How can Innovative, People-Centered Data Collection contribute to improved Cycling Planning and Policy?

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The global framework

Access to Mobility for All (mentions Cycling 5 times)

End poverty, protect the planet, and ensure prosperity for all

NDC’s to reduce transport emissions

- Cycling contributes to all Global Commitments: Zero Emission Mobility, Inclusive Mobility, Ensures Access, Reduces Congestion, Improves Health etc.
- Data is a vital tool for better cycling policies and planning
- Monitoring mechanisms of cycling action essential

>> Need for National Commitments/ Local Action to “make cycling happen”
Mutually Reinforcing Governance Levels: Implementing Sustainable Urban Mobility

**Neighborhood Level**
- Pilot projects; cycle events; bike share

**City Level**
- Guidelines and Tools; Rapid City Diagnostics; Field demonstration Projects; SUMP; Local Mobility Policies; Capacity development;

**Reg. Level**
- Metropolitan Transport Planning;

**Nat. Level**
- National Policy Dialogue; Capacity Building; National Policy formulation on Urban Mobility.

**Global Level**
- Habitat III, SDGs, Paris; Regional and International Dialogue and Coordination; UN-Habitat Governing Council; WUF; VeloCity; ITF; etc.

**Mutually reinforcing Levels:**
- Local Action creates demand for cycling & informs Nat. Mobility Plans
- National Mobility Policy can trigger local investment in cycling
- International Commitments can identify Nat. policy gaps and push for Local and National Action
Promoting the importance of innovative, human-centered data for better cycling policies and planning
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An Example from Kuala Lumpur during WUF 9
We wanted the World Urban Forum to became an inspiring and fun “living lab example” of the potential to Cycle for Change.
Bicycle Lane Opening during WUF 9
New partnerships with tech start ups

City of Kuala Lumpur (DBKL)

Air Quality Monitoring Network

Attention of Cyclists through biosensor data

MULTIMER
Initiating the Project on Air Quality Monitoring at the City of Kuala Lumpur
Setting up the pilot Air Quality Monitoring devices
Open Data Map – available Real Time

Open Map available at: https://openmap.clarity.io
Real-time air quality data was livestreamed as part of a living lab at the Urban Brain Bamboo Pavilion for the duration of WUF9.

Engagement Forum participants and local residents on data-driven solutions to urban challenges // advocacy

Legacy to KL with continued monitoring efforts // informed planning and decision-making
Multimer Data recording attention levels

- Multimer helps organizations quantify population sentiment in any given place.
- Offering kits to measure, monitor, visualize, and analyze biosensor data continuously, over long time periods and large scales.
- Recording human signal (brainwave, heart rate, and in-app survey) data from cyclists as they cycled on or near the new cycling route in downtown Kuala Lumpur.
- Measuring “attention” and “relaxation” (brainwave frequencies).
Measurements recorded on new cycling lane

The color code is a gradient in which

- **green** indicates areas of high relaxation and low attention
- **yellow** indicates areas of medium-high attention and medium-high relaxation
- **brown** indicates areas of low relaxation and attention
- **orange** indicates areas of low relaxation and medium-high attention
- **red** indicates areas of low relaxation and high attention.

- **green** tends to correlate with “relaxing” routes: limited traffic, good design, trees, parks etc.
- **red** tends to correlate with “stressful” routes: vehicular traffic, highways, high speed, tunnels etc.
Comparison Cycling Route vs. Regular Street

- Revealing that the cycling route has more green dots than on regular streets
- Potentially achieving planners’ goals for cycling routes to be less stressful, more relaxing, and more safe
Filtering Hotspots and Sweetspots

Filtering:
- **hotspots** (where participant attention $\geq 70$ and relaxation $\leq 30$) and
- **sweetspots** (where participant relaxation $\geq 70$ and participant attention is $\leq 30$).

Data illustrates benefits of cycle lane but also proposes additional design features.

Need for Larger Studies and Data Optimization. Dataset collected for this study was less than 50,000 points.
UN-Habitat’s efforts to showcase the impact of pedestrianization on air pollution

- An Example from Kampala, Uganda
Open Street Activity – Kampala

January 2018 – Luwum Street, Kampala
Visualization of PM2.5 particles in the air

Partnership between:
- Kampala Capital City Authority (KCCA)
- UN-Habitat
- University of Birmingham / Visual Artist

→ Using a custom built digital light painter and wearable particulate sensor, the artist takes long exposure photographs
→ Measuring the impact of pedestrianization on air pollution
→ Helping people understand the pollution level
Take - Aways

- Data empowers policy-makers to make informed, demand-driven decisions on transport policies, planning, infrastructural development, and funding streams.
- Development of technology should be coupled with the intent of its patrons to implement solutions that are applicable, inclusive, and impactful.
- Identify good models of PPPs - Genuine purpose and relevant innovation should determine partnerships with tech companies.
- Data is a vital tool in decision making processes, from the city planning level down to commuter choice.
- Human-Centered Data can complement conventional data sets.
- Data is the main ingredient for successful advocacy efforts / Simple Messaging is important.
- Data collection efforts can enable innovation in (data-scarce) Cities >> growing willingness of institutions to use tech.
Thank you

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