



2024 Master internship at University of Gdańsk



TITLE:

Fundamental Power of City – new model and index for city development

LAB & PEOPLE

- Name of the hosting lab: Department of Investment and Real Estate and Department of Statistics
- General activities of the lab:
Department of Investments and Real Estate is formed by academic and research staff members, whose main goal is to carry out research and share knowledge in the following areas:
 - preparation and assessment of investment projects' profitability,
 - capital and money market,
 - financial investments
 - financing of investments,
 - investment in real estate markets,
 - investment in non-material values,
 - investment strategies of enterprises,
 - real estate management,
 - the commercialisation of real estate,
 - valuation of real estate and enterprises,
 - real estate trade agencies,
 - real estate market analysis,
 - risk management,
 - innovation investment,
 - city development.

Department of Statistics formed by academic and research staff members, whose main goal is to carry out research and share knowledge in the following areas:

- random sampling (application in market research and surveys),
 - multivariate statistical analysis (data classification methods, including artificial neural networks, Big Data),
 - topics in insurance (actuarial methods in general insurance, life insurance, retirement insurance, healthcare insurance, occupational pension schemes),
 - risk management (general insurance in risk management of small and medium enterprises, application of survival analysis, logistics regression and scoring method for insurance risk assessment and risk in social and economic life),
 - statistical analysis of a labour market.
- Website:
<https://wzr.ug.edu.pl/inwestycje/>, <https://wzr.ug.edu.pl/statystyka/>
 - Number of staff / Ph.D.: 9/7 (Investment and Real Estate) ; 14/11 (Statistics)

- Supervisor name and contact: Assoc. Prof. Anna Wojewnik-Filipkowska anna.wojewnik-filipkowska@ug.edu.pl, Ph.D. Anna Gierusz-Matkowska anna.gierusz-matkowska@ug.edu.pl

TOPIC OF THE INTERNSHIP

Scientific context of the internship (max 20 lines):

Managing a dynamic and complex urban system according to the single concepts of city development is insufficient. A **sustainable city** is a city that develops in accordance with the concept of sustainable development. Sustainable development means integration and sustainability of the economic, social, and ecological dimensions of the city. Because the characteristic of all resources is their exhaustion, cities in the process of sustainable development must act wisely, also using the latest technologies, and managing limited resources within the urban economy, people, governance, mobility, environment, and life. This refers to the **smart city** concept. Furthermore, city management should also allow for maintenance or return to the path of development after economic, social, or environmental shocks. The **resilient city** enables to self-organize on the social, economic, institutional, and infrastructural levels. Ultimately, the Fundamental Power of a City is determined by city sustainability, smartness, and resilience. The result of this specific "synthesis" is conceptualized by the concept of the Fundamental Power of the City and operationalized by the corresponding Index.

Keywords: city development, management, linear ordering, composite indicator

Bibliography :

- Giffinger, R., & Gudrun, H. (2010). Smart Cities Ranking: An Effective Instrument for the Positioning of Cities? *ACE Architecture: City and Environment*, pp. 7–25.
- Huovila, A., Bosch, P., & Airaksinen, M. (2019). Comparative analysis of standardized indicators for Smart sustainable cities: What indicators and standards to use and when? *Cities*(89), pp. 141-153.
- Kitchin, R., Lauriault, T. P., & McArdle, G. (2015). Knowing and governing cities through urban indicators, city benchmarking and real-time dashboards. *Regional Studies, Regional Science*, 2(1), pp. 6-28.
- Przybyłowski, A., Kałaska, A., & Przybyłowski, P. (2022). Quest for a tool measuring urban quality of life: ISO 37120 standard sustainable development indicators. *Energies*.
- Schravena, D., Jossb, S., & Jongcd, M. (2021). Past, present, future: Engagement with sustainable urban development through 35 city labels in the scientific literature 1990–2019, *Journal of Cleaner Production*.
- Sharifi, A., & Allam, Z. (2021). On the taxonomy of smart city indicators and their alignment with sustainability and resilience. *Environment and Planning B: Urban Analytics and City Science*.
- Stiglitz, J. E., Fitoussi, J.-P., & Durand, M. (2019). *Beyond GDP Measuring What Counts for Economic and Social Performance*. OECD Publishing.
- Wendling, L. A., Huovila, A., Huovila, A., Castell-Rüdenhausen, M. z., Castell-Rüdenhausen, M., & Airaksinen, M. (2018). Benchmarking nature-based solution and smart city assessment schemes against the sustainable development goal indicator framework, *Frontiers in Environmental Science*.

- Wojewnik-Filipkowska, A. (2017). Rationalisation of Investment Decisions in the Sustainable Management of Urban Development; is a New Paradigm Needed? *Problems Sustainable Development*, 12(1), pp. 79–90.

- Tasks and duties entrusted to the student:

The methodology of the Fundamental Power of City Index can be applied to both small and big cities. The variables in the Index have been selected based on the relevant literature in reference to the sustainability, smartness, and resilience assessment. In particular, variables measuring the sustainability of the city were based on the 17 Sustainable Development Goals, research conducted by Giffinger et. al. (2010; 2007) was the main inspiration for smart city variables. The intern's task will be to verify the concept assumptions, verify the availability of the data and collect them for selected cities. Based on public statistics, the literature on the subject, and available documents, the student will prepare preliminary descriptive statistics for the variables of sustainable, smart, and resilient cities and apply selected methods of linear ordering.

- Skills to be acquired or developed:
 - analytical and research skills
 - written and oral communication,
 - the critical approach to the subject of study
 - ability to plan, organise and prioritise work
 - paying attention to detail
 - quantitative skills will be an advantage

PROFILE OF THE DESIRED STUDENT

- Minimum level of study required: Master 1
- Field(s) of study: urban planning, management, economics, statistics, econometrics, IT
- Scientific skills: writing and analysis skills, scientific curiosity for the subject matter
- Language skills required: English level B2

THE INTERNSHIP ASSIGNMENT:

Desired duration of the internship (in months): 2 months

Desired Starting date of the mission: January/April 2024

Indicative weekly schedule: *20 h / week*

The Intern can apply for Erasmus grant from home university

Remuneration: 0 €/month

Internship agreement: *an internship agreement will be signed.*

To SEA-EU students:

*If you're interested please send your CV and letter of motivation to the scientist in charge, email:
anna.wojewnik-filipkowska@ug.edu.pl before 30/11/2023*