

BEHAVIORAL SCIENCE FOR TRANSPORTATION BEHAVIOR IN KOSOVO

Shifting Transportation Behavior in Prishtinë/Priština, Kosovo

Summary

We used behavioral science to shift commuting behavior away from car usage and toward alternative modes of transportation, with the ultimate goal of reducing air pollution in Prishtinë/Priština, Kosovo. Using a behavioral approach, we identified key factors that influence transportation behavior, and designed a pilot intervention, which we implemented and tested with municipal employees using a randomized controlled trial (RCT). In addition to providing a free monthly bus pass, the intervention leveraged several well-researched behavioral principles such as reframing costs, social norm messaging, and planning prompts. We find that the pilot intervention was successful in significantly reducing car usage, improving the subjective commute experience, and shifting norms around public transportation. We hope the insights from this project will be implemented alongside necessary structural changes to promote sustainable transportation behaviors that benefit individuals, society, and the environment at large.

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Introduction

In 2022, ideas42 and UNDP Kosovo teamed up on a project to use behavioral science to change transportation behavior in Prishtinë/Priština, with the goal of reducing air pollution in the city. To tackle this complex issue, we employed a behavioral science approach to design solutions aimed at reducing car usage and evaluated their impact through a pilot. In November 2022, we carried out the pilot in collaboration with the Municipality of Prishtinë/Priština to assess the impact of our intervention on Municipality employees. This report presents our findings and insights and provides recommendations for decision-makers and municipal stakeholders to consider.

Project Background

Air pollution has serious consequences for climate change, quality of life, and human health, causing a variety of respiratory and pulmonary diseases through exposure to fine particulate matter. Kosovo¹ and its capital, Prishtinë/Priština, frequently experience poor air quality. In 2017, a study by the US Environmental Protection Agency found that air quality in Prishtinë/Priština was rated “unhealthy” 50% of the time². In 2018, the Air Quality Index in Prishtinë/Priština reached a hazardous level of 400- posing a serious threat to the health of residents and forcing them to stay indoors.³ In Kosovo, air pollution is responsible for 760 premature deaths per year, with 11% occurring in Prishtinë/Priština.⁴

Although coal power plants on the outskirts of the city and household combustion for heating are major sources of air pollution in Prishtinë/Priština, road transport also plays an important role⁵, while also putting pressure on the city’s road infrastructure. The number of vehicles has been rapidly increasing (8.5% per year, for the past 6 years⁶), and the majority of cars do not meet current euro emission standards. A significant contributor to this trend is private car transportation, with private cars and taxis being the main mode of transportation in Prishtinë/Priština (44%).⁷ This is not surprising given that conditions for walking are not ideal and public transportation is not well-developed in Prishtinë/Priština. For example, especially during the winter, there is poor air quality and smog which can pose health risks to pedestrians. Furthermore, the city lacks the infrastructure to support pedestrian and bicycle travel for all, which can make it difficult, inconvenient, unpleasant, or even hazardous for individuals to use

¹ References to Kosovo shall be understood to be in the context of United Nations Security Council resolution 1244 (1999).

² Tchounikine, M. (2019). *Air Quality in Kosovo: Towards European Standards*. Institute for Development Policy (INDEP).

https://indep.info/wp-content/uploads/2019/08/INDEP_June-2019_Air-Quality-in-Kosovo.pdf

³ Bytyci, F. (2018, January 31). Kosovo’s pollution draws protesters as city bans cars from town center. *U.S.*

<https://www.reuters.com/article/us-kosovo-pollution-protests-idUKKBN1FK1ZW>

⁴ Pristina air quality index (AQI) and Kosovo air pollution. (n.d.). IQAir | First in Air Quality.

<https://www.iqair.com/kosovo/pristina>

⁵ In 2018, road transport accounted for 10% of the total emissions in Kosovo according to Kosovo: A Future of Green Transport and Clean Air, World Bank Report

⁶ As of 2018

⁷ Humolli, F. (2020, March 1). *The Typology of Travels in Pristina in Relation to Purpose, Time and Distance*.

<https://sciendo.com/article/10.2478/quageo-2020-0006>

these modes of transportation to get around. Moreover, public transportation is limited and it can be unreliable and circuitous.

Such structural barriers are significant and must be addressed. However, research and experience from other cities suggest that social and psychological factors also influence commuting behavior. Following an extensive literature review, administrative data analysis, and a workshop with stakeholders, we employed behavioral science to address the following issue: **individuals in or near Prishtinë/Priština's city center are using cars to travel during peak hours. We want to support them in using alternative modes of transportation to travel during peak hours.**

We decided to focus on Prishtinë/Priština's city center as it is the business hub of the city and it has better access to public transportation. Peak traffic congestion typically happens 7 - 9 am, 12 - 1 pm, and 4 - 6 pm, corresponding to work commute and lunch hour.

Behavioral Barriers to Using Alternative Modes of Transportation

After identifying the behavioral problem, we sought to uncover the potential behavioral barriers that might impede individuals from taking alternative modes of travel, especially during peak hours. This process is known as "diagnosis". Behavioral barriers are created by the interaction of contextual features (e.g. the environment) and psychological phenomena (what's going on in our brains), which can hinder people from making decisions or following through on them, even when it would be in their best interest.

To identify the decision and action barriers that may prevent individuals in Prishtinë/Priština from engaging in sustainable travel, we first examined existing behavioral literature. However, we recognized that these barriers may not be relevant in all contexts, so we also conducted a thorough review of documents about Prishtinë/Priština's transportation context. We then developed over 100 initial hypotheses through a process called behavioral mapping. We then conducted in-depth interviews with Prishtinë/Priština residents, including both drivers and non-drivers, and gathered feedback from municipal stakeholders and experts to refine and prioritize our hypotheses. Through this process, we identified five key barriers that may prevent individuals in Prishtinë/Priština from driving less and using alternative forms of transportation during peak hours.

Barrier #1. "What other alternatives?"

"The conditions do not matter. I always take the car regardless...I have not considered it [the bus] because it will take me much more time."

- Prishtinë/Priština driver

For many residents, commuting by car is a strong habit. They may not even consider alternative modes of transportation because these require more effort and may involve navigating

unfamiliar hassles. Routine drivers may never be prompted to consider alternatives to driving, and the idea of using them may not even occur to them. Thus, **car owners automatically default to driving everywhere, even when walking or taking the bus would be objectively better (e.g. faster, cheaper, more convenient.)**

A habit is an automatic and rigid pattern of behavior in specific situations, which is usually acquired through repetition.

Barrier #2. “I would if I could...”

“...as long as you don’t have a bus that is with air conditioning, that has space, that comes on time, I wouldn’t change.”

- Prishtinë/Priština driver

In Prishtinë/Priština, using the bus or walking as alternative modes of transportation may not always be a feasible option due to various factors such as unreliable and unpredictable bus schedules, poorly-identified or distant bus stations, missing sidewalks, and concerns about safety in certain areas. Drivers may easily encounter or hear of such issues which combined with availability bias may lead them to believe that taking the bus or walking are not easy or comfortable commuting alternatives. Even after infrastructure issues are addressed or in areas where taking the bus or walking would be convenient and easy, people may **overgeneralize the prevalence of issues and see these as unfeasible alternatives.**

Availability bias describes our tendency to rely on what comes most easily to mind when making a decision or evaluation, which can lead us to overgeneralize our impressions.

Barrier # 3. “Maybe...but in the moment, the car wins.”

“[I use] a personal car, just because of convenience. If I will be stuck in traffic I’d rather be stuck in my own car, me being the driver and being able to take different paths if I want.”

- Prishtinë/Priština driver

Commuting by car has a number of personal, immediate benefits, such as flexibility, protection from the weather, privacy, ability to carry items. On the other hand, many of the costs of driving, such as paying for gas or maintenance are not experienced at or around the time of the decision to drive. Additionally, the societal and environmental costs of driving such as pollution are vague and distant and may not be clearly connected to an individual’s actions. People tend to be present biased. As a result, even when they may have the intention to drive less, **drivers focus on the immediate benefits of commuting by car, ignoring or underestimating the costs.**

Present bias describes our tendency to place undue weight on current costs and benefits when compared to future costs and benefits

Barrier # 4. “Of course, driving is bad, but my situation is special...”

“It is about the environment, but it’s about my own things that I need myself. I cannot be living in a high cost for the sake of environment when there are no good conditions.”

- Prishtinë/Priština driver

While there may be valid circumstances where individuals objectively need to coordinate with family members for transportation or look fresh at their job, these needs are likely exaggerated by motivated reasoning, the tendency to rationalize one’s behavior. Despite individuals recognizing and acknowledging the negative consequences of driving, **they may still feel that their own needs and situation justify their car use.**

Motivated reasoning describes how people construct and evaluate arguments in a biased fashion to arrive at a preferred conclusion.

Barrier # 5. “Everyone (who can) does it!”

“[...] there are also people who view [bus riders] as stingy...where I work it seems that all the employees come with cars at work.”

- Prishtinë/Priština driver

Traffic congestion and the scarcity of parking spots are salient issues for all Prishtinë/Priština residents, leading many people to believe that driving to work is the norm, possibly even more common than it is in reality. Moreover, owning a car and driving to work are visible behaviors often associated with wealth and success. In contrast, individuals can frequently observe youth and older people waiting at bus stops. **Driving is perceived as a socially acceptable behavior and the social norm for those who can afford it.**

Descriptive social norms are the behaviors that people believe are typical or prevalent within a particular group or society.

Behavioral Solutions to Increase the Use of Alternative Modes of Transportation

To address the behavioral barriers identified and encourage the use of alternative modes of transportation we leveraged several well-researched behavioral principles to design an intervention.

- **Reframing cost-benefits:** Highlighting the immediate and long-term costs of commuting by car can prompt considering alternative modes of transport. Our designs:
 - Leveraged various communication channels (i.e., emails and online planning form) to expose and emphasize the monetary and non-monetary costs of driving, such as money spent on fuel or parking, and time spent stuck in traffic.
 - Increased the opportunity cost of driving by providing a free bus pass (i.e., making the alternatives less costly)

- **Removing hassles:** Hassles can discourage individuals from taking action. Simplifying processes and providing clear information and resources can enable taking action and improve user experience. Our designs:
 - Removed all hassles and barriers to obtaining a monthly public bus pass by providing them free of charge, removing the need to provide a photo of the individual, and delivering them straight to the individual's department at work.
 - Offered information about bus routes and schedules so that people could easily understand and plan to use the bus.

- **Prompting planning and soft commitments:** Prompting individuals to plan their commute offers an opportunity to consider alternatives and to think ahead, which is especially relevant when attempting to break an existing habit. Soft commitments, despite not having any objective consequences for the individuals, create a sense of obligation towards oneself.
 - Ask participants to plan their commute consisting of the days and modes of travel they would like to choose for car-free travel.
 - Encourage personal soft commitments to help them stick to their plan.

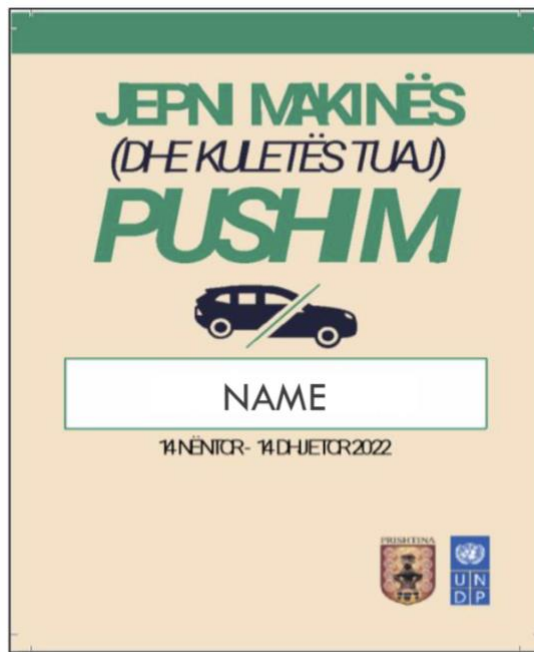
- **Promoting positive social norms:** Social norms are unwritten rules that guide behavior within a group or society. These norms can vary between different groups and are influenced by factors such as culture and environment. Positive social norms promote behaviors that are beneficial to individuals and society as socially desirable. Relatable figures can be effective at popularizing social norms. In our designs, we used email communication, a planning form, and various physical materials to:
 - Highlight the prevalence of car-free commutes among peers
 - Spotlight the social and environmental benefits of a car-free commute.

To encourage participants to use alternative modes of transportation, we created a campaign titled "Give your car (and wallet) a break" that incorporated several designs based on the behavioral principles described above. Specifically, the pilot intervention involved the following components:

1. FREE BUS PASS

We provided participants with a free 30-day bus pass for public buses, personalized with their name and the campaign logo. The passes could be easily collected from the workplace, rather than having to be purchased in person and individuals did not have to submit photos, thus removing hassles that currently plague the process of acquiring a pass in Prishtinë/Priština. The passes also aimed to increase the opportunity cost of driving, by decreasing the cost of using the bus. Behavioral science suggests that making the passes free may play a particularly important role as humans are disproportionately more likely to be influenced by “free” than by a very low price. Figure 1 below shows the bus pass design.

Figure 1 - Design of free bus pass for treatment group



2. BUS INFORMATION AND DESK CALENDAR

As part of the “Give your car (and wallet) a break” campaign, participants also received a trifold calendar for the months of November and December. The calendar was meant to visibly remind them of their participation in the challenge and to create an observable shared social norm (participation in the challenge) among colleagues. The calendar design also included the schedule for the free municipality bus line, along with a QR code linked to the public bus schedule meant to provide easy access to useful information. The opportunity cost of driving, including time/money savings and stress avoidance, were emphasized to highlight the benefits of not driving. Furthermore, the title “Let’s make Prishtina a healthier, more sustainable city!” served as a civic appeal. Additionally, the calendar provided space for employees to mark each day in November and December 2022 when they traveled car-free. See Figure 2 for the trifold calendar design (English version).

To make it easy for any first-time bus riders or individuals to navigate the public bus system, we also provided a printout of the public bus map (Figure 3).

Figure 2 - Desk calendar trifold

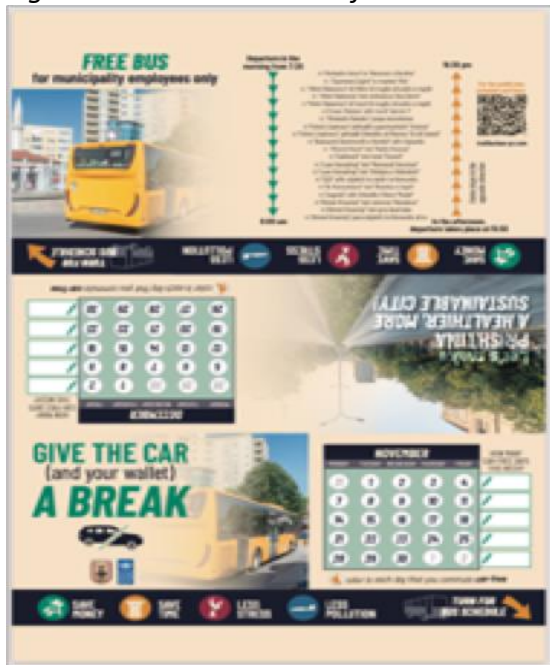


Figure 3 - Map for public bus lines



3. PLANNING PROMPT FORM

Participants were invited to fill out a planning prompt form to encourage them to move away from the default of driving. The planning prompts encouraged them to create a concrete commute plan for the following week aimed at creating a moment of choice to consider alternatives and a sense of commitment. The planning form started by vividly listing various costs of driving, including the monetary ones (as shown in Figure 4). It also asked individuals what days they would try ‘giving their car a break’ in the following week, what modes of travel they would use, and what was their motivation. Those who filled out the planning form received an automated email the following week, reminding them of their personal travel plan to commute car-free.

Figure 4 - Planning prompt form example pages (Opening, estimation of weekly spending, selection of alternative modes, 'personalized plan' text)

**Join your colleagues at the municipality:
Give the car (and your wallet) a break!**

Driving has many different costs!

- **Wasted money** - Even a short daily commute by car or taxi can add up to more than **€1,000 per year**. Think about what you could use that money for instead!
- **Wasted time** - Driving in Pristina during peak hours can take up to **double the time** compared to walking, or taking public transportation. Think about how else you could spend that time instead!
- **Stress** - Studies have shown that driving is the **most stressful** mode of transportation. Imagine a calmer journey to and from work!
- **Pollution** - Engine **emissions during heavy traffic** contribute to the poor air quality we all experience. Imagine if Pristina was a more liveable and clean European city for us all!

Click the arrow to plan your travel to and from work next week!

← →

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Thanks for sharing, Cecilial

There are lots of great ways to get to work besides riding a car, such as biking, taking the bus, or walking!

In fact, based on your estimated weekly spending, your car commute could be costing you **€520 per year!**

Now, let's plan a way to travel to and from work that will save you money, stress, and time.
Your city and wallet will thank you!

← →

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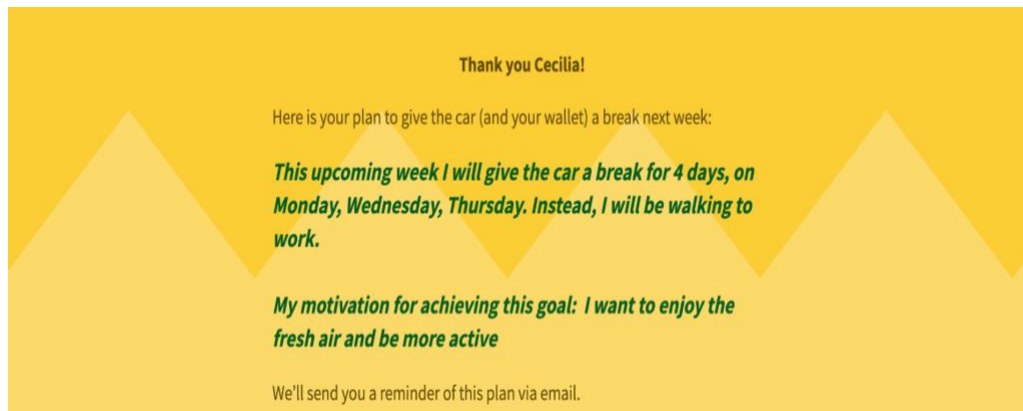
How will you get to work instead of the car/taxi?*

(You may select multiple)

<input type="checkbox"/> Biking (or e-biking) - get more activity in your day 	<input type="checkbox"/> Taking the bus - browse the internet, listen to music or talk to colleagues 	<input type="checkbox"/> Walking - get more exercise in your day
<input type="checkbox"/> Carpooling - become better friends with your colleagues 	<input type="checkbox"/> Using a motorcycle / scooter - get around quickly and conveniently 	<input type="checkbox"/> Other

← →

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4. OTHER ENGAGEMENT-BOOSTING FEATURES

To incentivize engagement in the challenge, we sent reminder emails throughout the duration of the pilot. In addition, those who filled out the planning forms were entered into a raffle to win a campaign-branded water bottle, which would serve as a tangible reminder of their participation.

The Pilot

PARTNERING WITH THE MUNICIPALITY

The goal of this project was to test and evaluate our behavioral designs over a limited period of time to make recommendations for scaling up. To achieve this, we partnered with the Municipality of Pristina to conduct a pilot test of the "Give your car (and wallet) a break!" campaign with the municipality's employees.

Along with being supportive of the project goals, the Municipality served as a great partner due to several factors, including

- ★ **Coordinated, central communications from the Office of the Mayor**, which allowed sending data collection surveys to all municipality employees and the behavioral communications and planning prompt to intervention participants from a trusted, familiar source.
- ★ **Authority and existing connections with Urban Traffic**, which made it possible to procure the free public bus passes.
- ★ **Culture of public service and engagement**, which we leaned into for the behavioral messaging around helping the city and joining colleagues.
- ★ **Central location in the city**, which meant that commuting via alternative modes of transportation (e.g., bus, walking, biking, etc.) was likely feasible for most employees. However, the New Building (in Arberia), was not located as centrally as the Main Building, which may have made it more difficult for those employees to commute via public transportation.

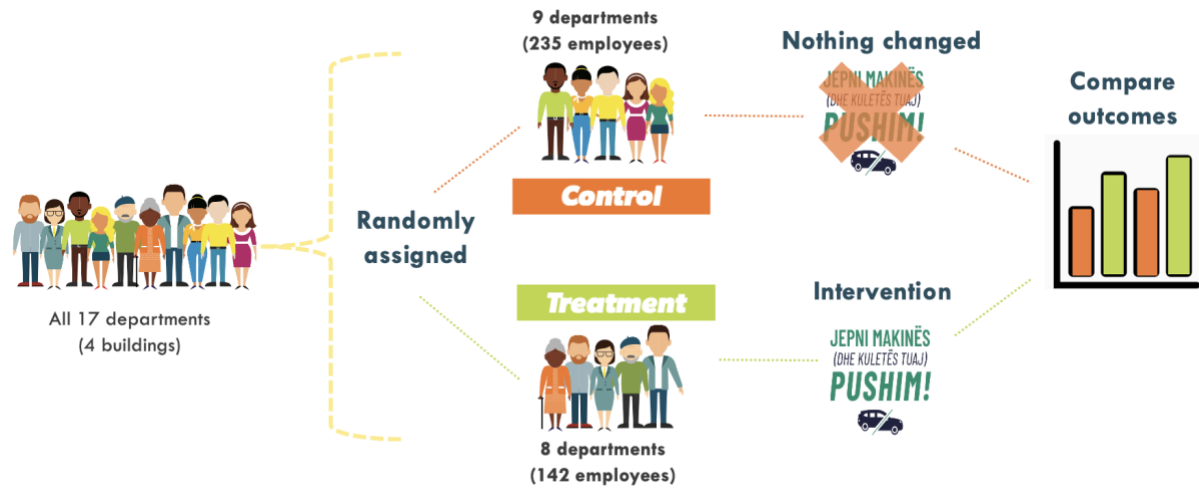
- ★ **Existing free bus service**, which we leveraged and promoted as a costless alternative mode of transportation that was uniquely for municipal employees.
- ★ **Departments that were relatively independent and spread across several floors and building locations**, which made it easier to segment and deliver the intervention.

PILOT TEST DESIGN

To determine if an intervention had the desired impact, it is crucial to test and evaluate it, ideally using both quantitative and qualitative methods. Randomized controlled trials (RCTs) are the ‘gold standard’ for quantitative evaluation. RCTs allow researchers to isolate the impact of the intervention, by creating ‘control’ and ‘treatment’ groups that are identical except for the application of the intervention. Because of this, differences post-intervention can be attributed to the intervention itself, independent of all other potentially confounding factors.

For this project, we randomized (i.e., randomly assigned to either “treatment” or “control”) at the department level, ensuring that the groups were comparable.⁸ The selection process also had to limit the treatment group to fewer than 150 individuals since that was the maximum number of free bus passes we could procure. Those selected to be in the ‘treatment’ group received all the materials for the “Give your car (and wallet) a break!” campaign as described above, while those in the ‘control’ group did not receive anything (i.e., business as usual). Please see Figure 5 below for a visual representation of the test setup.

Figure 5 - Pilot test design



Since we were unable to collect data on employees’ actual commuting behavior, we relied on self-reported data from surveys sent to all municipal employees at the beginning and end of the pilot. The endline survey included questions about commuting behavior, as well as attitudes,

⁸ Randomization was done by first separating Main Building and New Building, and pairing departments within each by number of employees (e.g., Two largest departments in the new building). Next, from each pair, one department was randomly assigned to receive the pilot intervention. Finally, we checked to ensure that the two groups were balanced (and therefore comparable) in terms of their baseline survey responses.

awareness, feelings, and intentions related to transportation. It also included open-ended questions to allow employees to provide qualitative feedback about the pilot and transportation options more broadly. The survey data helped us understand the impact of the intervention on employees' commuting behaviors and attitudes. (Please see the Appendix for Endline survey questions and Baseline survey questions and summary stats.)

LIMITATIONS / CHALLENGES

Testing Limitations

The study's ability to detect statistically significant differences was limited by the small sample size. It's also possible that the intervention had some effect on people in the control group, even though they were not directly part of the study (this is known as the spillover effect).

In addition, because we were unable to directly observe transportation behavior, we relied on self-reporting about behaviors, which may be impacted by a host of biases. For example, when answering surveys, individuals often display social desirability bias⁹ and the Hawthorne effect¹⁰. When reporting on intentions for the future, it is likely that planning fallacy¹¹ and temporal discounting¹² can be at play. Last, although the survey was sent to all employees, the respondents may not be a true representation of all employees (e.g. employees who are on average perhaps more engaged or interested in sustainability than the average employees might be more likely to respond).

Implementation Challenges

The pilot faced challenges due to the broader context in which it was implemented, particularly because it took place during the winter when the weather was cold and rainy and there was high air pollution. To avoid exposure to air pollution, people were advised to stay indoors, but this may have led to even more cars on the road and further exacerbated the air pollution problem. Given the unfavorable conditions for promoting walking, the focus of the intervention was on promoting the use of buses, and walking was represented by images of people wearing a mask.

There were also technical and logistical hurdles that arose during the study. These included procuring administrative data, personalizing communications, and distributing the physical materials. For example, the internal data on employees was incomplete and outdated, and coordinating across various supporting staff introduced unanticipated delays and complications.

⁹ Social desirability bias refers to the tendency of people to present themselves in a more positive light in an attempt to be seen as socially desirable or acceptable.

¹⁰ Hawthorne effect is a phenomenon of people altering their behavior due to the awareness of being observed.

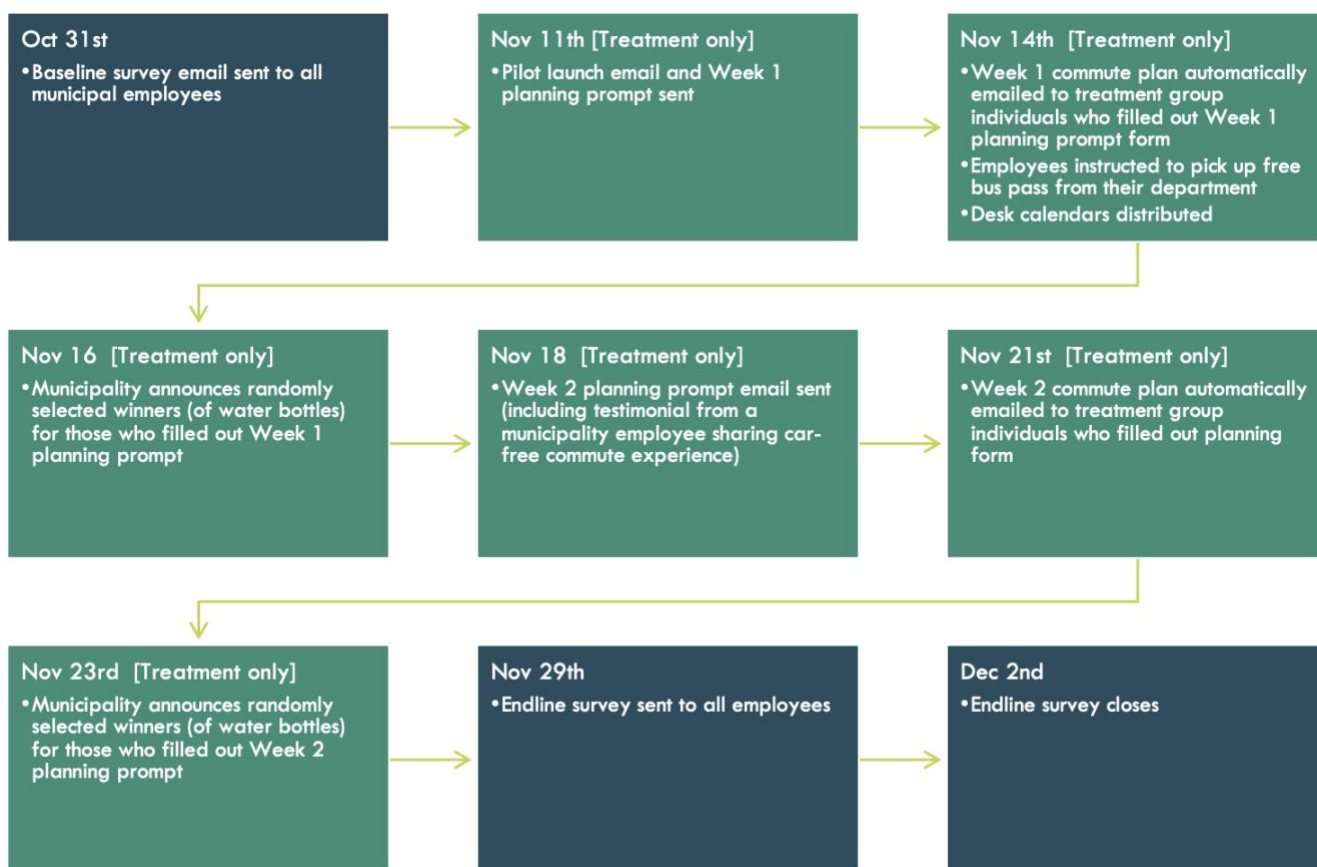
¹¹ Planning fallacy refers to the tendency of people to underestimate the time and resources to complete a task or project even when they have prior experience with similar tasks or projects.

¹² Temporal discounting refers to the tendency to prefer immediate rewards over rewards in the future.

PILOT IMPLEMENTATION

Intervention emails were sent by a municipality employee and approved by the Deputy Mayor. The municipality, with support from the UNDP, also handed out engagement incentives (i.e., branded water bottles and gift cards to a local bookstore randomly awarded to employees who filled out the surveys and planning prompts). Finally, the UNDP coordinated with Department representatives in the municipality to distribute the free bus passes to those in the treatment group. Figure 6 below depicts the timeline and sequence of the pilot activities.

Figure 6 - Timeline of pilot activities



Results

BASELINE SURVEY RESULTS

One week prior to the implementation of the pilot, we invited all 377 municipal employees to fill out a baseline survey for a chance to win a 50 Euro gift card to a local bookstore. The purpose of the baseline survey was to ensure that the randomization was balanced and to inform the design of certain elements of the pilot (e.g., the proportion of colleagues who were

walking or using the bus already). The survey was open for one week and received 159 unique responses resulting in a 42% response rate.

From the baseline survey, we found that among municipal employees who responded:

- 92% own a car
- 61% routinely (i.e., more than once a week) use a car to go to work or for other reasons
- 80% live with children
- 60% want to drive or take a taxi less than they currently do
- 66% live within 5km of their office location

A full summary results for the baseline survey can be found in the Appendix.

The findings confirm that there is a gap between intention and action: a majority of employees expressed a desire to drive or take a taxi less frequently than they currently do and live within a reasonable distance to their office (i.e., within a distance that can be traveled by bus, bike, or on foot), but 60% of these individuals still regularly use a car.

ENDLINE RESULTS: INTERVENTION IMPACT

At the conclusion of the pilot program, we conducted an endline survey to gather data on the treatment and control groups. The survey was sent to all 377 employees and was open from November 29th to December 2nd. To increase participation, we sent reminder emails and offered incentives in the form of gift cards to a local bookstore for completing the survey.

While free bus passes were provided to all employees in the treatment group, they were required to collect them from a department representative, and some may have chosen not to do. According to the endline survey data, 79% of those who responded to the question reported collecting their bus pass. In addition, 58% of those who did not already have a bus pass at the start of the pilot reported using it several times a week or daily.

Descriptive statistics

The endline survey had a response rate of 55%, with 207 unique responses received. The response rate was slightly higher for the treatment group (59%) compared to the control group (52%). It is worth noting that the response rate was significantly higher in the Main building (70%, 175 out of 250 employees) compared to the New Arberia building (23%, 15 out of 66 employees). We do not know what factors could account for this difference in survey engagement, however it is worth noting that the New Arberia building is more distant from the city center and public transportation, and its lower representation in the survey may have impacted the results.

The demographics of the endline survey respondents are shown in Figure 7, separated by treatment and control group. It is worth noting that a higher percentage of treatment group respondents were women (68% vs. 44% in the control group) and control group respondents were more likely to report routinely driving in the past year (50% in the treatment group vs.

68% in the control group). These differences were not statistically significant based on the baseline survey data. However, to account for this imbalance, we controlled for gender and routine driving in the results reported in the following section.

Figure 7 - Endline balance table

	Control	Treatment	Difference
Female	44.8%	68.2%	23.4%***
Age	43.7	44.4	0.7
Live with children	78.9%	86.4%	7.4%
Routinely drive in the past year	67.5%	50%	-17.5%**
Average trip duration 30 minutes or less	71.1%	67.5%	-3.5%
Observations	123	84	207

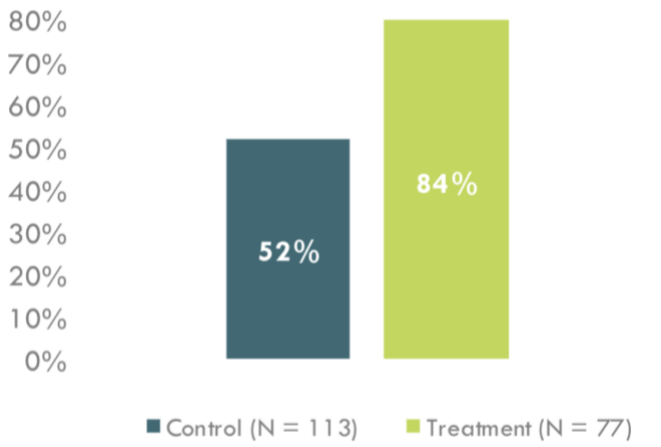
INTERVENTION RESULTS

To evaluate the impact of the intervention on the outcomes of interest, we employed a linear regression model that controlled for gender and whether the individual was a routine driver in order to account for imbalances found in the endline survey. The following are the key results of the pilot study.

1. The intervention decreased the prevalence and frequency of commuting by car

Employees in the treatment group reduced their reported car usage compared to the control group. Holding other things constant, the treatment decreased the frequency of an employee commuting by car (i.e. driving a personal car or taking a taxi to work), on average, by 1.02 days a week ($p < 0.01$). These proportions are shown in Figure 8 below. A higher proportion of employees in the treatment group reported driving “a little” or “much less” than usual, an increase of 59% compared to the control group ($p < 0.01$). Both the reduction in the frequency of commuting by car and the decrease in car use compared to the usual were statistically significant, and this was true even for groups such as routine drivers or people who live with their children.

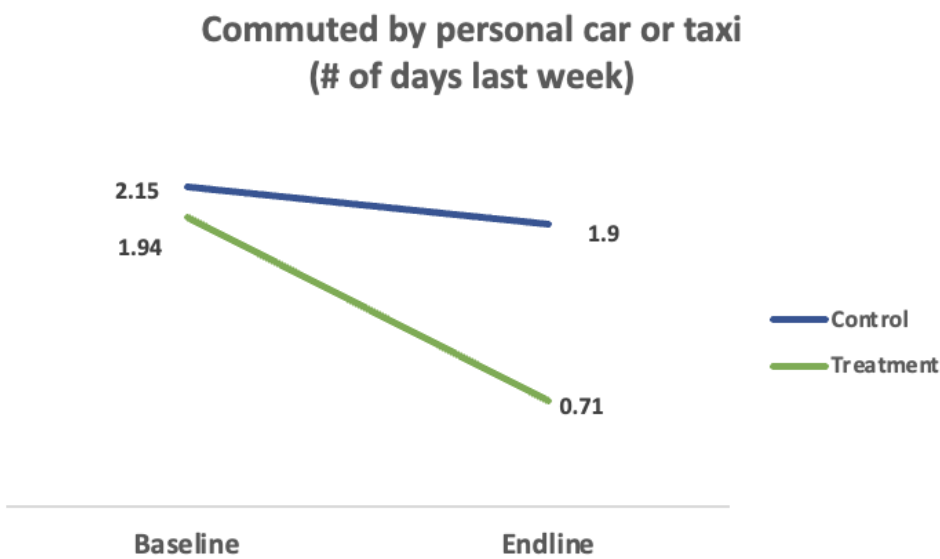
Figure 8 - Employees who reported driving “a little” or “much” less in the previous week



We also found that fewer of those in the treatment group reported driving or taking a taxi to work once or more last week compared to the control group (48% control vs. 31% treatment), although the result was only marginally significant ($p = 0.1$) after controlling for gender and routine driving in the past.

An analysis of driving frequency for individuals who completed both the baseline and endline surveys further confirmed that the intervention had a positive impact. As shown in Figure 9, the treatment and control groups had similar average frequencies of using a car or taxi for commuting at the start of the study. However, while the control group showed no change in their behavior over the course of the study, the treatment group ended up driving significantly fewer days per week compared to the control group.

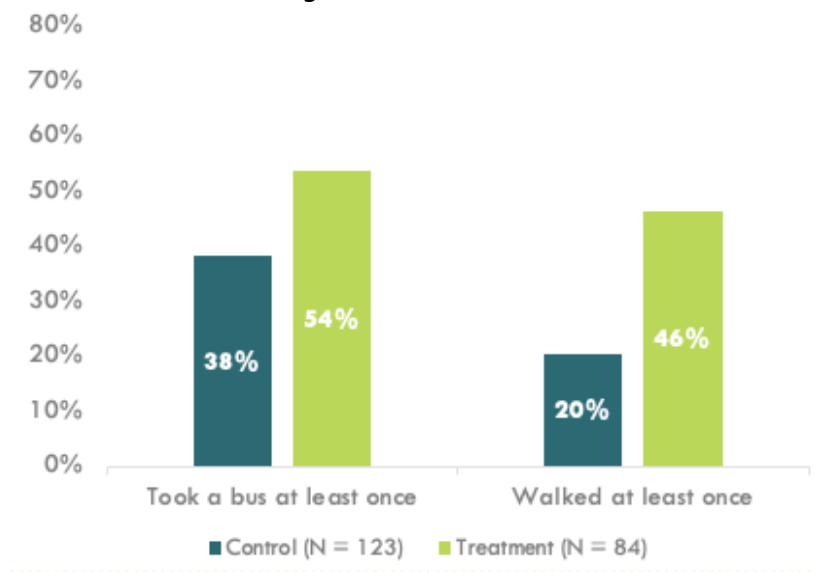
Figure 9 - Graph of the average number of days taking a taxi or car to work in the previous week



2. The intervention increased the prevalence and frequency of commuting on foot and may have prompted routine drivers to try new, alternative modes of travel.

The intervention had a significant and positive impact on the prevalence and frequency of commuting to work by foot. Holding other factors constant, the proportion of employees walking to work once or more in the previous week was 118% higher for the treatment group as compared to the control group ($p < 0.01$). See Figure 10. The average frequency of walking to work was higher by 0.94 days/week for the treatment group ($p < 0.01$).

Figure 10 - Proportion of employees who reported commuting to work at least once in the past week via bus or walking



The results also indicate that a slightly greater proportion of employees in the treatment group took a bus for their commute in the past week (44% in the treatment group compared to 38% in the control group). Furthermore, the treatment group had a slightly higher frequency of using a bus to commute to work (1.5 days/week control vs. 1.8 days/week treatment). However, these differences were not statistically significant.

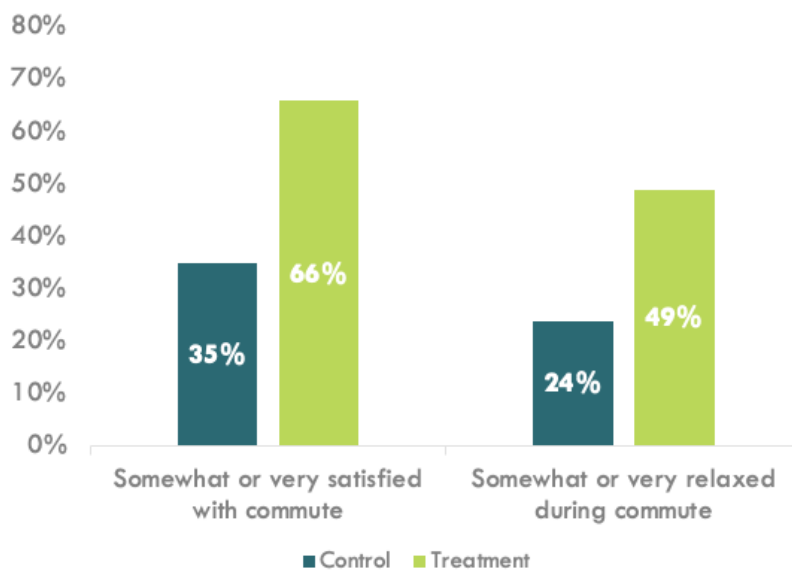
Among routine drivers only, 22% of those in the treatment group said that in the past week, they tried a new, more sustainable mode of travel ($p < 0.1$).¹³ Of those employees who were routine drivers and reported trying a new mode of transportation to commute to work during in the past two weeks, 59% tried the private, public, or free municipal bus, 35% tried walking to work, and 15% tried carpooling with colleagues or friends. No employee reported trying to bike, scooter, or take a motorcycle.

¹³ The differences were not statistically significant when comparing all respondents from the treatment and control group, however this is not surprising given that non routine drivers had already tried alternative modes of transportation.

3. The treatment group reported a better commuting experience, including higher satisfaction and lower stress and financial and time-related concerns

The intervention significantly improved employee satisfaction with their commute to work, increasing the proportion of employees who reported being somewhat or very satisfied with their commute by 85% compared to the control group ($p < 0.01$). In addition, increased the proportion of employees who reported feeling relaxed during their commute by 102% compared to the control group ($p < 0.01$). See Figure 11 below. It is noteworthy that these positive effects were significant even among those with commutes longer than 30 minutes, which tend to be more dissatisfying and stressful.

Figure 11 - Subjective commute experience for treatment and control groups



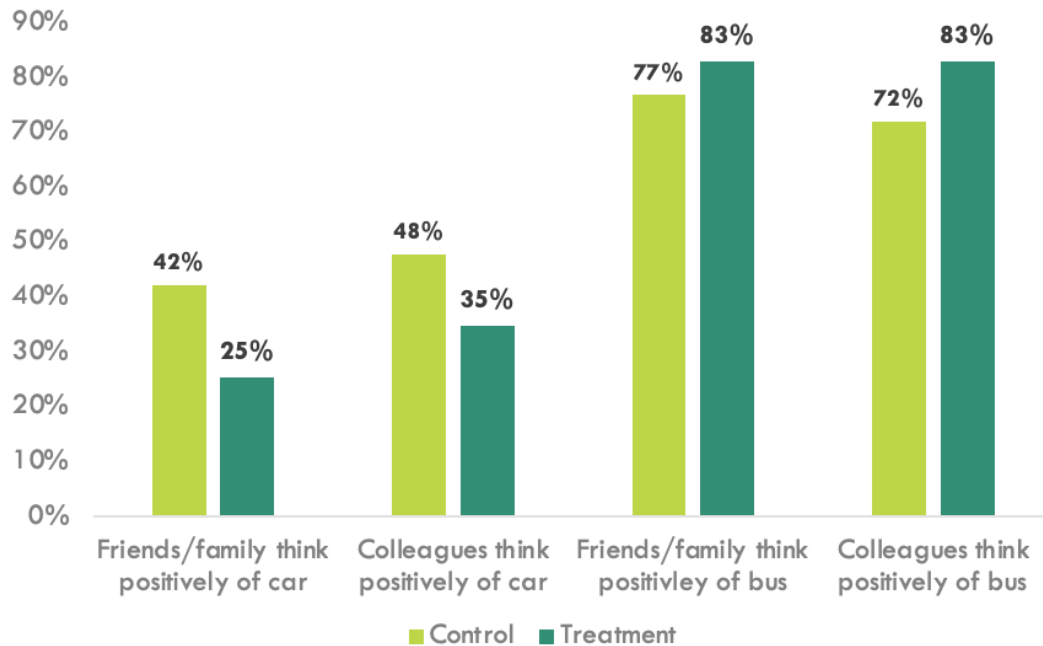
We found that the treatment group was less likely to be concerned about the cost of daily travel (81% decrease compared to the control group) and the time spent traveling (54% decrease compared to the control group). However, there was no significant difference between the two groups in their level of concern about the environmental impact of their daily commute (40% for the control group and 35% for the treatment group).

4. The intervention appeared to shift employees’ perceptions of social norms surrounding transportation mode choices.

The intervention affected employees’ perceptions of the prevalence of car usage among their colleagues, or the perceived descriptive social norm. Controlling for other factors, being part of the pilot decreased the estimated proportion of colleagues who drove to work by 16.7 percentage points ($p < 0.05$). Moreover, the treatment group was 32% less likely to believe that family and friends think positively about car commutes compared to the control group ($p < 0.1$), after controlling for other variables. Furthermore, the treatment group was also 25.7% more

likely to believe that work colleagues had a positive perception of commuting by bus ($p < 0.01$). See Figure 12.

Figure 12 - Proportion of individuals who moderately or strongly agree with the following social norm statements



Although not statistically significant, employees in the treatment group were also more likely than the control group to believe that friends and family were more likely to think positively about commuting by bus, and that work colleagues were less likely to think positively about car commutes.

5. The treatment group reported higher intentions to walk to work in the future but there was no difference in intention to bus in the future.

The intervention had a positive impact on employees’ intentions to walk for both the short-term (next week) and the long-term (next spring). The treatment group was 54% more likely to intend to walk to work at least one day in the upcoming week ($p < 0.01$), and they reported a higher intended frequency of walking in the next spring by an average of 0.7 days/week (marginally significant, $p < 0.1$). The treatment group had a 27% lower likelihood of intending to carpool in the coming week and a lower intended frequency of carpooling by 1.3 and 1.7 days in the coming week and next spring, respectively ($p < 0.01$). This may be due to individuals intending to use other modes of transportation, such as walking.

It is worth noting that, on average, both groups had higher intentions to bike and walk for the long term (next spring) compared to next week. For instance, only 3% of all survey respondents intended to bike in the coming week, while 25% intended to do so next spring. This likely

reflects a combination of more favorable weather in the spring, which makes biking a more practical and attractive option.

ADDITIONAL QUALITATIVE FINDINGS

We included open-ended questions in our survey to gain a deeper understanding of employee perspectives and experiences related to commuting, as well as to gather feedback on the "Give your car (and wallet) a break" pilot.

Employees' perspectives on commuting

Participants were asked what would be necessary for them to regularly commute without using a car, and their responses fell into four main categories:

1. Increased accessibility to public bus lines

"If all the neighborhoods of the capital were covered with bus routes, I think that every habitant would have given the car a break"

The most common feedback was the need for more accessible and efficient public transportation options, including additional public lines that serve a wider range of neighborhoods. Many respondents indicated that they rely on personal cars due to the limitations and inadequacies of current public transportation options, such as infrequent or non-existent bus service to their neighborhood. In particular, the free municipality bus (line No.4) was cited as insufficient for commuting to the New Municipality Building.

2. Infrastructure changes to increase pedestrian and biker safety and decrease traffic congestion

"I see in the future that the easiest way to travel with urban traffic is for the bus to move in a free traffic lane only for buses..."

Several respondents also mentioned the challenges of commuting by foot or bike due to a lack of safe and well-maintained sidewalks and bike lanes. There was a desire for better public transportation options, as well as infrastructure improvements such as the addition of dedicated bus lanes, to alleviate road congestion. These improvements would make it easier for people to commute without relying on personal cars.

3. Efficient and easy bus pass purchases

"... due to the great digitization of many services these days, it would be good if habitants were provided with weekly and online ticket card..."

Respondents suggested ways to make the process of purchasing bus tickets more efficient and convenient, such as eliminating the need for a photo, creating a digital process for purchasing weekly or monthly passes, or allowing employees to purchase passes at work, in order to encourage employees to commute by bus.

4. Reducing the price of passes or tickets or making the bus free

“Offering a free travel card would be a relief and a reason not to travel by car. “

Several respondents mentioned that subsidizing public transportation would encourage them to use buses instead of cars. Employees also stated that the free bus service for municipal employees is inadequate because the route is limited and does not serve all neighborhoods. Employees suggested that all public bus lines operated by Urban Traffic, a municipal enterprise, should be made free or discounted.

Feedback on the pilot intervention

Overall, participants in the "Give your car (and wallet) a break" pilot had a positive perception of the experience, with many citing appreciation for the free bus pass and the impact on their behavior, such as increased walking to work and increased awareness of the benefits of alternative modes of travel. The environmental benefits of the program were also highlighted as a positive aspect.

- ❖ *“I think that this campaign should be continued for the awareness of employers and officials, parents (grandparents) with children who are employed...”*
- ❖ *“The challenge was good at first as awareness for using public transport and obviously saving time and preserving the environment.”*
- ❖ *“I am satisfied that you did the transport by bus for the workers.”*

Several participants also expressed their wish that the program be made available to more employees and for bus routes to be expanded so that all employees could give their car a break (as mentioned in the previous section’s takeaways).

- ❖ *“I think that this campaign should be continued for the awareness of employers and officials, parents (grandparents) with children...There should be stimulation or a modest reward just so that they feel that they are contributing to the common good, etc.*
- ❖ *‘I only wish that the capacities increase, so that the habitants have the best possible opportunity to perform services’*
- ❖ *“The idea is clear. If all the neighborhoods of the capital were covered with bus routes, I think that every habitant would have given the car a break.”*

DISCUSSION AND TAKEAWAYS

The aim of our pilot study was to reduce car usage among municipal employees through the use of behavioral interventions. The data suggests that we were largely successful in achieving this goal, as there were positive and significant changes in various outcomes, including a

decrease in the frequency of driving, increased satisfaction with commuting, and a shift in the perception of social norms towards using public transportation. These findings confirm the potential of behavioral science to effectively improve transportation behaviors and attitudes.

We did not see an impact on certain outcomes, perceived difficulty of car-free commuting, environmental concerns, and intentions to bike in the future. These results could be due to a variety of reasons, such as low statistical power, the design of the interventions, or structural limitation.

It is important to consider several limitations in interpreting our results. The survey had incomplete participation, and it is unclear if the respondents were self-selecting into the survey. Moreover, self-reported data is prone to biases, such as social desirability bias and optimism bias. Additionally, due to the design of our pilot, we cannot determine which specific intervention components led to the observed changes in behavior.

Finally, it is worth noting that commuting habits require decision-making and action on a daily basis. While we saw changes in behavior in the short term, it is uncertain if these changes will persist without continued reinforcement.

Next steps and recommendations

Based on the results described above, we recommend the following next steps to increase the chances of adopting and scaling up the intervention:

1. Addressing structural challenges: Behavioral interventions can shift behavior, as demonstrated in our pilot, however, having the required material infrastructure in place is a prerequisite. As mentioned previously, in Prishtinë/Priština many behavioral aspects contribute to the prevalence of driving. Addressing these could have a positive impact on reducing car commutes, but their potential for impact is limited unless the city also addresses structural issues such as:

- Safe and comfortable walking pathways and sidewalks, which would allow a significant number of people to walk to/from work
- Adequate bus lines that cover the city and its major industrial and residential areas
- Efficient, more direct bus routes
- Reliable and consistent bus schedules

In order to maximize their effectiveness, it would be beneficial to implement the behavioral interventions alongside structural improvements. As the city is already planning to address some of the structural challenges mentioned, a coordinated approach would allow the combined impact of both types of interventions to be maximized.

2. Additional testing: For this pilot, we used two main approaches to encourage behavior change: “nudges” (such as email reminders) and economic incentives (the free bus pass). While the nudge elements could be relatively easily and inexpensively replicated, it would be difficult

and expensive to offer a free bus pass to a significant proportion of the population, even for a short period.

We recommend **testing the impact of “nudge” elements separately** to assess if they would still be effective on their own though the effect may be smaller. In addition, we believe the free bus pass had a significant impact on behavior, as studies in other contexts have shown. If bus pass subsidies are possible, we recommend **testing several versions** (e.g. free vs. subsidized, short-term vs. long-term, easy to obtain vs. the current more hassle-filled process) to identify the most cost-effective option.

3. Making the intervention scalable and sustainable: To decrease the costs of the intervention, some **modifications** that could be considered include:

- Offering partially **subsidized or hassle-free** rather than free passes, if testing suggests that it would still be effective (see above);
- Launching a **communications campaign**, using posters, monitors, emails or other physical materials to replicate nudging elements at a larger scale. The campaign could include elements such as
 - Highlighting the costs of driving (e.g. with the campaign slogan, cost calculations, etc.)
 - Offering social and environmental reasoning for using alternative means of transportation (“the city will thank you”)
 - Revealing positive descriptive social norms (“most of your colleagues take the bus to work”);
- Using **low-tech** versions of the planning prompts, such as paper form, if easier;
- Developing **high-tech** versions of the planning prompts, such as an app which could eventually include behavior measurement, push messages, contests, and reward, and could be more easily scaled up to a large number of people without relying on partnerships with employers;
- Providing **easy-to-understand information** about alternative means of transportation at the city-level, such as pamphlets and digital versions of bus schedules and stops.

4. Timing of the intervention: The timing of the pilot was not ideal as it took place mid-winter when there was also high air pollution and residents were advised to stay indoors. This may have also led to more crowded and unpredictable buses. In the future, it would be beneficial to schedule further iterations of the intervention for when the weather is **milder and more pleasant**.

Other times that could increase the success of the intervention include when people naturally experience a **“fresh start”** (e.g. the beginning of a new year, the start of spring) or a simulated fresh start (e.g. the inauguration of a new bus line or fleet) which research in behavioral science has shown to be good opportunities to change habits (see below).

5. Making behavior changes “stick”: The intervention succeeded in encouraging people to try alternative means of transportation but to make this change last and become a habit, it may

need to be reinforced over time. To create sustained behavior change, some steps that could be taken include:

- Maintaining the elements of the intervention (e.g. free/reduced bus passes, reminders about the personal costs of driving, etc.) for longer periods of time, especially into the spring
- As the intervention is scaled up, adding new elements to keep people interested and motivated, such as. new “challenges”, ways to maintain and reward positive behavior, etc.
- To encourage sustained behavior change, it is important to ensure that alternative forms of transportation offer benefits and do not pose undue difficulty or costs to individuals. Structural changes may be necessary to achieve this. As previously mentioned, it may be helpful to make changes such as improving the reliability and convenience of alternative transportation options, reducing costs, and addressing any other structural challenges that may discourage people from using them.

RECOMMENDATIONS FOR SCALING-UP

Given the success of the pilot intervention, it is recommended that it be refined and scaled up to reach as many people as possible.

Scaling up to all municipality employees. An immediate next step would be offering the intervention to all employees of the Prishtinë/Priština municipality. Several staff members are already familiar with the procedure and the materials, so it would be relatively straightforward to:

- Adapt the existing physical materials (e.g. calendar, maps) and distribute them to the entire organization
- Send planning prompts to the entire organization
- Offer one month of free or reduced-price Urban Traffic bus passes to those who did not receive them during the initial pilot
- If possible, continue to offer reduced-price or at hassle-free bus passes to the entire organization for longer than one month.

Scaling up to other employers and municipalities: To reach a significant number of people it would be advisable to replicate the intervention with other large institutions, such as banks or plants. In addition, the intervention and campaign could be adapted and replicated in other municipal governments, for their own employees.

Implementing organizations with fewer resources or capacity could try to:

- **Replicate the municipality pilot** for all their employees. To implement the free bus pass option, they could either subsidize the passes or negotiate reduced rates with Urban Traffic.

Implementing partners with higher capacity and more resources could consider the following steps to refine and improve the intervention:

- Sequentially **testing** different behavioral elements to identify which are the most impactful (e.g. bus pass-related elements, prompts, etc.)
- Identifying ways to **measure behavior** without relying on self-reporting
- Arranging their **own bus**, similar to the free municipality bus
- Exploring **new alternatives**, such as Slack, Teams, or WhatsApp, for tech-reliant elements (e.g. planning prompts) if these prove to be important.

Conclusion

This project provides a deeper understanding of the behavioral barriers and low-cost solutions for shifting transportation behavior in Prishtinë/Priština. By using a behavioral approach, we were able to identify the key factors that influence transportation behavior and design a pilot intervention, which we implemented and tested with the Municipality of Prishtinë/Priština. While there were limitations to the test and intervention design, we nonetheless saw positive results in reducing car usage, improving the subjective commute experience, and shifting norms around public transportation.

This project demonstrated the potential of using behavioral science to address transportation challenges with relatively low-cost, innovative tools. If implemented alongside necessary structural and infrastructure changes, similar interventions have a clear potential to alleviate traffic congestion and improve air quality in Prishtinë/Priština. We hope that the insights and lessons learned from this project will be scaled and applied to other organizations and within the municipality to promote sustainable transportation behaviors that benefit individuals, society, and the environment.

About ideas42

We're a non-profit looking for deep insights into human behavior—into why people do what they do—and using that knowledge in ways that help improve lives, build better systems, and drive social change. Working globally, we reinvent the practices of institutions and create better products and policies that can be scaled for maximum impact.

We also teach others, ultimately striving to generate lasting social impact and create a future where the universal application of behavioral science powers a world with optimal health, equitable wealth, and environments and systems that are sustainable and just for all.

For more than a decade, we've been at the forefront of applying behavioral science in the real world. And as we've developed our expertise, we've helped to define an entire field. Our efforts have so far extended to 50 countries as we've partnered with governments, foundations, NGOs, private enterprises, and a wide array of public institutions--in short, anyone who wants to make a positive difference in peoples' lives.

For more information on this project, you can contact:

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Appendix

Diagnosis Interview Guide (English)

Introductory and Structural Questions (15 min)	
NOTE: Start with these questions for ALL interviewees.	
Questions	
To begin, can you tell me a little bit about yourself? (i.e. name, how long you've lived in Pristina, what you do for work, etc.)	
Next, can you tell me a little about your travel needs in the city center: <ul style="list-style-type: none"> • Where in the city do you live? • Where do you usually need to travel? • Do you need to travel there during peak hours (7 - 9am, 12-1pm, and 4-6pm)? • How far apart are these places from where you live? • How often do you need to go there? • Is your commute / travel schedule the same every day, or does it vary? • Is your travel during peak hours at all flexible / can your commitments be moved? 	
Based on what you know: <ul style="list-style-type: none"> • How far is the closest bus stop to your home and workplace? • Are there bus lines that come directly to your neighborhood? <ul style="list-style-type: none"> ○ Do you know which lines they are? • What are the walking conditions around your neighborhood? 	
What mode(s) of transportation (e.g. walking, taking the taxi, driving, taking the bus, etc.) do you use to travel to where you need to go? <ul style="list-style-type: none"> • How much do you use each? • How long do these trips take? 	
How do your colleagues and peers travel to and from work? <ul style="list-style-type: none"> • Why do you think this is? 	
How do the majority of Pristina travel during peak hours? <ul style="list-style-type: none"> • Why do you think this is? 	
If you could travel during peak hours in any of the following ways, what would you prefer, and why? Personal Car Bus Taxi Walking Anything else? <ul style="list-style-type: none"> • How much of an issue do you think traffic congestion is, within Pristina's city center? • Does it personally affect you? How so? 	
[If not mentioned above] Do you, or any of your household members own a car?	
<u>[Remaining interview questions depend on which group the interviewee belongs to:]</u>	
If respondent: <ul style="list-style-type: none"> • OWNS A CAR • ALWAYS / MOSTLY DRIVES → GO TO: <u>GROUP A QUESTIONS</u>	If respondent: <ul style="list-style-type: none"> • TAKES THE BUS OR WALKS MOSTLY • DOES NOT OWN A CAR → GO TO <u>GROUP B QUESTIONS</u>

GROUP A: THOSE WHO DRIVE ALWAYS / MOST OF THE TIME
 NOTE: Only ask the following questions for those who drive their car / take a taxi frequently, and do not take the bus or walk often/ at all.

Part I (15 min)
Objective: Understand perceptions and experiences of DRIVING and TAXIS USAGE

Questions

How long have you had a car?

- Before you owned/ had access to a car, how did you get around?
 - (If applicable) Why did you stop traveling in that way?
- (If applicable) How did your friends / family react when you first started driving as your main source of transportation?

Do you usually drive it or does somebody else drive?

- (If somebody else drives) Do they usually drive you where you need to go?

How often do you use your car?

Where do you park your car?

- How close is your car parking spot to your workplace and home?
- How much do you have to pay for parking?

[If they drive] Do you like driving? What do you like or dislike about driving during peak hours?

- Do you usually do anything else while you're in the car during peak hours? (e.g. take calls, check emails, listen to music, etc.)

In general, over the course of a week or month, how much does it cost for you to drive and park in Pristina?

- How often do you think about these costs?
- Do you feel this amount is affordable?
- How often do you have to pay for parking or fill up gas?

Do you think there are any benefits of driving a car?

- What about specifically during peak hours?
- (If yes) What are they?
- (If yes) How important are these [benefits] to you?

Is there anything you do not like about driving a car?

- (If yes) What do you not like?
- (If yes) How often do you experience these things / feel this way?
- (If yes) How much does this/do these bother you?

Tell me about the people who usually drive in Pristina -

- Who do you think drives cars, especially during peak hours?
- How do you feel about drivers?

Do you know anybody who owns a car but doesn't use it very often?

- (If yes) Why do you think they do this?

Do you ever take taxis during peak hours?

- How much does it cost to take a taxi during peak hours to get to where you need to go?
- What do you think about this price? (Affordable? Too expensive?)

Do you think there are any benefits of taking a taxi during peak hours?

- (If yes) What are they?
- (If yes) How important are these [benefits] to you?

Tell me about the people who usually use a taxi in Pristina -

- Who do you think takes taxis, especially during peak hours?
- How many people travel at a time in a taxi? What does the occupancy in a taxi look like?
- How do people in Pristina feel about taxis?

Part II (15 min)
Objective: Understand perceptions and experiences of TAKING THE BUS / WALKING
Questions
<i>“Now, we’re going to transition to talk more about other modes of travel, such as taking the bus and walking.”</i>
<p>Have you ever taken the bus or tried to walk during peak hours?</p> <ul style="list-style-type: none"> • (If yes) Can you describe that experience to me? • (If yes) What made you decide to try it? • (If yes) Would you do it again or recommend others to do it? Why / why not?
<p>(If no to the previous question) Have you ever considered taking the bus or walking during peak hours?</p> <ul style="list-style-type: none"> • (If yes) Can you share your thought process? What made you consider it in the first place (e.g. friend/family, event, message)? • (If no) Why do you think that is? <ul style="list-style-type: none"> ○ Would you ever consider taking the bus or walking during peak hours?
<p>Have you ever tried to figure out how you would use the bus or walk during peak hours to get to where you needed to go?</p> <ul style="list-style-type: none"> • (If yes) Can you describe that process? (e.g. who you would ask/ where you would look for information) • (If yes) Is it easy or hard? • (If yes) Were there any instructions or directions that you used? What did you think of them? <ul style="list-style-type: none"> • (If no) Do you think it would be easy or hard? • (If no) What would you do if you had to figure it out?
<p>Do you know anything about the bus schedules (i.e. when the next bus is coming)?</p> <ul style="list-style-type: none"> • Where did you hear this / how did you come to know this? • Do you think the bus schedule is reliable?
<p>What would your family and colleagues think if you took the bus or walked (e.g. to work)?</p> <ul style="list-style-type: none"> • Would they approve? Disapprove? Would they comment about it at all?
<p>What types of people usually take the bus during peak hours in Pristina? (e.g. age, profession, gender, what their values are, etc.)</p> <p>How do you feel about those who ride the bus during peak hours (for example to get to work?)</p>
<p>What types of people usually walk during peak hours?</p> <ul style="list-style-type: none"> • How do you feel about people who walk during peak hours (for example to work?)
<p>Do you know anybody (else) who takes the bus or walks during peak hours?</p> <ul style="list-style-type: none"> • (If yes) How common is this among the people you know? • Why do you think they take the bus / walk during peak hours?
<p>Thinking about your friends, family, or colleagues who use the bus or walk to work in Pristina, do you think they enjoy it?</p> <ul style="list-style-type: none"> • Do they ever share their experiences with you? • (If yes) What kinds of things do they say?
<p>Are there any costs of riding the bus or walking during peak hours?</p> <ul style="list-style-type: none"> • What are they? • How significant do you think these costs are? • How big of a difference would this cost be compared to driving or taking a taxi?
<p>Are there any benefits of taking the bus or walking during peak hours?</p> <ul style="list-style-type: none"> • What are they? • How significant do you think these benefits are?
<p>Is there a price for driving or taking the taxi that would make it unaffordable?</p> <ul style="list-style-type: none"> • (If yes) What would that price be for you? • If that were to happen, what would you do instead?
<p>Have you, or anybody you know, ever tried or wanted to take the bus or walk, but ended up using a car or taxi instead?</p>

<ul style="list-style-type: none"> • Can you describe what happened? (e.g. didn't have the right payment, got picked up by an illegal taxi, had an unplanned event come up, weather changed, etc.) • How often do you think this happens?
<p>If you were to start taking the bus, how would you want to pay? (e.g. using coins, monthly pass, etc.)</p> <ul style="list-style-type: none"> • Is there a bus price that would make you more likely to use it?
<p>If you were to walk to work, do you know how you would get there?</p> <ul style="list-style-type: none"> • What kinds of roads would you take? Are they pedestrian-friendly? • Do you know of any small, pedestrian-only streets around your neighborhood?
<p>Part III (10 min)</p> <p>Objective: Understand overall comparisons / thought processes between different modes</p>
<p>Questions</p>
<p>How do you decide what mode of travel makes the most sense on a given day / time?</p> <ul style="list-style-type: none"> • What aspects of travel matter most to you when choosing how to get somewhere? (e.g. time it takes, comfort, emissions, safety, etc.)?" • How much does the weather / external factors impact how you travel?
<p>Can you usually anticipate if there will be bad travel conditions on a given day? (e.g. bad traffic / parking / weather, etc.)</p> <ul style="list-style-type: none"> • (If yes) Does that impact your transportation decisions at all? How so? • What kind of travel conditions are most important to you? • Can you give an example?
<p>Do you often hear or see people or media talking about driving, or taking the taxi?</p> <ul style="list-style-type: none"> • What kind of things do you hear? Can you give an example? • What about walking or taking the bus?
<p>Is there anything you have to think ahead or plan before you leave the house during peak hours (e.g. what to bring, how early to leave, what roads you'll take, etc.)?</p> <ul style="list-style-type: none"> • Can you walk me through your thought process? • Would this thought process be different if you were to take the bus? How so? • Would this thought process be different if you were to walk? How so?
<p>Lastly, can you share your thoughts and experiences with air pollution in Pristina -</p> <ul style="list-style-type: none"> • Do you notice air pollution in your daily life in Pristina? <ul style="list-style-type: none"> ○ When? • Are you concerned about air pollution in Pristina? <p>Why / why not?</p>
<p>Thanks for your time. Is there anything else you'd like to share with us about your experiences or perspective with respect to peak hour travel in Pristina?</p>

<p>GROUP B: THOSE WHO MOSTLY TAKE THE BUS / WALK</p> <p>NOTE: Only ask the following questions for those who responded that they take the bus and/or walk most frequently</p>
<p>Part I (15 min)</p> <p>Objective: Understand perceptions and experiences of TAKING THE BUS / WALKING</p>
<p>Questions</p>
<p><i>"Thanks, now I'd like to ask more about your experiences taking the bus / walking."</i></p>
<p>Can you tell me about your typical experience taking the bus or walking during peak hours around the city center?</p> <ul style="list-style-type: none"> • How long have you been traveling this way? • Have you ever had a bad experience traveling this way? Did it impact your future behavior? • Would you recommend others to do it? Why / why not?
<p>What made you consider or decide to take the bus / walk in the first place (e.g. friend/family, event, message)?</p>

<p>How did you first figure out how to use the bus or walk to get to where you needed to go? (Or, how would you figure it out if you needed to go somewhere new)</p> <ul style="list-style-type: none"> • Can you describe that process? (e.g. who you would ask/ where you would look for information) • Is it easy or hard? • Are there any instructions or directions that you use?
<p>(If applicable) What kinds of roads do you take when you walk?</p> <ul style="list-style-type: none"> • Are they pedestrian-friendly? • Do you know of any small, pedestrian-only streets around your neighborhood?
<p>(If applicable) How do you currently pay for the bus? (e.g. pay by coin, or pay monthly)</p> <ul style="list-style-type: none"> • Would you prefer to pay in any other way?
<p>(If applicable) What do you think of the bus schedules?</p> <ul style="list-style-type: none"> • How did you come to know what the schedules are? • Do you think the bus schedule is reliable?
<p>Do your family and colleagues know that you take the bus or walk (e.g. to work)?</p> <ul style="list-style-type: none"> • Have they ever made any comments or asked any questions? Have you ever heard them express their opinion about it?
<p>What types of people usually take the bus during peak hours in Pristina?</p> <ul style="list-style-type: none"> • How do you feel about those who ride the bus during peak hours (for example to get to work?)
<p>What types of people usually walk during peak hours?</p> <ul style="list-style-type: none"> • Why do you think they are walking during peak hours? • How do you feel about those who walk?
<p>Do you know anybody (else) who takes the bus or walks during peak hours?</p> <ul style="list-style-type: none"> • Do you know why they do it?
<p>Thinking about friends, family, or colleagues who use the bus or walk to work in Pristina, do you think they are enjoying it?</p>
<p>Are there any costs of riding the bus or walking during peak hours?</p> <ul style="list-style-type: none"> • What are they? • How significant do you think these costs are? • How big of a difference would this cost be compared to driving or taking a taxi?
<p>Are there any benefits of taking the bus or walking during peak hours?</p> <ul style="list-style-type: none"> • What are they? • How significant do you think these benefits are?
<p>Have you, or anybody you know, ever intended to take the bus or walk, but ended up using a car or taxi instead that day?</p> <ul style="list-style-type: none"> • Can you describe what happened? (e.g. didn't have the right payment, got picked up by an illegal taxi, had an unplanned event come up, weather changed, etc.) • How often do you think this happens?
<p>Part II (15 min)</p> <p>Objective: Understand perceptions and experiences of DRIVING and TAXIS USAGE</p>
<p>Questions</p>
<p>Great. Now, we're going to transition to talk about other modes of travel, such as driving or taking the taxi.</p>
<p>Tell me a little bit about your thoughts on driving - Do you think there are any benefits of driving a car during peak hours? What about costs?</p> <ul style="list-style-type: none"> • What are they? • How important are these [benefits] to you? • How important are these [costs] to you?
<p>In general, over the course of a week or month, how much do you think it would cost for someone to drive and park in Pristina's city center?</p> <ul style="list-style-type: none"> • Do you feel this amount would be affordable for you?
<p>Would you like to eventually purchase a car?</p> <ul style="list-style-type: none"> • Why / Why not?

Tell me about the people who usually drive in Pristina -

- Who do you think drives cars, especially during peak hours?
- How do people in Pristina generally feel about drivers?

Do you know anybody who owns a car but doesn't use it very often?

- Why do you think this is?
- What would others think about people like this?

Do you ever take taxis during peak hours?

- How much does it cost to take a taxi during peak hours to get to where you need to go?
- What do you think about this price? (Affordable? Too expensive?)

Do you think there are any benefits of taking a taxi during peak hours?

- (If yes) What are they?
- (If yes) How important are these [benefits] to you?

Tell me about the people who usually use a taxi in Pristina -

- Who do you think takes taxis, especially during peak hours?
- How do you feel about taxis?

Part III (10 min)
Objective: Understand overall comparisons / thought processes between different modes
Questions

How do you decide what mode of travel makes the most sense on a given day / time?

- What aspects of travel matter most to you when choosing how to get somewhere? (e.g. time it takes, comfort, emissions, safety, etc.)?
- How much does the weather / external factors impact how you travel?

Can you usually anticipate if there will be bad travel conditions on a given day? (e.g. bad traffic / parking / weather, etc.)

- (If yes) Does that impact your transportation decisions at all? How so?
- What kind of travel conditions are most important to you?
- Can you give an example?

Do you often hear or see people or media talking about driving, or taking the taxi?

- What kind of things do you hear? Can you give an example?
- What about walking or taking the bus?

Is there anything you have to think ahead or plan before you leave the house during peak hours (e.g. what to bring, how early to leave, what roads you'll take, etc.)?

- Can you walk me through your thought process?
- Would this thought process be different if you were to take the bus? How so?
- Would this thought process be different if you were to walk? How so?

Lastly, can you share your thoughts and experiences with air pollution in Pristina -

- Do you notice air pollution in your daily life in Pristina?
 - When?
- Are you concerned about air pollution in Pristina?
 - Why / why not?

Thanks for your time. Is there anything else you'd like to share with us about your experiences or perspective with respect to peak hour travel in Pristina?

Baseline Survey Balance Table

	Control	Treatment	Diff
Age	42.274	42.014	-0.26
	-9.622	-10.131	-0.869
Live with children	0.812	0.797	-0.014
	-0.393	-0.405	-0.82
Routinely drive	0.624	0.608	-0.015
	-0.487	-0.492	-0.843
Own a car	0.918	0.919	0.001
	-0.277	-0.275	-0.977
# of days /week take a car (if routinely driving)	2.882	2.878	-0.004
	-1.276	-1.193	-0.984
Female	0.5	0.611	0.111
	-0.513	-0.502	-0.505
Observations	85	74	159

Baseline Survey Questions

1. Do you or your household own a car?
 - a. Yes
 - b. No

2. In the past year have you routinely (e.g. more than once a week) **driven a car** to get around for work or other reasons?
 - a. Yes
 - b. No

3. How often do you commute to work by car (**personal car, shared/carpool car or taxi**)?
 - a. 0 - 11 times per year (never / almost never)
 - b. 1 - 4 times per month
 - c. 2 - 4 times per week
 - d. 5 times per week (always / almost always)

4. For each day LAST WEEK, what was the main mode of transportation you used to get to work?
 - a. Personal car alone
 - b. Personal car with family members
 - c. Carpooling with colleagues or friends
 - d. Taxi
 - e. Municipality's free bus line for employees
 - f. Private bus
 - g. Public bus (i.e. Urban Traffic)
 - h. Walking
 - i. Bike, ebike, motorcycle, scooter or similar
 - j. Other

5. Which of the following statements do you agree with the most?
 - a. "I wish I could use a car (personal or taxi) for commuting MORE than I currently do"
 - b. "I use a car (personal or taxi) for commuting about the right amount"
 - c. "I wish I could use a car (personal or taxi) for commuting LESS than I currently do"

6. Approximately how far do you live from your office?
 - a. <1km
 - b. 1-3km
 - c. 3-5km
 - d. 5-10km
 - e. > 10km

7. What neighborhood do you live in:
 - a. Qendra
 - b. Lakrishte
 - c. Kodra e Diellit
 - d. Ulpiana
 - e. Lagjja e Muhaxherëve 1
 - f. Lagjja e Muhaxherëve 2 (Matican)
 - g. Taukbashqe
 - h. Rruga B
 - i. Kodra e Trimave
 - j. Tophane
 - k. Arbëria (Dragodani)
 - l. Kalabria

8. Age: ____

9. Do you have kids that live with you?
 - a. Yes

b. No

10. What municipality department do you work for?

- a. Administration
- b. Health
- c. Social Welfare
- d. Education
- e. Culture
- f. Sports
- g. Agriculture
- h. Finance
- i. Property
- j. Urbanism
- k. Capital Investments and Contracts Management
- l. Public Services, Protection and Rescue
- m. Cadaster
- n. Inspection
- o. Strategic Planning
- p. Parks

11. In what municipality building do you typically work?

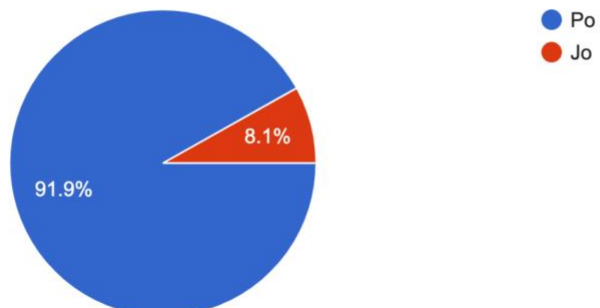
- a. 2 UÇK (Main Building of the Municipality)
- b. Street Andrea Groba no.40 (Near Main building of the Municipality)
- c. Street Ilir Konushevcı (Near Main Building of the Municipality)
- d. The Building of the New Municipality of Prishtina-Arberia Neighborhood
- e. Other _____

Thank you very much for your time!

Baseline Survey Summary Statistics

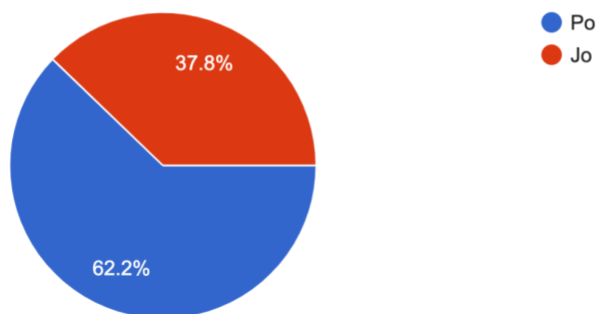
A keni ju apo familja juaj makinë?

172 responses



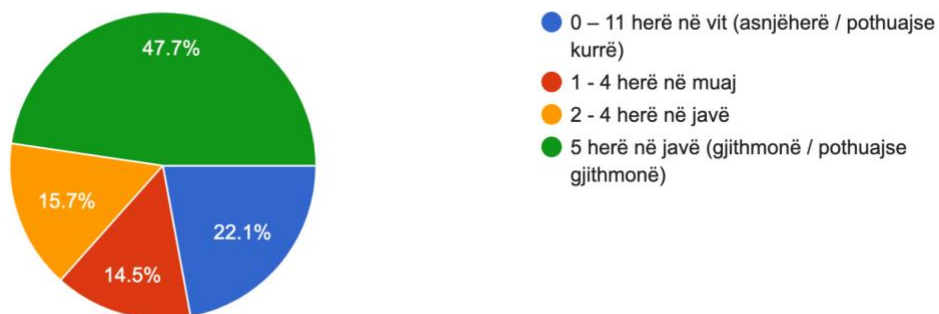
Në vitin e kaluar, a keni përdorur makinën për të shkuar në punë ose arsye tjera, në mënyrë rutinore (p.sh. më shumë se një herë në javë)?

172 responses



Sa shpesh udhëtoni për në punë me makinë (makinë personale, makinë të përbashkët ose taksì)?

172 responses

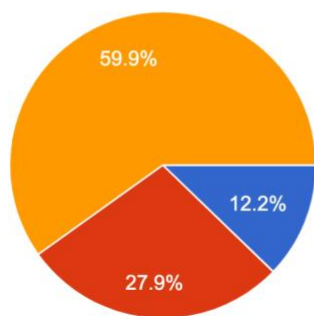


Për çdo ditë JAVËN E KALUAR, cila ishte mënyra kryesore e transportit që keni përdorur për të shkuar në punë?



Me cilin nga pohimet e mëposhtme pajtoheni më shumë?

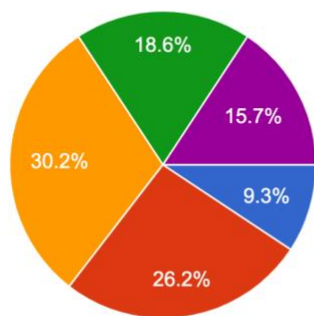
172 responses



- "Do të doja të mund të përdorja makinën (personale ose taks) për të shkuar në punë apo diku tjetër më shumë se sa e përdori aktualisht"
- "Unë e përdori makinën (personale ose taks) për të shkuar në punë apo diku tjetër në masën e duhur"
- "Do të doja të mund të përdorja makinën (personale ose taks) për të shkuar në punë ose diku tjetër më pak se sa e përdori aktualisht"

Përafërsisht sa larg jetoni nga zyra juaj?

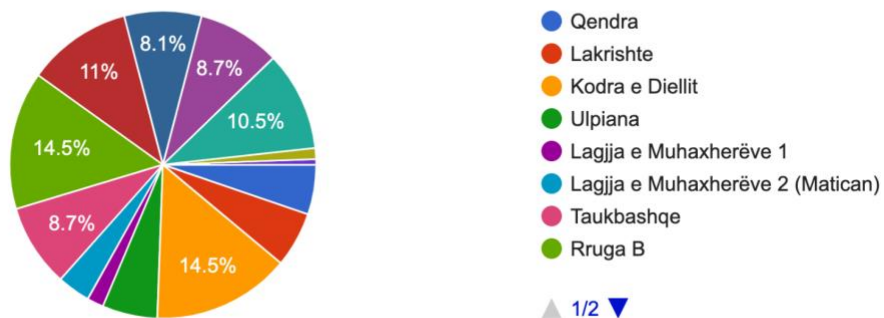
172 responses



- <1km
- 1-3km
- 3-5km
- 5-10km
- > 10km

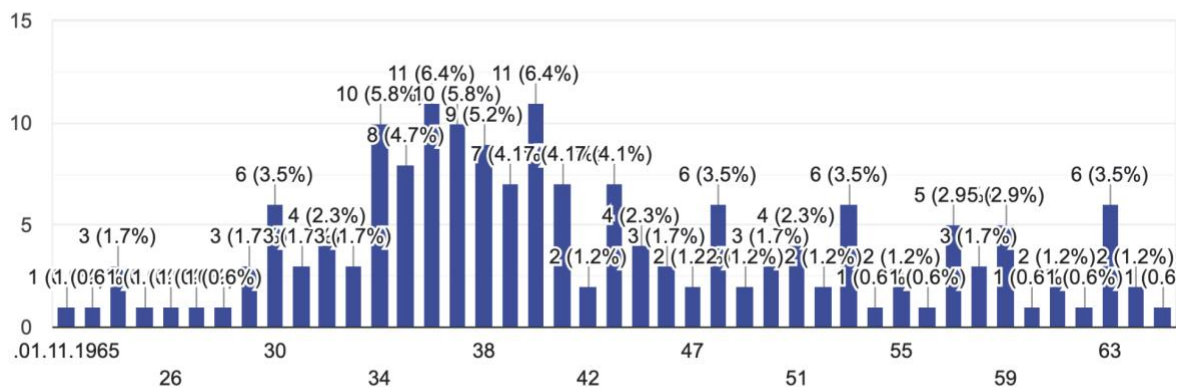
Në cilën lagje banoni:

172 responses



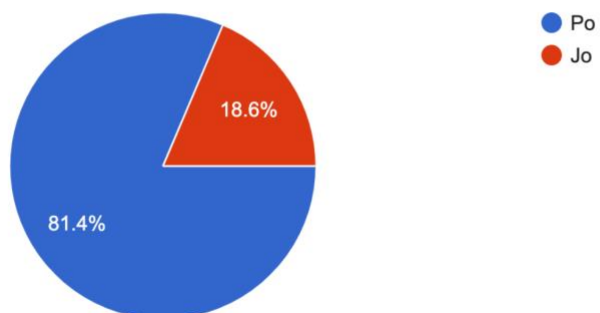
Mosha

172 responses



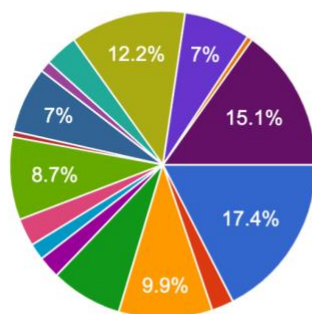
A keni fëmijë që jetojnë me ju?

172 responses



Në cilin department të komunës punoni?

172 responses

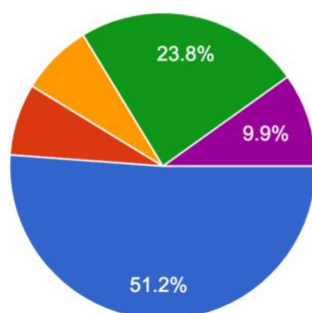


- Administratë
- Shëndetësi
- Mirëqeniet sociale
- Edukim
- Kulturë
- Sport
- Bujqësi
- Financa

▲ 1/3 ▼

Në cilën ndërtesë të komunës punoni?

172 responses



- Rruga. UÇK-2 (Ndërtesa kryesore e Komunës)
- Rruga. Andrea Groba nr.40 (Afër Ndërtesës Kyesore të Komunës)
- Rruga. Ilir Konushevci (Afër Ndërtesës Kyesore të Komunës)
- Ndërtesa e Re e Komunës – Lagjia Arbëria
- Tjera

Endline Survey Questions

We want to hear from everyone!

You may remember that a few weeks ago we sent another survey to understand how Municipality employees travel to and from work. It was very useful to receive your input, and we thank those of you who filled it in.

We are asking you to please complete one more brief survey [10 min], to help us answer a few additional questions about our community. Your responses will be used only for research purposes. Results will be shared only in an aggregated format (e.g. averages for all employees), and no municipality employee will have access to your individual responses.

All participants will be entered to win one of THREE €50 cards and ONE €100 at the local bookstore.

The survey will close on Friday, Dec 2.

1. In the past year have you routinely (e.g. more than once a week) driven a car to get around for work or other reasons?

Yes (1)

No (2)

Display This Question:

If In the past year have you routinely (e.g. more than once a week) driven a car to get around for w... = Yes

2. How easy or difficult would it be for you to commute to work without using a personal car?

Very Difficult (1)

Somewhat difficult (2)

Neither easy nor difficult (3)

Somewhat easy (4)

Very easy (5)

Display This Question:

If In the past year have you routinely (e.g. more than once a week) driven a car to get around for w... = Yes

3. What would it take for you to commute regularly without using a personal car?

4. For each day LAST WEEK, what was the main mode of transportation you used to get to work?

	Personal Car Alone or with family members (1)	Carpool with colleagues or friends (2)	Taxi (3)	Municipality's free bus line for employees (4)	Private Bus (5)	Public bus (i.e. Urban Traffic) (6)	Walking (7)	Bike, ebike, motorcycle, scooter or similar (8)	Other (9)
Monday (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tuesday (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wednesday (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thursday (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friday (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How would you describe the amount you used a car (personal or taxi) to travel to and from work LAST WEEK?

- Much less than usual (1)
- A little less than usual (2)
- About the same as usual (3)
- A little more than usual (4)
- Much more than usual (5)
- I (almost) never use a car (6)

6. Thinking about LAST WEEK, on average how long did it take for you to get to and from work?

- < 10 minutes (1)
- 11-20 minutes (2)
- 21-30 minutes (3)
- 31-40 minutes (4)
- >40 minutes (5)

7. Over the past TWO weeks, have you used any modes of transportation that you do not typically use to travel to/from work (e.g. bus, car, ebike)?

- Yes (1)
- No (2)

Display This Question:
 If Over the past TWO weeks, have you used any modes of transportation that you do not typically use... = Yes

8. Which modes of travel did you try?

[Please select all that apply]

- Personal car alone or with family members (1)
- Carpooling with colleagues or friends (2)
- Taxi (3)
- Municipality's free bus line for employees (4)
- Private bus (5)
- Public bus (i.e. Urban Traffic) (6)
- Walking (7)
- Bike, ebike, motorcycle, scooter or similar (8)

9. Thinking about your overall experience commuting to/from work LAST WEEK, how **happy/satisfied** are you with the choices you made about the means of transportation (i.e. whether you traveled by car, bus, carpooling, walking, etc.)?

- Very unhappy (1)
 - Somewhat unhappy (2)
 - Neutral (3)
 - Somewhat Happy (4)
 - Very Happy (5)
-

10. Thinking about your overall experience commuting to/from work LAST WEEK, how **relaxed or stressful** would you say the trip was?

- Very Stressful (1)
 - Somewhat stressful (2)
 - Neutral (3)
 - Somewhat relaxed (4)
 - Very Relaxed (5)
-

11. How concerned are you about the cost of your daily travel to/from work?

- Not at all concerned (1)
- Slightly concerned (2)
- Moderately concerned (3)
- Very concerned (4)
- Extremely concerned (5)

12. How concerned are you about the environmental impact of your daily travel to/from work?

- Not at all concerned (1)
 - Slightly concerned (2)
 - Moderately concerned (3)
 - Very concerned (4)
 - Extremely concerned (5)
-
-

13. How concerned are you about the amount of time you spend traveling to/from work?

- Not at all concerned (1)
- Slightly concerned (2)
- Moderately concerned (3)
- Very concerned (4)
- Extremely concerned (5)

14. In terms of using a car (personal, carpooling, taxi) for commuting to and from work which of the following do you agree with more?

- "I wish it were possible for me to use a car MORE than I currently do to travel to/from work" (1)
- "I use a car about the right amount to travel to/from work" (2)
- "I wish it were possible for me to use a car LESS than I currently do to travel to/from work" (3)

15. Are you aware of the free bus service to get to/from work for municipal employees?

- Yes (1)
- No (2)

16. If you wanted to ride the free bus service or the public bus to get to/from work, would you know how to use it (e.g. schedule and location of bus stops)?

- Yes (1)
- No (2)

Display This Question:
 If If you wanted to ride the free bus service or the public bus to get to/from work, would you know... = No

17. How difficult do you think it would be to find this information?

- Very difficult (1)
- Somewhat difficult (2)
- Neither easy nor difficult (3)
- Somewhat easy (4)
- Very easy (5)

18. In the past year, have you ever purchased a bus pass for yourself?

- Yes (1)
- No (2)

Display This Question:
If In the past year, have you ever purchased a bus pass for yourself? = Yes

19. How easy or difficult was the process of purchasing the bus pass?

- Very difficult (1)
- Somewhat difficult (2)
- Neither easy nor difficult (3)
- Somewhat easy (4)
- Very easy (5)

20. Please rate the extent to which you disagree or agree with the following statements

	Strongly Disagree (1)	Moderately Disagree (2)	Neither agree nor disagree (3)	Moderately Agree (4)	Strongly Agree (5)
"My friends and family think positively about a person traveling to/from work by car" (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"My friends and family think positively about a person traveling to/from work by bus" (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"My work colleagues think positively about a person traveling to/from work by car" (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"My work colleagues think positively about a person traveling to/from work by bus" (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. What percentage of your colleagues at the municipality do you think travelled to work by car today?

Between 0-100%

22. Thinking about your commute to work, **next week**, how often do you intend to:

Carpool (1)	▼ 0 day/week (1) ... 5 days/week (6)
Use a bus (public, private, or free municipal bus) (2)	▼ 0 day/week (1) ... 5 days/week (6)
Bike, scooter, motorcycle (3)	▼ 0 day/week (1) ... 5 days/week (6)
Walk (4)	▼ 0 day/week (1) ... 5 days/week (6)

23. Thinking about your commute to work, **next spring**, on an average week, how often do you intend to:

Carpool (1)	▼ 0 day/week (1) ... 5 days/week (6)
Use a bus (public, private, or free municipal bus) (2)	▼ 0 day/week (1) ... 5 days/week (6)
Bike, scooter, motorcycle (3)	▼ 0 day/week (1) ... 5 days/week (6)
Walk (4)	▼ 0 day/week (1) ... 5 days/week (6)

24. What changes to Urban Traffiku bus pass procedures would make you more likely to ride the public bus to/from work? (e.g. half-price discount, purchasing digitally or at work, not requiring photographs, etc.)

25. Do you have any other feedback or thoughts you'd like to share about how you travel to and from work?

26.a Did you receive your free 30-day bus pass from your department as part of the initiative to "Give your car (and wallet) a break"?

- Yes (1)
- No (2)

26.b How often did you use the free 30-day bus pass as part of the initiative to “Give your car (and wallet) a break”?

- Never - I already had a pass (1)
- Never - I did not want/need to ride the bus (2)
- Once or twice (3)
- Several times a week (4)
- Daily (5)

27. How helpful do you think the following materials would be in helping your colleagues to “Give the car (and wallet) a break” in the future?

	Not at all helpful (1)	Slightly helpful (2)	Moderately helpful (3)	Very helpful (4)	Extremely helpful (5)
Desk Calendar (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public Bus Map (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weekly transportation plan (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reminder emails (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. Thinking back over the past couple of weeks, what did you like best about the challenge to “Give your car (and wallet) a break”?

29. Do you have any other feedback to provide about the challenge to “Give your car (and wallet) a break”?

30. Gender

- Male (1)
- Female (2)

31. Age

32. Do you have children that live at home?

Yes (1)

No (2)

33. What neighborhood do you live in:

Qendra (City Center)(1)

Lakrishte (2)

Kodra e Diellit (Sunny Hill)(3)

Ulpiana (4)

Lagjja e Muhaxherëve 1 (5)

Lagjja e Muhaxherëve 2 (Matican) (6)

Taukbashqe (7)

Rruga/Street B (8)

Kodra e Trimave (9)

Tophane (10)

Arbëria (Dragodani) (11)

Kalabria (12)

34. Your municipal email address: (Please ensure it is in the format ----rks-gov.net)
