eMOTIONAL Cities is a Horizon 2020 project that is designed to fully characterise the intensity and complexity of urban health challenges and inequalities.

www.emotionalcities-h2020.eu

VISION

The vision for eMOTIONAL Cities is to understand, assess and evaluate health outcomes of different built environments in urban areas using new methods and tools that capitalize on the synergistic combination of urban planning and design, neuroscience, as well as technology and data science. This approach will produce novel city mapping with geospatial data (physical environment, socioeconomic, mobility, outdoor comfort and health determinants) combined with the cognitive and emotional representations of the people who experience and navigate such an urban environment. A set of cities across Europe (Copenhagen, Lisbon, London) and the USA (Lansing or Detroit, Michigan), with different genesis, evolutions, designs and policies will be part of our geographic case studies; and a clinical study with an elderly population at risk of developing dementia will be our proof of concept that urban planning and design can help people with vulnerabilities to move in space.

AIM

The overall aim of this project is to provide robust scientific evidence on how the natural and built urban environment shapes the neural system underlying human cognitive and emotional processing, with a perspective that also incorporates age, gender and vulnerable groups’ specificities. Furthermore, it has the goal to map such neurobiological reactivity through time and space as the urban landscape change. Grasping the spatial cognition of the citizens’ behaviour and decisions while interacting with their real-life surroundings will be a breakthrough, as it will foster more inclusive urban design resulting in better individual health and well-being. The way public spaces are designed, the urban typology of cities, the architecture of buildings, the circulation and mobility of transport systems, the existence of greenery and urban parks, the liveability and vibrancy of cities, all matter when it comes to people’s feelings and ways of experiencing their environment thus influencing their health.
SPECIFIC OBJECTIVES

Identify policy-relevant research questions and develop a "eMOTIONAL Cities conceptual framework" for linking urban environment, neuroscience and physical/mental health and well-being.

Apply geospatial analytics, through quantitative and qualitative methodologies, to four different urban case studies, across two continents (three in Europe and one in the US), in order to determine critical urban area characteristics, as well as to map physical environments, socio-economic characteristics, mobility patterns and geo-tagged social media (Twitter and Instagram) determinants of health.

Combine controlled laboratory experiments with field ecological research by directly capturing peoples physiological and neurobiological responses while interacting with specific urban artefacts.

Collect and analyse both geospatial and neuroscience data paying specific attention to vulnerable groups, age and gender aspects, in order to identify barriers and facilitators of urban spaces that are truly inclusive.

Create an open spatial data infrastructure (SDI) capable of integrating multisource heterogeneous geospatial and neuroscience datasets and time series information.

Integrate statistical data and geospatial descriptions with contextual neuroscience information to generate evidence-based knowledge on how the natural and built environment, as well as the social fabric, affect cognitive and affective well-being.

Provide insights and policy-related recommendations to improve the physical and mental health and well-being in cities by leveraging the project's evidence-based knowledge with machine learning-based scenario discovery.

Promote the education on healthy cities and urban design practices, based on interdisciplinary knowledge that combines data from social sciences with natural and medical sciences (neuropsychiatry and neuroscience).

Raise awareness on how the built environments relate with human senses and shape emotions and health, fostering citizens to act and request for better policies that address well-being.

Ensure project sustainability after its conclusion.

EXPECTED IMPACTS

More robust evidence for policy making on improved urban health in the EU

Improved population health, physical and/or mental, in urban areas of the EU

Reduce health inequalities in urban areas
eMOTIONAL Cities

MAPPING THE CITIES
THROUGH THE SENSES OF THOSE WHO MAKE THEM

eMOTIONAL Cities is a Horizon 2020 project that is designed to fully characterise the intensity and complexity of urban health challenges and inequalities.

VISON

The objective of eMOTIONAL Cities is to understand, assess and evaluate health outcomes and children’s built environments in urban areas using new methods and tools that capitalize on the synergies of urban planning, and design, architecture, as well as technology and data science. This approach will provide novel city mapping with geospatial data, including environments, sociocultural, mobility, outdoor comfort and health determinants combined with the cognitions and emotional representations of the people who experience and navigate such urban environments.

A set of cities across Europe (Kopenhagen, London, and the USA, Lansing or Detroit, Michigan), with different geographies, economies, designs and cultures will be part of our geographic case studies and clinical study with an elderly population at risk of developing dementia. We will use a tool of the project that can be used in cities around the world.

AIM

The overall aim of this project is to provide robust scientific evidence on how the natural and built urban environment shapes the neural system underlying human cognitive and emotional processing, with a perspective that also incorporates age, gender and vulnerable group specifics. Furthermore, it has the goal to map such neurobiological novelty through time and space as the urban landscape changes. Gaining the spatial cognition of the citizens’ behaviour and decisions while interacting with their environment will be a breakthrough, as it will foster more inclusive urban design resulting in better individual health and wellbeing.

The way public spaces are designed, the urban typology of cities, the architecture of buildings, the circulation and mobility of transport systems, the experience of greenery and urban parks, the livability and vibrancy of cities, all matter when it comes to people’s feelings and ways of experiencing their environments that influencing their health.

SPECIFIC OBJECTIVES

Identify policy and urban design strategies that engage a MOTIONAL Cities perspective on environmental, architectural, and psychological research, including

- Analyze urban design, environmental and sociocultural aspects to form specific urban areas in relation to urban planning
- Analyze, research, develop and implement evidence-based solutions to improve health in urban areas

Expected Impacts

More robust evidence for policy making on improved urban health in the EU

Improved population health, physical and mental, in urban areas of the EU

Reduced health inequalities in urban areas

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