Applying gamification to improve quality of life

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Applying gamification to improve Quality of life

Exploration of the effectiveness of a game that empowers users to improve their quality of life

Trends
Urbanization, population growth, climate change, lifestyle diseases (e.g., obesity), increasing gaps are trends that potentially threaten quality of life.

Challenge: Empower people to improve their quality of life

The municipality of Eindhoven aims to offer tools that empower people to improve their quality of life.

Problem investigation
Quality of life is the degree of excellence of life

People
Planet
Prosperity

Quality of life

Tools
Serious games are games in which education is the primary goal, rather than entertainment.

Gamification is the application of game design elements and principles in non-game contexts.

The municipality of Eindhoven commissioned this research to evaluate the effectiveness of games as a tool to empower people to improve their quality of life.

Solution design
Goal: design a game that empowers users to improve perceived health and decrease their ecological footprint.

Perceived health (people) and ecological footprint (planet) are chosen as antecedents of quality of life.

The challenges are hosted by a service provider, the platform GameBus. The best-performant users have a chance to win an appealing prize.

Solution implementation
Target audience
Anybody who lives or works in the city of Eindhoven.

The marketing campaign has been aimed particularly at government officials of the municipality of Eindhoven and students of Eindhoven university of Technology.

Sample (n = 16)
Quasi-experimental research design, including pre- and post-tests for both the experimental group (n = 9) and control group (n = 7).

Pilot planning

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<tbody>
<tr>
<td>Recruit</td>
<td>Pre-test</td>
<td>Challenge 1</td>
<td>Move Consciously</td>
<td>Challenge 2</td>
<td>Green &amp; Smart, Blue &amp; Healthy</td>
<td>Post-test</td>
<td>80%</td>
<td>8%</td>
<td>10%</td>
<td>2%</td>
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Quality of life

People
Planet
Prosperity

Distribution of user activity per type
- 80% walking / cycling
- 8% working-out (physical)
- 10% social activity
- 2% “green” commuting

Challenge 1
Move Consciously

Challenge 2
Green & Smart, Blue & Healthy

Implementation evaluation
Methodology
Case study design, including quantitative analysis of current and future state.

Results
To enhance the game it is advised to simplify the game. Approximately 87% of non-value added time that has previously been required to play the game can in the future be made obsolete, e.g. by implementing an automated activity tracker.

Furthermore, it is advised to allow users to review (and “down-vote”) the activities that others have claimed, in order to increase perceived fairness.

Solution validation
Methodology
Quantitative analysis using multiple linear regression.

Results
Compared to the control group, the mobility ecological footprint of experimental subjects increased, instead of decreased. (p < 0.05)

Compared to the control group, bodily functions and social participation of experimental subjects improved. (p < 0.05)