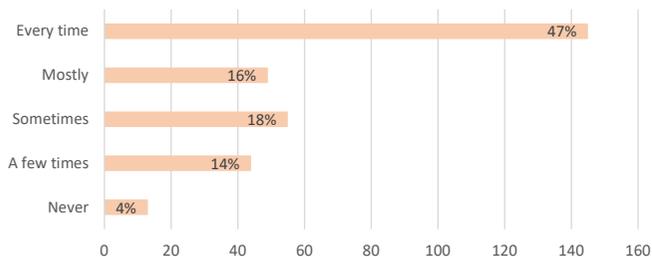
ECONOMIC DIMENSION

Consumption Habits

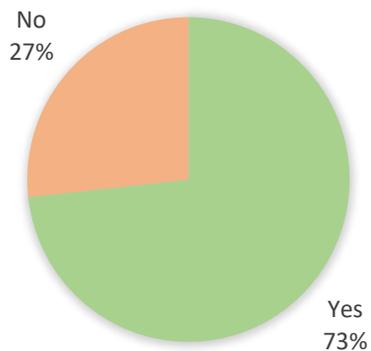
USERS

Almost 50% of shoppers always consume something on all their visits as 73% reported having consumed something on their last visit to Paulista Aberta.

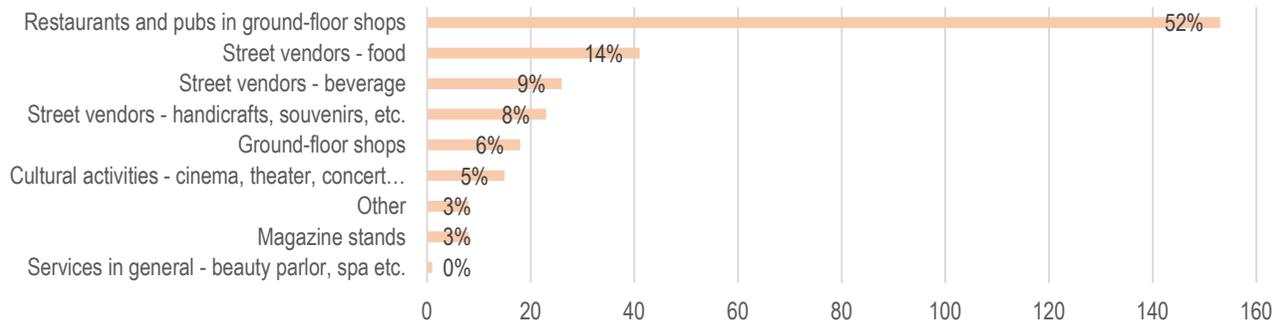
When you are at Paulista Aberta, how often do you consume or buy anything from shops and services around Paulista Ave.?
(Users)



Have you consumed anything on your last visit to Paulista Aberta?
(Users)



When you are at Paulista Aberta, what kind of shops or services do you consume the most?
(Users)

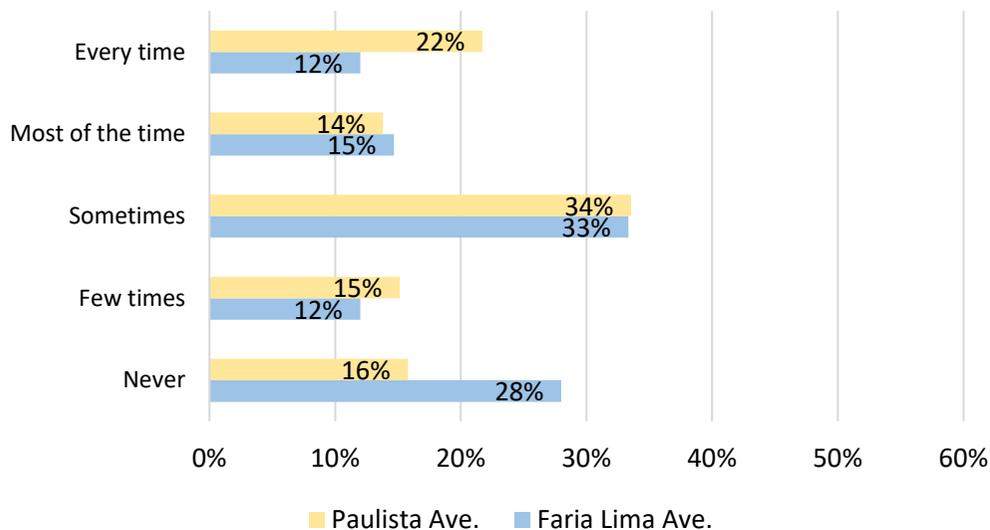


RESIDENTS

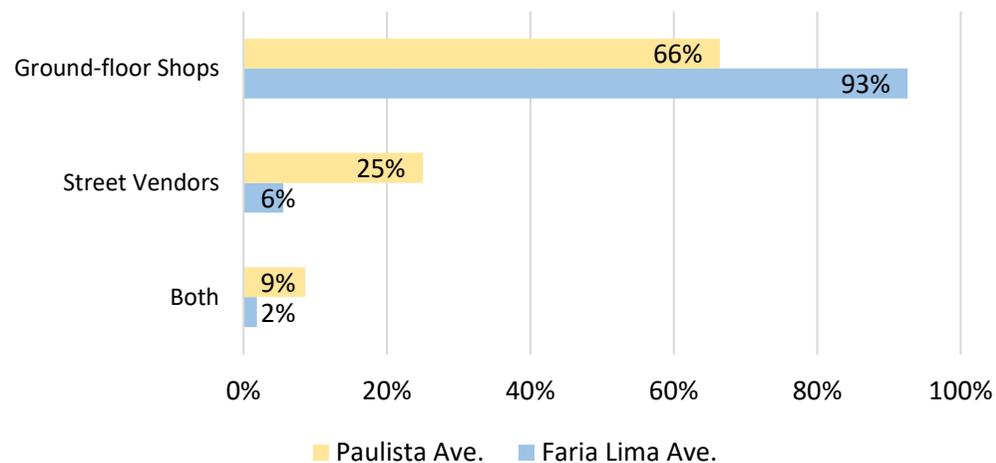
The counterfactual analysis showed that there was no influence of the program on the frequency of consumption of Paulista's residents, but it pointed out trends of higher consumption outdoors – such as through street vendors – in this group compared to the residents of the Brig. Faria Lima Ave. area.

The chart below shows the relationship between both groups of residents. There is much more pre-provision for consumption outdoors at Paulista Ave. than at Av. Brig. Faria Lima, in general.

When you are at Paulista Aberta, how often do you consume or buy anything from shops and services around Paulista Ave.?
(Residents) - Chi-squared test P-value: 0,152



On Sundays, do you think you consume more in ground-floor street shops or with street vendors at Paulista Aberta?
(Residents) - Chi-squared test P-value: 0,0



RETAILERS

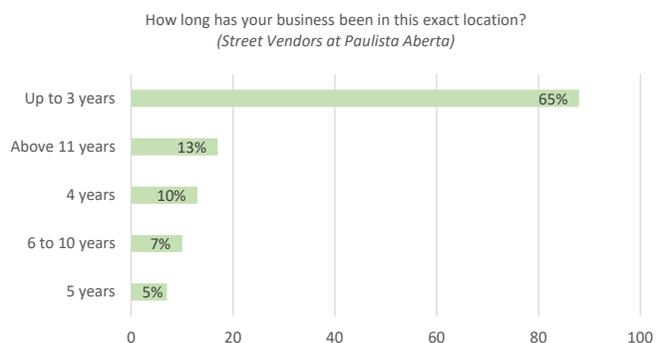
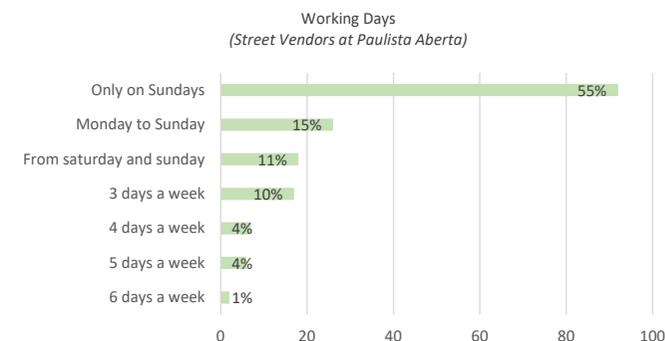
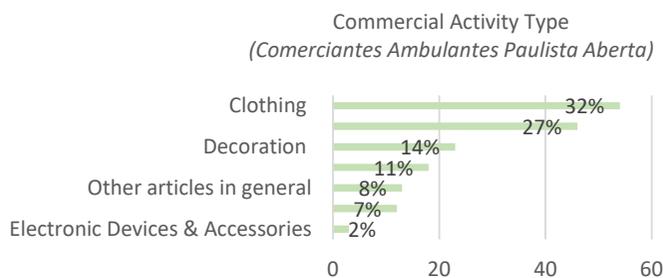
Researchers were able to contact the owner or manager and thus obtain information of 62% (63 out of 102) of the shops identified at Paulista Ave. and 72% (81 out of 110) at Brig. Faria Lima Ave. to estimate the number of local retailers. In the case of street vendors at Paulista Aberta, 80% (136 out of 169) responses were obtained from all those identified. Due to the low number found at Brig. Faria Lima Ave., it was not possible to elaborate an aggregate analysis of this category and, therefore, a counterfactual analysis for this group could not be performed.

Number of respondents/ number of establishments surveyed:

Paulista Ave.		Brigadeiro Faria Lima Ave.	
Ground-floor shops	Street vendors	Ground-floor shops	Street vendors
63/102	136/169	81/110	3/5

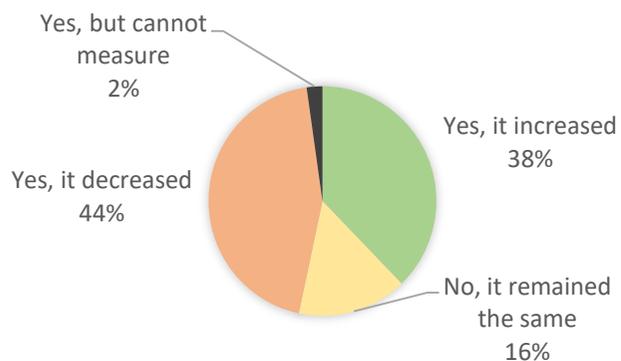
STREET VENDORS

Characterization and operating data

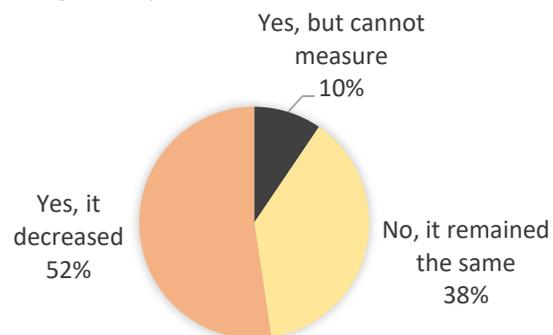


Regarding the flow of customers on Sundays, 53% indicated that it increased, 25% that decreased, and 20% that remained the same. On the weekdays, only 5% indicated that the flow increased and for 62% it remained the same, having decreased to 28%. For 73%, the public remained the same after the implementation of Paulista Aberta and 27% of the retailers perceived any differentiation in their public. Regarding the change in total fixed or variable costs, for 59% there were no changes, and for 36% their costs increased. Only 5% indicated a decrease in their costs. The vast majority (91%) did not hire new employees after the implementation of the Paulista Aberta.

After Paulista Aberta, do you think there was any change in your sales volume on Sundays? (Street Vendors at Paulista Aberta)



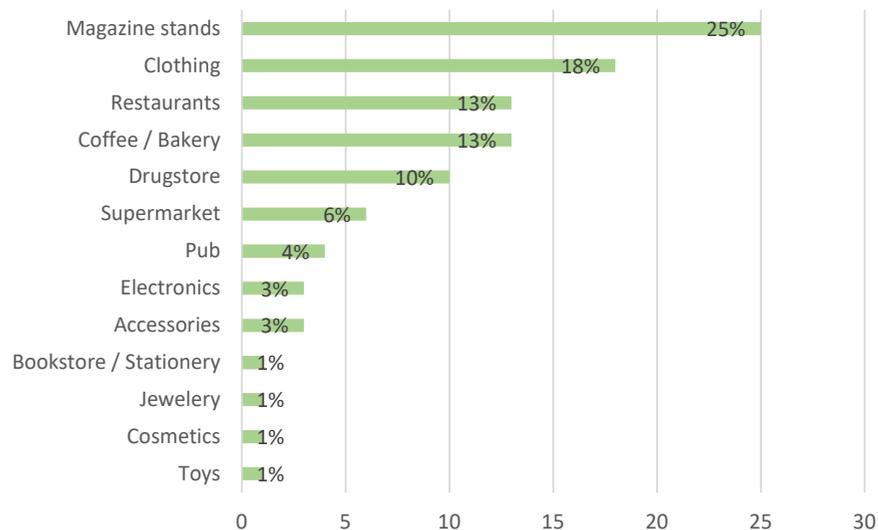
After Paulista Aberta, do you think there was any change in your sales volume during weekdays? (Street Vendors at Paulista Aberta)



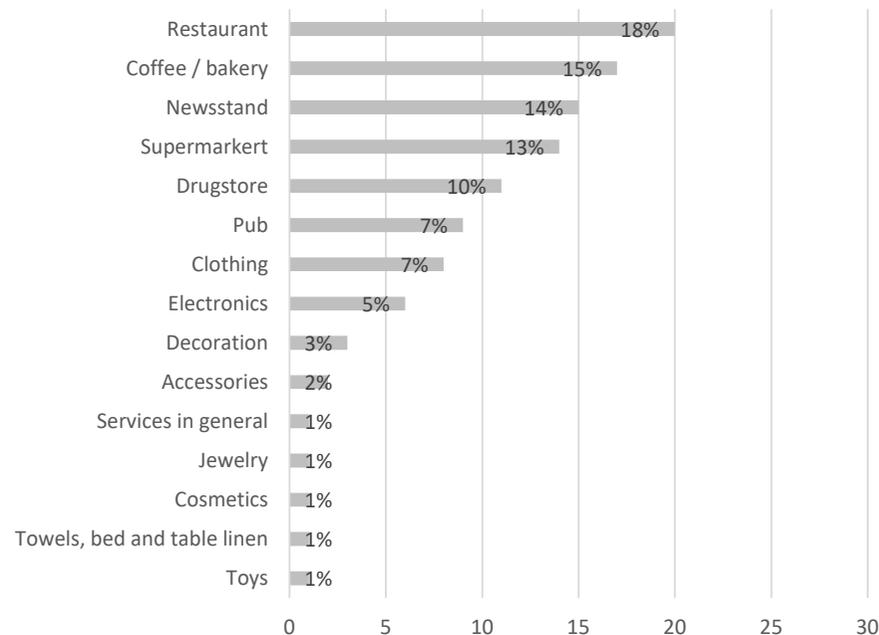
GROUND-FLOOR SHOPS

Characterization and operation data

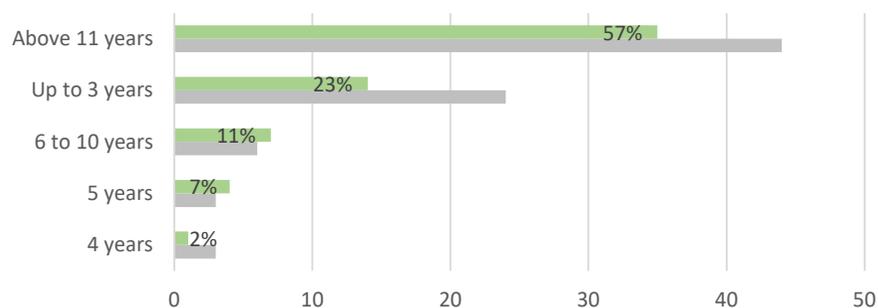
Commercial Activity Type
(Ground-floor stores at Paulista Av.)



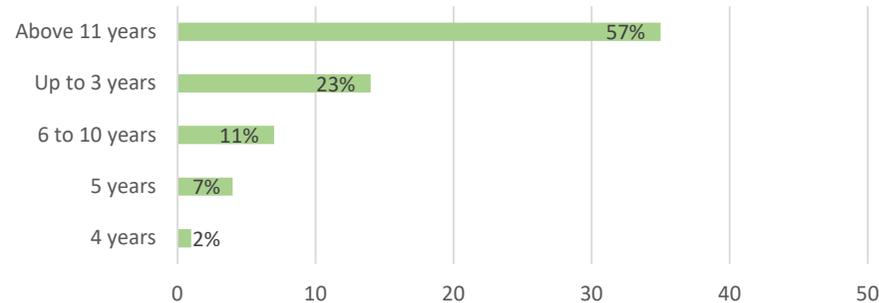
Commercial Activity Type - Ground-floor stores at Faria Lima Av.



How long has this business been in this exact location?
(Ground-floor shops at Paulista Ave.)

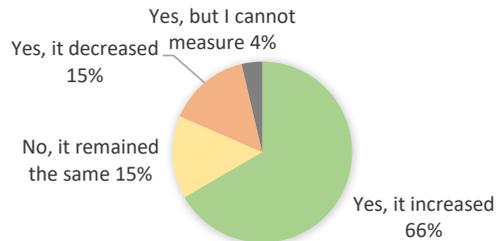


How long has this business been in this exact location?
(Ground-floor shops at Paulista Ave.)

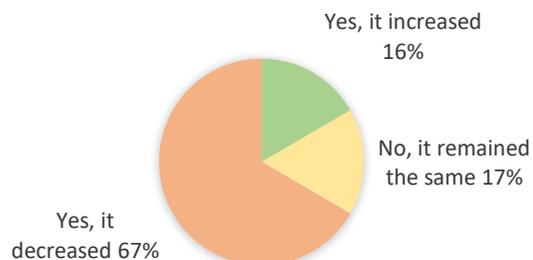


Sales amount

After Paulista Aberta, was there any change in your sales volume on Sundays?
(Ground-floor shops at Paulista Ave.)



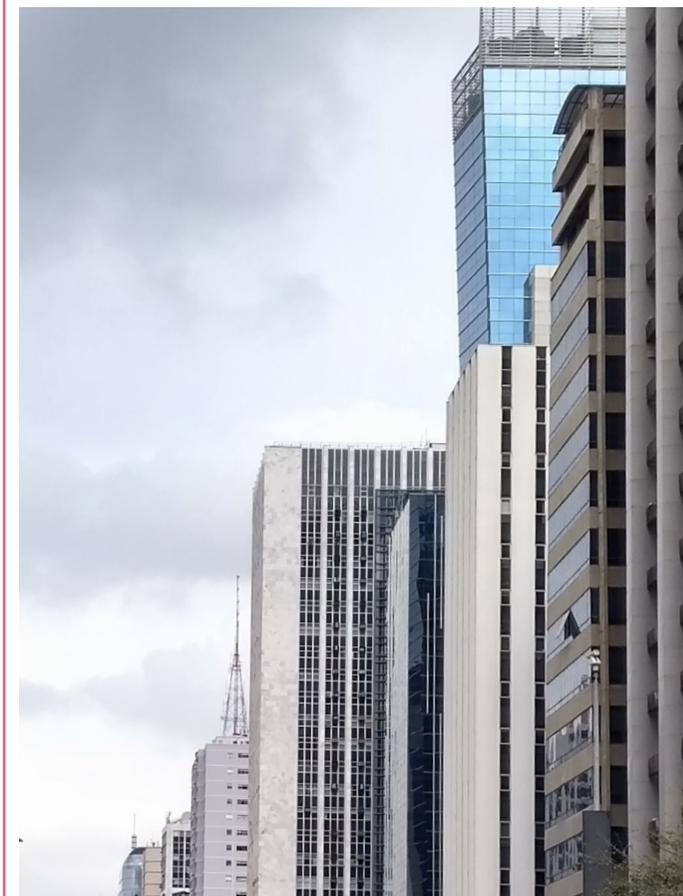
Since October 2015, have there been any changes in your sales volume on Sundays? If so, has it increased or decreased?
(Ground-floor shops at Faria Lima Ave.)



The comparison of means pointed out trends at Paulista Ave.'s retailers perceiving that their flow of customers and sales volume is better compared to the same perception regarding Brig. Faria Lima Ave.'s retailers. On Sundays, this trend is higher than on weekdays, even with opposing perceptions regarding changes in sales volume on Sundays after the implementation of the Paulista Aberta. because there was a perception of an increase at Paulista Ave. as at Brig. Faria Lima Ave. a perception of decreased sales on Sundays. Concerning the investments performed by retailers, whether, in the hiring of employees or works on their facades or sidewalks, there are no significant differences between the averages of the two locations.

REAL ESTATE VALUES

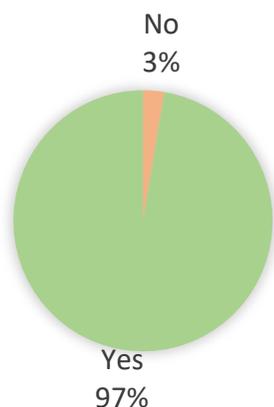
The impact check performed by synthetic control used the ZAP Group data to verify the effects on a possible real estate valuation that the Paulista Aberta program could cause to the property and rent values in the region. The measurements did not show effects either of appreciation or real estate devaluation in the region.



PAULISTA ABERTA EVALUATION BY ITS BENEFICIARIES

USERS

Are you in favor of Paulista Aberta?
(Paulista Aberta's users)



Why are you in favor of Paulista Aberta?
(Paulista Aberta's users)

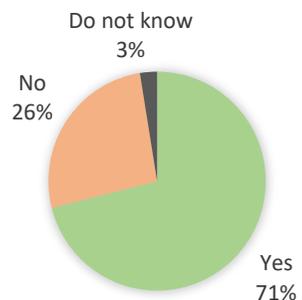


About the nine users who declared that they were not in favor of Paulista Aberta, the reasons were the increase in noise pollution, public insecurity, and the fact that the car-restriction disturbed their commuting habits on Sundays.

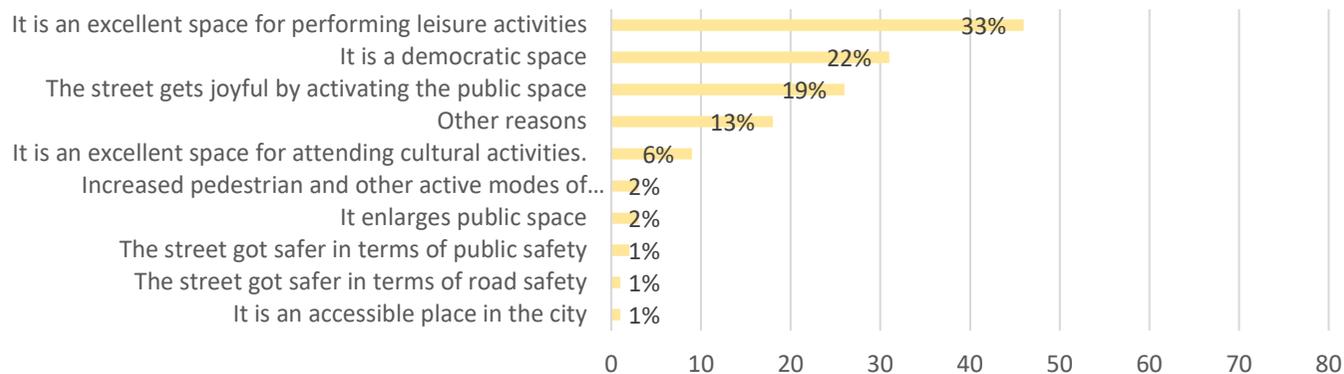


RESIDENTS

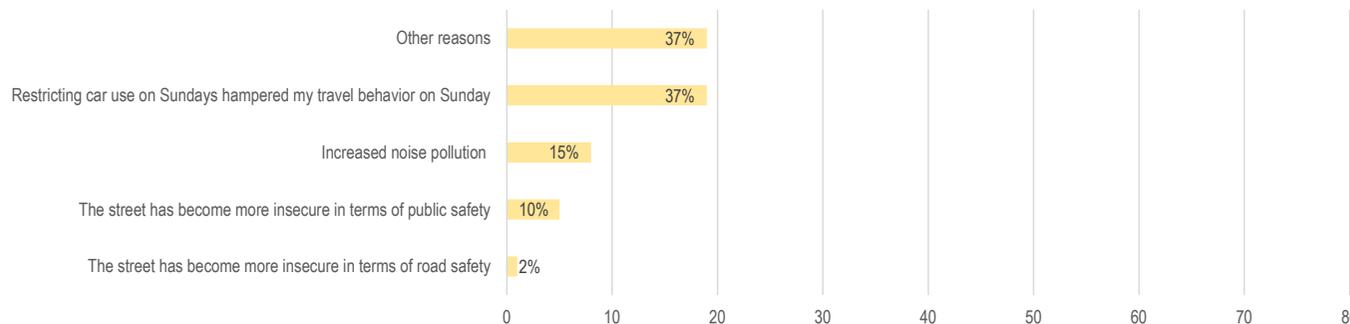
Are you in favor of Paulista Aberta?
(Paulista Ave.'s residents)



Why are you in favor of Paulista Aberta?
(Paulista Ave.'s residents)



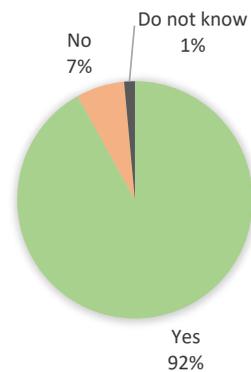
Why are you not in favor of Paulista Aberta?
(Paulista Ave.'s residents)



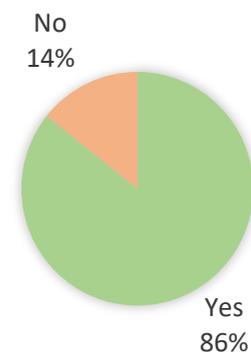
RETAILERS

Paulista Aberta had high rate of approval among the beneficiaries of the program. The research did this question to street vendors at Brig. Faria Lima Ave., where 82% said they favored the program, 49% were favorable before the beginning, 29% did not know the program and 16% had restrictions.

Are you in favor of Paulista Aberta program by transforming Paulista Ave. into a recreational, car-free space on Sundays and Holidays? *(Street Vendors at Paulista Aberta)*



Are you in favor of Paulista Aberta? *(Ground-floor shops at Paulista Ave.)*



SUGGESTIONS FOR OTHER PLACES TO HOST THE PROGRAM

All the groups interviewed mentioned Brig. Faria Lima Ave. as the most suggested avenue to host the program, reaching the first place with 40 votes as the second place got only 6 votes. Brig. Faria Lima Ave. also stood out

among Paulista Ave.'s residents, with 14 votes out of the 81 places indicated. In the group of the Brig. Faria Lima Ave.'s residents, more than half suggested the avenue itself to host the program – 55 people out of 91.



The implementation of the Paulista Aberta program seeks to encourage the appropriation of the public space for recreational and sporting practices, besides stimulating economic and cultural activities. The logical model of this impact assessment started from the hypothesis that the Paulista Aberta would have the potential to contribute to the urban vitality and the people's quality of life who visit Paulista Ave. by dynamizing the social and economical use of this area and consequently contributing to reducing air pollution. To comply with the central objective of the study, the research elaborated analyzes and diagnoses on indicators related to environmental, urban, social, and economic dimensions.

The data presented in this booklet show evidence that the program contributed positively to stimulate the use of the public space of Paulista Ave. for recreational activities, stimulating the use of other public spaces scattered along São Paulo, such as streets and squares, according to interviewees. However, there was no positive or negative effect on the issue of air pollution in the analyses we carried out using existing gas emissions data from the city's measuring stations. Evidence was also presented on how the use of this public space encourages the consumption of merchandises and the flow of customers in local commerce.

The comparison of some of the results found in the present study with data from the surveys applied by Datafolha (2016), Cidade Ativa (2015) and Sampapé (2015) reinforce some identified effects and trends. Regarding leisure habits at Paulista Aberta, it was verified that, at least 78% of the residents of the region visit the program with some regularity to carry out leisure activities. In this group, the counterfactual analysis shows evidence that the Paulista Aberta attracted the residents of the region to visit more frequently the place for leisure activities. This tendency also appears when, according to the Datafolha in 2016, those who declared that they never visited the Paulista Aberta accounted for 25%, an index that fell to only 9% of respondents according to data from the present study. Regarding the practice of physical exercises, as reported by the 2016's Datafolha survey, according to the residents interviewed, the main exercises performed by them during Paulista Aberta are walking and cycling. The survey of the Active City of the previous year (2015) also pointed to these two activities as the two most voted by respondents attending Paulista Ave.

The data collection to evaluate the Paulista Aberta by its beneficiaries showed that 97% of customers are favorable to the program. Most of this group (76%) indicated that they would visit another place that might be transformed

into a car-free space on Sundays, especially suggesting Brig. Faria Lima Ave. to become one of these places. In 2015, during the pilot, 88% of Paulista Ave. users were in favor of the intervention. As for the residents surveyed in this research, 71% declared to be favorable to the program and 26% against, for reasons like those of the regulars. In 2016, according to Datafolha's survey, a slightly lower percentage of residents stated that they favored opening the avenue on Sundays – 61% favorable and 35% declared against it. It is interesting to note that both studies found a trend of a higher rate of unfavorable people in the groups above 40 years old. Also, in the group of residents, Brig. Faria Lima Ave. appears as the suggestion to host the program. Most ground-floor retailers also declared themselves to be in favor of the plan (86% in favor and 14% against), the highest among street vendors (92% in favor and 7% against). By 2015, 50% of the street vendors that open Sundays interviewed by Sampapé and MinhaSampa were favorable to the program, 25% against and 25% indifferent. It is interesting to observe this data, since, in the test days of Paulista Aberta, 46% of them stated to

have perceived a positive impact to the movement of their business during the pilot, against 29% who observed an adverse effect and 25% indifferent.

The beneficial contributions found in the study overcome the few signs of adverse effects – which were not unanimous, being verified only for part of the beneficiaries interviewed. Therefore, it can be stated that the analyzes and data presented here show that the program was successful in achieving its initial objectives, positively impacting the urban vitality of Paulista Ave. in a general way.



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