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CIVITAS
Cleaner and better transport in cities

DESTINATIONS



Measure Evaluation Results

Introduction: Global Executive Summary and Common Indicators

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Executive Summary

Measures description

The Measure Evaluation Results (MER) sheet gathers information regarding the impact evaluation of all the measures implemented in Las Palmas de Gran Canaria within CIVITAS DESTINATIONS Project.

Concerning **economy**, there was one measure that had impact on economic indicators. This is measure LPA 4.1 (public e-bike system), as the new public bike sharing system brought operating revenues to the company. Concerning this measure, some of the actions related to the improvement of the bike sharing scheme App have been delayed to the COVID-19 crisis.

Concerning **energy and environment**, there were five measures which implementation had an impact on the reduction of CO2 emissions and an improvement of vehicle fuel efficiency due to savings on fuel consumption. These measures are: LPA 4.1 (public e-bike system) because it encouraged the use of bikes, LPA 4.2 (fast-charging EV) because it promoted the use of electric vehicles in the city instead of fossil-fuelled vehicles, LPA 5.1 (D4 Service: The Smart Distribution System) because the app aims to optimize the routes of freight vehicles and therefore reduce fuel consumption, LPA 5.2 (urban freight solutions into SUMP), that developed a sustainable urban logistics plan for the city and LPA 7.2 (hybrid buses in the urban bus fleet) because 3 diesel-fuelled buses of the urban bus fleet have been substituted by new hybrid buses.

Regarding impact in **transport** indicators, measures LPA 2.2 (SMART destination), LPA 4.1 and LPA 6.1 (Green credits scheme) contributed to a shift towards a more sustainable modal split in Las Palmas de Gran Canaria. The Green Credit Scheme system in LPA 6.1 was designed due to the Covid-19 crisis, its implementation has been delayed.

Other measures that had an impact on different transports indicators were: LPA 3.1, LPA 5.1, LPA 5.2 and LPA 7.3 (Real time mobility and tourism information services), that consisted on installing new real time information screens at bus stops.

Finally, some of the measures also had an impact on **society** indicators. For example, measure LPA 2.1 (SUMP observatory and participation), LPA 6.1 (loyalty system) and LPA 7.2 (hybrid buses in the urban bus fleet) contributed to an increase of citizen's satisfaction about the quality of the mobility system in Las Palmas de Gran Canaria. Within LPA 2.1, household mobility surveys had to be carried out by the Mobility Office in March 2020 in order to obtain an updated modal split. However, due to the Covid-19 crisis, the task was delayed until December 2020.

Moreover, there are other measures that had an impact on similar indicators, related to satisfaction level about the transportation system of the city. These are LPA 2.2, LPA 4.1, LPA 7.1 (communication for the introduction of the new Bus Rapid Transit system) and LPA 7.4 (integrated payment solutions for mobility and tourism). LPA 5.1 is also evaluated with one society indicator.

Impact indicators common to several measures

The evolution of the impact indicators presented in the table below were achieved thanks to the implementation of different measures in Las Palmas de Gran Canaria. The results reflect the measures implemented the CIVITAS DESTINATIONS Project but also other actions implemented by the city.

The documents Measure Evaluation Results (MER) present in detail the contribution of each measure in some indicators, but the table below shows the evolution of those indicators that are a result of the interaction between more than one measure and it was impossible to separate the impact of each one of them.

Expected impacts and indicators

Impact category	Impact indicator	Unit of measure
Society	1-Citizens' satisfaction about the quality of the mobility system	Likert scale, from 1 to 10
Transport	2-Average modal split by car (trips)	%
Transport	3-Average modal split by PT (trips)	%
Transport	4-Average modal split by active modes (trips)	%
Environment	5-Noise - People troubled by noise > 55dB	%
Environment	6-Noise - People troubled by noise (> 65dB)	%
Environment	7-Noise - People troubled by noise (> 75dB)	%

Table 1: Expected impacts and indicators

Method of measurement

Impact indicator	Method*	Frequency (Months)			Target Group	Domain (demonstration area or city)
		4	28	40		
Citizens' satisfaction about the quality of the mobility system	S	4	28	40	citizens	city
Average modal split (trips by car)	S	1	30	30/52	citizens	city
Noise	DC	1	30	30/52	citizens	city

* (Data collection (DC), Estimation (E), Survey (S))

Table 2: Method of measurement

Measure results

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante	Ex-Post
Society	1-Citizens' satisfaction about the quality of the mobility system	Likert scale, from 0 to 10	7,57	7,95	7,96
Transport	2-Average modal split by car (trips)	%	67	58	58 (2018) 52,3 (2020)
Transport	3-Average modal split by PT (trips)	%	13	21	21 (2018) 15,3 (2020)
Transport	4-Average modal split by active modes (trips)	%	16	19	19 (2018) 32,4 (2020)
Environment	5-Noise - People troubled by noise > 55dB	%	95	90	69
Environment	6-Noise - People troubled by noise (> 65dB)	%	37	32	13
Environment	7-Noise - People troubled by noise (> 75dB)	%	1	0	0,05

Table 3: Indicators results

C2.1 Society

1 - Citizens' satisfaction about the quality of the mobility system

For the **index of "satisfaction"** on the public transport system, the value used is the "customer satisfaction index" of the public bus system of Las Palmas de Gran Canaria. The baseline value is the index from 2016 and the Ex-Post one is from 2019. These kinds of index tend to have very small variations along a certain period of time (such as the CIVITAS DESTINATIONS project).

The measures of the CIVITAS DESTINATIONS project that have contributed to the improvement of this indicator are the following:

- LPA 2.1: SUMP observatory and participation.
- LPA 6.1: Green credits scheme and LPA 7.2: Hybrid buses in the urban bus fleet.
- LPA 7.2: Hybrid buses in the urban bus fleet.

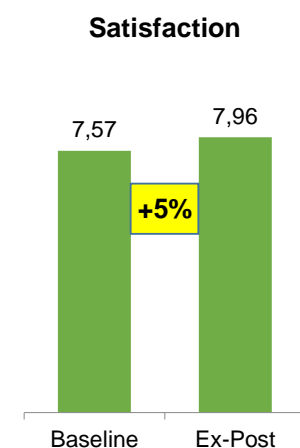


Figure 4: Satisfaction with the mobility system

C2.2 Transport

2, 3 e 4 - Average modal split

The **modal split** values have been obtained by the Mobility Office of Las Palmas de Gran Canaria through telephone surveys. The baseline value reflects the modal split of the city before the CIVITAS DESTINATION project started (2010). The Ex-Ante value is the estimation made by the SUMP of the city for 2018 (the SUMP was implemented in 2012). Finally, the two Ex-Post values (2018 and 2020) correspond to the modal split of the city obtained through telephone surveys (in February 2019 and in December 2020).

The measures of the CIVITAS DESTINATIONS project that have contributed to the achievement of a more sustainable modal split are the following:

- LPA 2.1: SUMP observatory and participation.
- LPA 2.2: SMART destination.
- LPA 4.1: Public e-bike system.
- LPA 6.1: Green credits scheme.

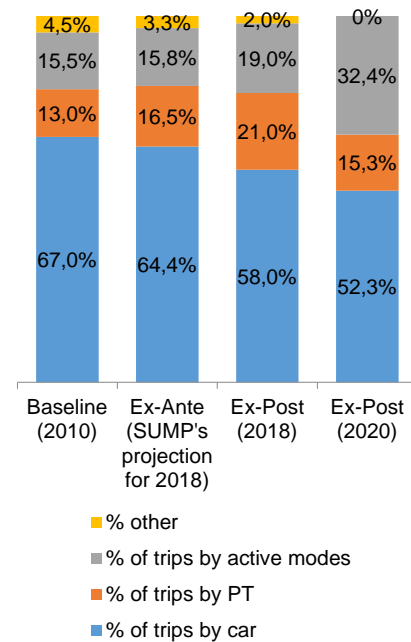


Figure 2: Average modal split, before and after

C2.3 Environment

Finally, the **noise** impact indicator was measured by the percentage of people (inhabitants of Las Palmas de Gran Canaria) that are troubled by noise (noise higher than 55dB, 65dB and 75dB). The values for the baseline dates from 2007 and in the updated version of the “map of noise” of the city it can be observed that the percentage of people troubled by > 55dB has decreased from 95% to 69%, the percentage of people troubled by > 65dB has decreased from 37% to 13% and the percentage of people troubled by > 75dB, decreased from 1% to 0,05%.

The measures of the CIVITAS DESTINATIONS project that have contributed to a reduction of noise pollution in the city of Las Palmas de Gran Canaria are the following:

- LPA 4.2: Fast charging EV.
- LPA 5.2: Urban Freight Solutions into SUMP.
- LPA 7.2: Hybrid buses in the urban bus fleet.

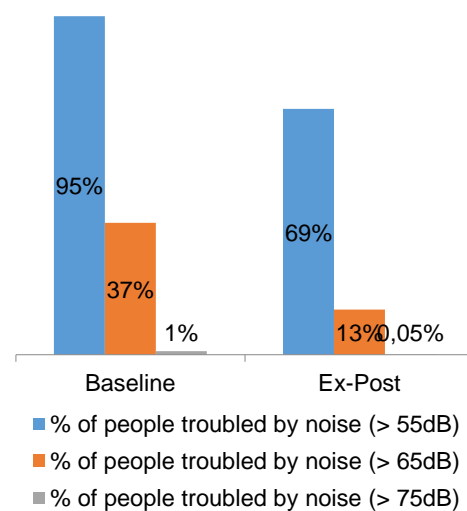


Figure 3: People troubled by noise

Moreover, the measures implemented during the CIVITAS DESTINATIONS project’s lifetime had also an impact on other indicators. For example, many of them contributed to a reduction of the **CO₂ emissions** and fuel consumption, to a greater or lesser extent, as shown in the table below.

Measure	Impact indicator	Unit of measure	Baseline	Ex-post
LPA 4.1 - Public e-bike system	Environment – CO2 emissions saved	CO2 toe	-	329
	Energy – Vehicle fuel efficiency (Litres of gasoline avoided)	Litres	-	184.230
LPA 4.2 a - Fast charging EV	Environment – CO2 emissions avoided	CO2 toe	-	66,65
	Energy – Vehicle fuel efficiency (litres of diesel saved)	Litres	-	50.121
LPA 4.2 b – Electric vans	Environment – CO2 emissions emitted	CO2 toe	47,60	23,55
	Energy – Vehicle fuel efficiency (Litres of diesel consumed)	Litres	18,22	0
LPA 7.2 - Hybrid buses in the urban bus fleet	Environment – CO2 emissions emitted	CO2 toe	111,50	86,60
	Energy – Vehicle fuel efficiency (Litres of diesel consumed)	Litres	383.849	30.176

Table 5: CO2 emissions and Vehicle fuel efficiency results

Key insights on the implementation process

Concerning the process evaluation, the implementation of the CIVITAS DESTINATIONS' measures in Las Palmas de Gran Canaria has had some barriers and drivers that have been common in some of them.

On the one hand, one of the main drivers of the measures, that has been identified was the involvement of all key stakeholders since the very early stages of the measure development. In many cases, this has facilitated the implementation of the measure and has allowed better results, as everybody's needs were taken into account.

On the other hand, there were some barriers that were repeated in different measures. One of them is the fact that technicians and workers involved in the measure sometimes didn't have previous experience with some of the actions that wanted to be implemented. For example, concerning the measure consisting on implementing urban freight solutions into the SUMP, there was no one in charge of urban freight distribution in the Municipality and concerning the substitution of diesel-fuelled buses from the urban bus company by hybrid buses, the company's maintenance and repair staff from had no experience with hybrid buses). Another common barrier was administrative procedures.