

CiViTAS | 2MOVE2

Integration of non-financial Incentives Aimed to Promote Behavioral Change -
The case of Tel Aviv-Yafo



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Source: CIVITAS Initiative

1 MOTIVATION AND OBJECTIVES

Over the years, the Tel Aviv–Yafo municipality has taken many measures to promote the use of sustainable transport modes, including the introduction of a bike-sharing service, Tel-O-Fun; increasing pedestrian priority at intersections; and constructing green arteries, among others. However, the municipality has not yet introduced so-called soft measures aimed specifically at encouraging behavioral change.

Two main factors suggest that now is the time to explore paths which have not been taken in the past. The first is the 2MOVE2 project in general, and the focus given to sustainable urban mobility plans (SUMP) in particular. Second, the technological moment is right. Given the ever-growing use of smartphone apps for trip planning and the role of social media (SM) in our lives, these technologies hold potential for disseminating information that could have an effect on individuals’ mobility behavior. Moreover, state-of-the-art analysis methodologies based on geo-monitoring of data gathered through smartphones can identify users’ mobility patterns, uncover their revealed preferences and shed light on their decisions.

This document describes the first attempt of the Tel Aviv–Yafo municipality to use non-financial incentives to encourage the use of sustainable transport modes. The main results of a limited (13-week) controlled case study, aimed at using such social incentives to change travelers’ behavior, have been analyzed. Based on these results, initial conclusions and insights regarding the effectiveness of various measures are hereby presented. These insights can then provide the basis for the design of broader and more comprehensive activities aiming to use similar incentives for promoting behavioral change.

The objectives of the task were as follows:

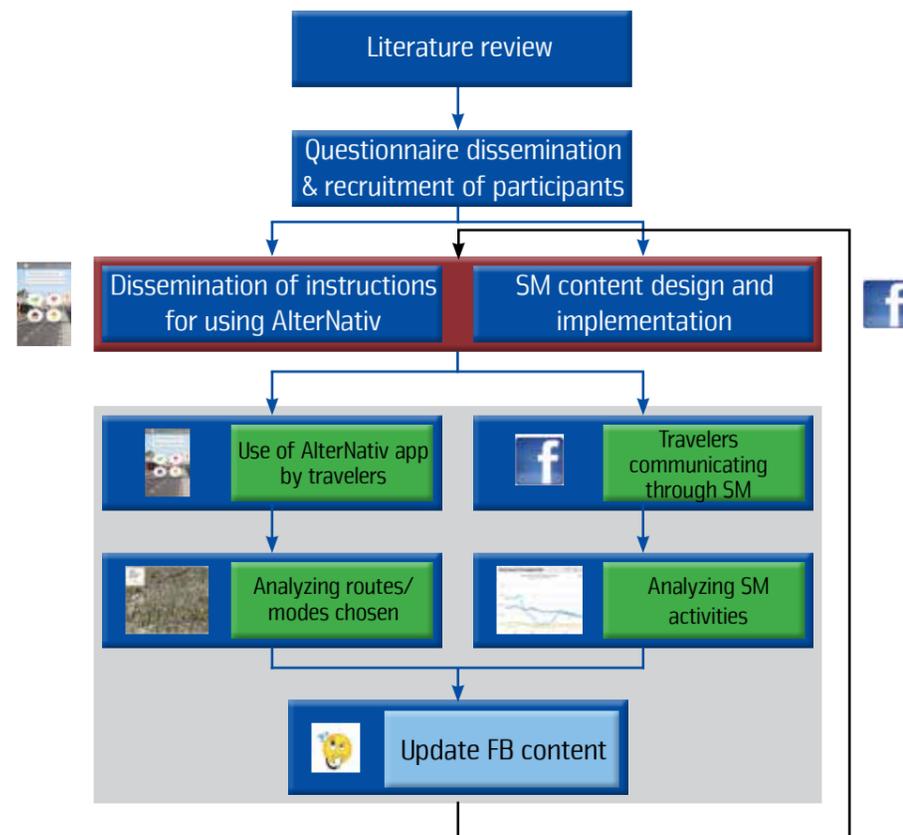
- Attempting controlled intervention through social incentives, using SM and smartphone technology, to encourage behavioral change and to promote the use of sustainable transport modes.
- Gaining evidence-based understanding of travelers’ behavior patterns and preferences.



2 KEY ELEMENTS

The key elements of the task were:

- Exploiting the benefits of AlterNativ, a novel application developed by ZenCity, enabling users to select transport modes based on environmental and health criteria, as well as more typical criteria such as journey time.
- Forming a social network, based on a dedicated Facebook (FB) group, to support participants' behavioral change with regard to the use of sustainable transport modes.
- Monitoring participants' travel habits and their relation to social incentives.



3 DESIGN OF THE CASE STUDY

The case study was designed to test whether travel-related behavioral change could be promoted using a smartphone app AlterNativ and a social media platform, namely a dedicated Facebook group.

50 participants volunteered to participate in a 13-week experiment, most of them students at Tel Aviv University.

The volunteers were asked to complete a questionnaire designed to elicit background information concerning their relevant habits and attitudes.

The questionnaire concluded with a short description of the experiment's goal, the commitment expected from the participant, and a space for the volunteer to formally provide consent to take part in the study.

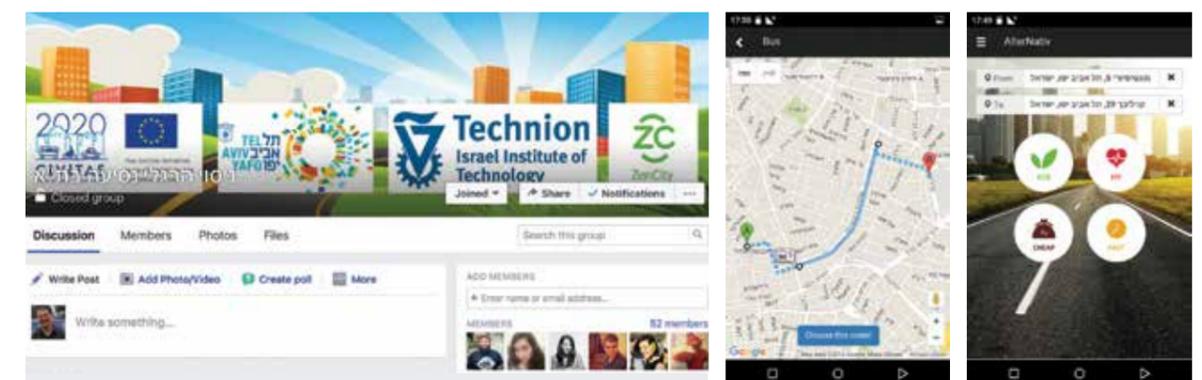
While the design of the experiment required that participants provide their names and identifying data, volunteers were assured that all personal data would remain confidential and that only aggregated results would be published.

A dedicated FB account was created as a communications arena and all participants were asked to register as group members.

Participants were also asked to use AlterNativ during the study period. AlterNativ enables the user to select a transport mode (or combination of modes) for a specific journey based on one of four criteria: CO2 emissions; calorie consumption; price; and travel duration.

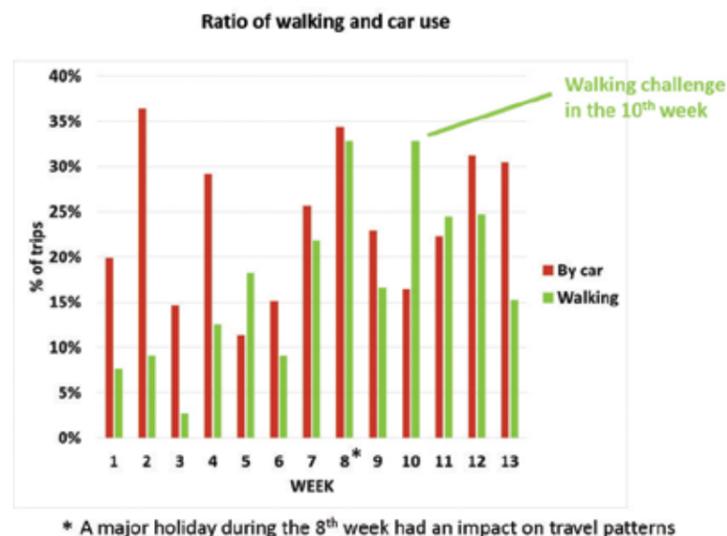
The app evaluates six possible transport modes: walking, user-owned bike, Tel-O-fun shared bike, bus, train, and private car. The user's selection reflects his/her stated preference.

AlterNativ creates and archives a travel file containing journey details (GPS points) for each trip. A state-of-the-art algorithm for identifying the transport mode and route taken is implemented on the data of each travel file, thus providing the revealed preferences of the travelers.



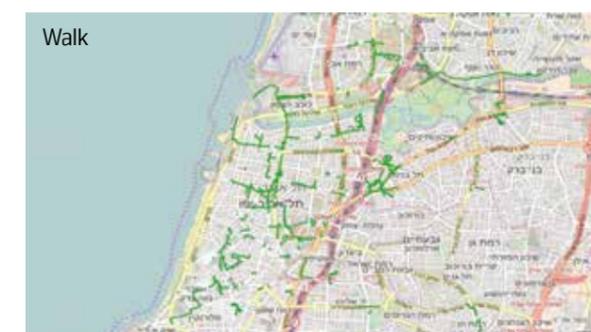
4 LESSONS LEARNT

- When attempting to promote the use of sustainable transport modes through social incentives, the group of individuals towards whom such efforts are targeted should be selected based on their attitudes towards environmental issues and social networks rather than on their socio-demographic characteristics or current mobility habits.
- A dedicated FB page, in which interesting transport-related information is presented, can serve as an easily available and cheap dissemination tool. However, creating an active social network, one where the members are sharing content with each other, requires more than mutual interest in environmental issues and sustainable transportation. It might therefore be more effective to cooperate with existing social networks, such as those linking residents of the same neighborhood or parents of children at the same school.
- In order to maintain the curiosity of members, the content posted should be carefully chosen. Surveys and riddles, which combine informative messages and fun, seem to be an effective tool.
- Using an existing social network arena for disseminating transport-related information can have the advantage of allowing the information disseminated to be tailored for the needs of the group, and thus increase its value to travelers.
- This arena can also be used for initiating competitions concerning the use of sustainable modes such as biking or walking. Praising the winners (“fame”) is a sufficient incentive for encouraging travelers to increase the use of sustainable modes on the expense of using private vehicles.



5 MORE LESSONS LEARNT

- Novel journey planners, encouraging the use of sustainable transport modes, can serve as an effective tool in promoting behavioral change.
- There exists an inherent conflict between the desire to introduce a new application, particularly a smartphone app, and the need to provide a bug-free service.
- It is therefore recommended to conduct intensive quality assurance and necessary modifications to the application's features before introducing any new application to the wider public.
- Location-based smartphone apps, particularly those that need to be continuously active for the entire journey, tend to require battery resources. This challenge should be dealt with in advance, either by limiting the experiment to short journeys or by minimizing the monitoring rate.



- Identifying revealed preferences regarding routes and transport modes on the basis of data logged by a journey planner holds huge potential for transportation planning.
- Understanding maximum acceptable walking distances to bus stops or identifying favorable combinations of transport modes are just two examples of insights that this type of analysis can reveal.
- Realizing this potential requires obtaining data for a large population. The massive use of navigation apps, such as WAZE, provides some evidence that sufficient personal benefits encourage people to allow their journeys to be monitored.
- While identifying ways to provide sufficient benefits to travelers remains to be resolved, the high value of geo-monitoring data is an incentive to look for creative ideas that can bring us closer to this target.

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