



Lagos, Nigeria.

Image: GIZ

Data as a force to shape future urban mobility

Bridging the data divide to shape a just digital transformation for climate-friendly urban mobility

Urban mobility, Data, Digital transformation, Data literacy

The sheer volume of data collected has grown exponentially. But particularly in developing and emerging countries, major gaps in availability, quality and usability of data lead to a lack of significant resources necessary to face the complex urban challenges. The Transformative Urban Mobility Initiative (TUMI) – funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) – believes that for cities, data is a crucial enabler to make better as well as more informed decisions about sustainable mobility. With the development of an Urban Mobility Data Hub, TUMI is working together with its partners on making mobility data available for 40 cities in Africa, Latin America and Asia to shape the digital transformation of urban mobility in a climate-friendly way.

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Urban development and transport are inseparably interconnected. Cities are growing rapidly, leading to overall growth in travel demand. Reaching a certain degree of saturation in industrialized countries, urban

and transport development is progressing in other regions of the world with an enormous dynamism. Especially in developing and emerging countries unplanned urban growth is a challenge for achieving sustainable urban mobility.

To shape future mobility in a climate-friendly way, it is crucial for cities to understand their complex mobility ecosystem. This is where data analysis and visualization play a key role, which is the only way to anticipate the need for mobility services at an

early stage and respond accordingly. Mobility data thus enable well-founded policy and investment decisions so that transport modes can be efficiently adopted and used.

Gaps in coverage, quality, and usability of data

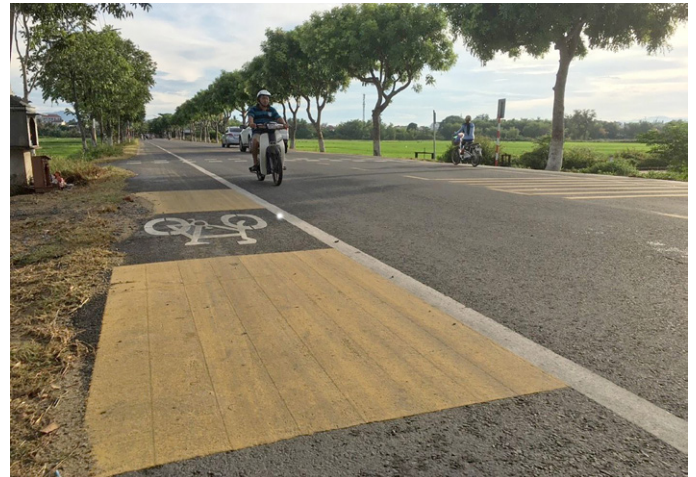
Lately, the digital revolution has led to the fact that the accessibility of data has greatly increased, as well as how easy information can be spread. But developing and emerging countries are being left behind. Despite the value of public intent data, particularly in developing and emerging countries, gaps in their availability, quality, and usability persist. For example, 35 percent of the world's largest cities and 92 per cent of the largest low- and middle-income cities do not have complete land use or transportation maps [1]. Conventional land use maps, which divide the earth's surface into categories such as "forest", "water" or "tundra", often group urban areas into a single category – such as "urban" or "built-up" – and thus do not reflect the complexity of urban spaces. OpenStreetMap, a citizen generated geo-spatial application that relies on users to digitize the location of roads and other infrastructure, shows a clearly lower coverage in lower income countries. In India, only 21 percent of the road network had been digitized by 2015. Additionally, adaptation of technologies such as ground-based sensors, which can measure air pollution or climatic conditions, is still too limited to provide data at scale. [2]

Detailed data on movement patterns and mobility offers exist partially, although timeliness remains particularly an issue with survey and census data. [3] In addition to this, it is often not accessible to decision-makers. Often, cities lack the know-how on how to make use of this data and incorporate it into the practices of local governments. There is a lack of concrete, data-based application examples to make the CO₂ reduction and scaling potential in this area tangible.

TUMI AT A GLANCE

The Transformative Urban Mobility Initiative (TUMI) is implemented by GIZ and funded by the German Federal Ministry for Economic Cooperation and Development (BMZ). TUMI is the leading global implementation initiative on sustainable mobility, formed through the union of 11 prestigious partners. TUMI's vision is thriving cities with enhanced economic, social and environmental performances in line with the New Urban Agenda, the Agenda 2030 and the Paris Agreement. TUMI is based on three pillars: innovation, knowledge, investment.
Website: www.transformative-mobility.org

Hoi An, Vietnam
Image: GIZ



What TUMI is doing to bridge the data divide

Bridging the digital divide is a social and economic imperative. In cooperation with the Latin American Development Bank (CAF), TUMI is developing a virtual Mobility Data Hub, where open data relevant for urban and transport planning will be made accessible. A key component of the hub is the cooperation between TUMI and ETH Zurich. Developed by students at the university, high-resolution satellite data are being converted into a physical representation of the city with the help of artificial intelligence and thus made usable for decision-makers and planners in urban and mobility development. These data will be supplemented by mobility data from different sources (e.g. phone data, GTFS, GPS, LiDaR) to form a comprehensive data basis for integrated transportation and mobility planning. Another important data input will be the collection of gender-specific data, which is currently being collected in three African cities under TUMI's Women Mobilize Women Initiative. TUMI is committed to highlighting socioeconomic and gender-specific data biases at an early stage.

The final element will be to pilot the use case in three cities, putting the Data Hub to use. TUMI will work closely with three cities to assist in their mobility planning through the use of the data hub. We will jointly work to utilize the advantages of data driven city planning, transport development as well as digitization of information. This will test and improve the versatility of the tool just built. Further engagement with the tech world will be adopted with localized and innovative demonstration activities such as Hackathons or Design Thinking Workshops with the with local Stakeholders.

If cities miss out on the digital revolution, they risk to lose in the transformation and adaptation to climate resilience in sustainable mobility. TUMI is seeking to build

the future of qualified experts and decision-makers to drive the change needed in every city. Improving digital literacy and providing relevant skills to the respective government employees to make data-based, sustainable decisions in the field of transportation and mobility planning is thereby key.

Only if we make data available for all people, we can improve the quality of life in our cities and allow policy makers to make data-driven decisions in order to provide citizen with more efficient and sustainable mobility services for a more liveable, resilient and inclusive city. ■

Please get in contact with TUMI if you would like to hear more or get involved in this project:
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