



# Design and acceptance of a multi-perspective gamified digital cycling safety training

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## Highlights & objectives

In 2025, the cycling training **Level Up Your Ride** was launched nationally in Switzerland.

The training consists of **four levels**, to be completed over the course of **four weeks**, and targets cyclists, e-bike riders, and car drivers.

It trains **six competences**, such as recognizing blind spots, turning left, and navigating roundabouts.

**Higher-order competences**, such as risk-taking and planning, are covered in one level.

Over **11,000 people** completed the training in 2025, spending 30 minutes on average in total.

An accompanying field study has **demonstrated** the effectiveness of Level Up Your Ride.

The **objectives** of this presentation are:

1. Give insights on how to design a multi-perspective gamified educational programme training cycling safety.
2. Present findings on the acceptance of the training program by user segment.
3. To outline how participants were reached and evaluate the effectiveness of different media channels.

## Participation by user segments

Most participants are frequent cyclists (78%), riding several times a week. They cover all age groups, with the largest shares aged 30–44 (39%) and 45–59 (37%). 47% are women, 53% are men.

Participants were clustered by the purposes they cycle for (commuting, errands/leisure, sport) and their car use. We used Gower distance with k-medoids clustering (PAM). This is a method suited to categorical data and widely used for customer segmentation.

Five segments emerged: (1) **All-rounders** - use the bike for everything: commuting, errands and sport; (2) **Utility cyclists** - everyday and errand trips; (3) **Commuters** - primarily work or school commute; (4) **Sport riders** - sports; (5) **Occasional/recreational riders**: ride least often, mostly for leisure, and rely most on cars.

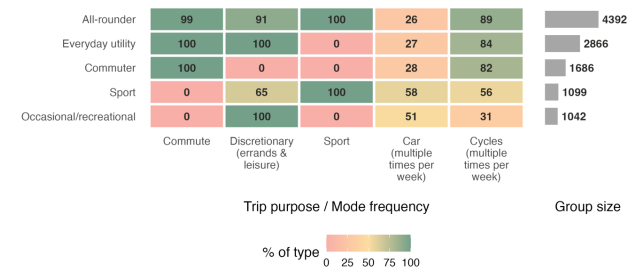


Fig. 1 Results of clustering participants.

## Design of an engaging and inclusive training

The training was conceptualized based on the basic principles of learning psychology, such as feedback and repetition (Figure 2).

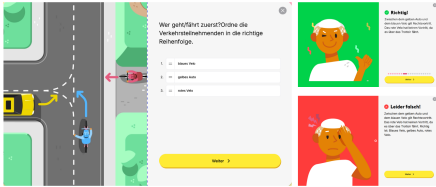


Fig. 2 Example of a quiz question and feedback

It provided gamification, as shown in a dashboard with levels completed, points and badges collected (Figure 3).

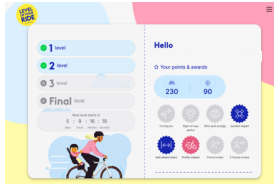


Fig. 3 Gamification elements used

Level Up Your Ride featured quiz questions from the perspective of car drivers and cyclists for specific skills to promote mutual respect and understanding (Figure 4).

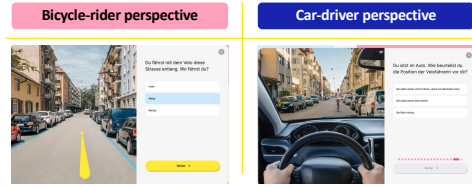


Fig. 4 Change of perspectives to promote mutual respect

## Communication

The cycling training was promoted through a multi-channel campaign that combined social media marketing, communication with existing contacts of a bicycle promotion program (Bike to Work), and traditional channels such as out-of-home media such as posters and flyers (only in the city of Zurich).

Most participants were reached through existing contacts (bike to work) and social media. Reaching new target groups poses a challenge. Out-of-home media are an important channel to reach these new target groups such as occasional/recreational riders.

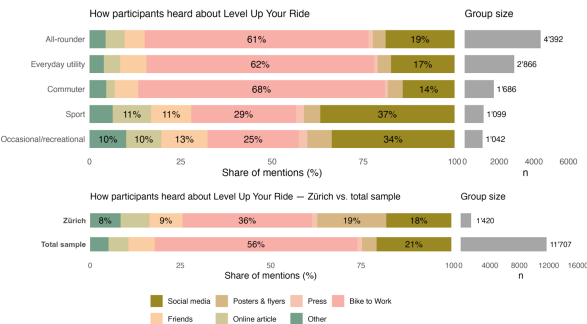


Fig. 5 Channels of which participants along segments were reached based on self report

## Acceptance

To evaluate acceptance of Level Up Your Ride, a shortened version of UTAUT2 was used. Figure 6 shows how these acceptance factors related to the Net Promoter Score (NPS): participants' likelihood to recommend the training. Recommendation was driven most strongly by enjoyment (hedonic motivation) and perceived benefit (performance expectancy). Segments predicted the recommendation less than UTAUT2 items and socio-demographics.

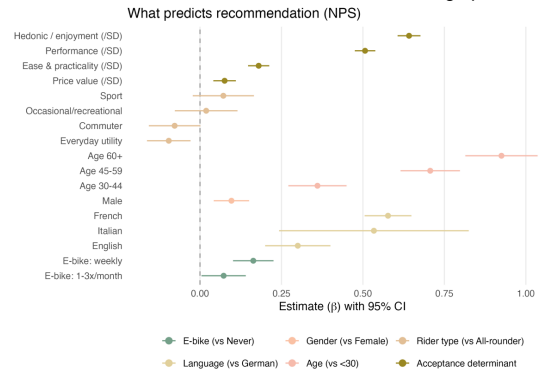


Fig. 6 Coefficients from a linear model of likelihood-to-recommend on the UTAUT2 acceptance factors and participant characteristics (R<sup>2</sup> = 0.43).