# Are we spending more on transportation lately? Yes, but are we moving more?

## Introduction

Kickscooters, carsharing, electric vehicles, and ridesharing: mobility has been one of the fastest-growing sectors in recent years. This trend will continue to be true in the following years, with the increasing trend of companies offering mobility as a service products solution, robotaxis testing in USA and China and electric air taxis becoming closer to reality.

With all the possibilities offered by these new (and not so new) ways of moving around, I cannot help but wonder, are these trends allowing us to spend less? Are we taking advantage of these new sources to decrease our transportation spending?

*To answer this question, it would be useful to create a segmentation based on car ownership. On the one hand those families that own and use a car would have reduced their transportation spendings due to new mobility trends if their dependence on private car diminishes and their usage of active or share mobility increased. On the other hand, families that do not own or use a car should have a increasing trend over the years and their. They could also rely on shared mobility means but their total transportation cost should lower over the years.*

Familias sin carro- Sin gasto en compra, gasolina, ITV.

Are these trends allowing us to spend less- Esto sería verdad si disminuyera nuestro costo en fuel, aumentara el costo en ellos y el TOTAL sería menos que antes.

Familias con gasto en compra de motos y cosas, pero no tienen fuel. Porque esas tienen moto.

Familias con carro- Gasto en compra, gasto en ITV, gasto en gasolina.

Are these trends allowing us to spend less- Esto sería verdad si disminuyera nuestro costo en fuel, aumentara el costo en ellos y el TOTAL sería menos que antes.

1. Ver familias que gastan fuel – ver su gasto en fuel y en otros medios de transporte
2. Ver si a lo largo de los años ha cambiado el gasto
3. Ver la suma total

Household expenditures are experiencing substantial increases during the last few years[[1]](#footnote-1). In some countries transportation spending is commonly the second largest after housing expenditures (usa sources). This means we should try to move as efficiently as possible as this would help us save some cash. Research says that Mobility services have helped decrease car-ownership dependence (which is the most expensive way of terrestrial transportation), but is this reflected in our annual spending? (*si no hay citas decir Mobility services should aim to a decrease in car-ownership dependence)*

I started using every new ride hailing company around (Uber, Cabify, Bolt, Lyft, etc.) because the rides were sometimes cheaper than traditional taxis but if they did not exist most likely I would have used public transportation instead. This is true for me, but for some people these services replaced a private car trip. Moreover, some people use kickscooters to places they used to walk before others use them for trips, they would have done using a motorbike. I have gone to Barcelona using carpooling but these trips have replaced a very cheap (and long) bus ride or an expensive high velocity train. Being all these statements anecdotal evidence I decided to use data and answer these questions for Spain the country I currently live in.

I used the household budget survey (HSB) carried out by Spain’s National statistics institute (INE) to explore terrestrial transportation expenditures. The main objective of the survey is to estimate the annual consumption expenditure of Spanish families within a natural year. This survey is carried out annually with a sample size of approximately 24,00 households.

After examining the survey, the doubts I had about where exposed as follows:

1. \_Are we spending less on transportation lately?\_
2. Are we spending more on private cars (purchase and use)?\_

\*\* Have there been significant changes in private car ownership and usage in the last five years?\*\*

* 1. Exploration of private car purchases.
  2. Exploration of traditional fuel and alternative fuels spendings.
  3. Driving licenses and private vehicle circulatory tax spendings.
  4. Has the share on incompe spent on owning and runing motor vehicles changed over the years?

1. \_Are Personal Mobility Vehicles purchases (kickscooters, bikes, etc.) on a rise?\_
   1. Exploration of personal mobility vehicles purchases
2. \_Are combined public transportation tickets and shared options on the rise?\_
   1. Exploration of public transportation individual and combined tickets
   2. Exploratin of shared mobility options expenditures
3. What variables correlate well with car-oriented mobility?
4. Are new mobility trends allowing us to spend less?

RESULTADOS: https://scientific-publishing.webshop.elsevier.com/manuscript-preparation/how-to-write-the-results-section-of-a-research-paper/

1. *\_Are we spending less on transportation lately?\_*

A graph of blue bars

Description automatically generated with medium confidence

This graph shows the percentages formed by transportation spendings in comparison to total spendings over the last 5 years. In 2018 7.6 % of all spendings were dedicated to transportation. This percentage decreased in 2019 to 7.49 and dropped during 2020 to 5.46%. In 2021 this amount rose to 6.23% and the following year had a 1% increase, reaching almost the same percentage of 2018.

Looking at absolute values shows a simmilar story after COVID-19. Absolute spending rose from almost 53 billion in 2018 to 55.7 billion in 2019. Just like before that value dropped in 2020 to almost 39 billion. After covid the total spent in 2021 and kept that trend in 2022 with a total spending of almost 55 billion.

2. *\_Are we spending more on cars?\_*

2.1 Exploration of private car purchases.

This question was answered comparing the sample’s car purchases statistically and the total population purchases visually.

The H test was employed to compare the sample from different years due to the fact that the populations were not normal, and they were 5 groups. Since the test p values were less than 0.005 the null hypothesis that the samples belonged to the same population were rejected.

A graph of green bars

Description automatically generated with medium confidence

The first plot showed how much the Spaniard populations spent on car purchases from 2018 to 2020. Like overall transportation showed earlier this graph shows increasing tendencies both prior and after COVID-19.

2.2 Exploration of traditional fuel and alternative fuels spendings.

A graph of a number of bars

Description automatically generated with medium confidence

> This plot shows the same trends seen before rising trend before and after COVID-19 but different in magnitudes. In this case the total spent in fuel in 2018 and 2019 were quite similar.

RECUERDA QUE SI TENGO LA POPULATION NO HAY QUE HACER TEST. SE HACE TEST EN EL SAMPLE.

REFERENCIAS

<https://www.sciencedirect.com/science/article/pii/S2214367X19301413?via%3Dihub>

<https://www.sciencedirect.com/science/article/pii/S030626190900138X>

<https://www.sciencedirect.com/science/article/pii/S0966692315001830>

<https://www.sciencedirect.com/science/article/pii/S0966692306000329>

Maps to check mobility as a service solutions: micromobility and shared mobility

* Incrustar estos mapas-

<https://www.numo.global/new-mobility-atlas#5.19/39.649/-3.565>

https://maphub.net/Augustin/micro

1. <https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure/articles/impactofincreasedcostoflivingonadultsacrossgreatbritain/junetoseptember2022>

   SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey, available at https://www.bls.gov/cex [↑](#footnote-ref-1)