

ASSESSING THE DIGITAL CAPACITY OF TERRITORIAL COMMUNITIES OF UKRAINE IN THE CONTEXT OF DIGITAL TRANSFORMATION

KOMARNYTSKA Hanna

Doctor of Economics, Professor,

Head of the Department of Public Administration and Business Management

Ivan Franko National University of Lviv

ORCID ID: <https://orcid.org/0000-0002-5533-6439>

KOMARNYTSKYI Ihor

Logistics Specialist, OKKO Group

ORCID: <https://orcid.org/0009-0001-7117-613X>

Abstract. *The article develops a methodological approach for the integrated assessment of the digital capacity of Ukrainian territorial communities using open data. A six-component index with min-max normalisation, entropy weighting, and additive aggregation is proposed; the conditions of applicability are substantiated, and the design of empirical validation for the communities of Lviv oblast is outlined.*

Keywords: *digital capacity, territorial community, administrative reform, digital transformation, open data, integral index, entropy weighting, local self-government.*

The article develops a methodological approach to the comprehensive assessment of the digital capacity of Ukrainian territorial communities, based on official open data, enabling comparison among communities and tracking their digital development over time. International indices are oriented toward the national or large-city level, whereas the national instruments of the Ministry of Digital Transformation of Ukraine rely on self-reported data and revise their indicators annually, which limits comparability over time and fails to isolate organisational capacity and staff digital competencies as distinct, weighted components.

The proposed Digital Capacity Index of a Territorial Community combines six components — digital infrastructure, digital services, open data, e-democracy, organisational capacity, and staff digital competencies — using min-max normalisation, entropy weighting, and additive aggregation. Its novelty lies in a reproducible methodology that integrates technological, organisational, and human dimensions, applies objective weighting rather than expert judgement, and yields a single index for inter-community comparison. The conditions of applicability and sensitivity analysis of the ranking are substantiated; the design of the empirical validation is outlined for the communities of Lviv oblast. The methodology complements the national monitoring instrument and is suitable for regional digital development policy.

Reference:

1. United Nations Department of Economic and Social Affairs. (2024). UN e-government survey 2024: Accelerating digital transformation for sustainable development. United Nations.
2. Mergel, I., Edelman, N., & Haug, N. (2019). Defining digital transformation in government. *Government Information Quarterly*, 36(4), 101385. <https://doi.org/10.1016/j.giq.2019.06.002>
3. Gil-Garcia, J. R., & Flores-Zúñiga, M. Á. (2020). Towards a comprehensive understanding of digital government success: Integrating implementation and adoption factors. *Government Information Quarterly*, 37(4), 101518. <https://doi.org/10.1016/j.giq.2020.101518>
4. Ministry of Digital Transformation of Ukraine. (2024). Results of digital transformation in the regions of Ukraine for 2024: Regional Digital Transformation Index and Community Digitalisation Index. <https://thedigital.gov.ua>
5. OECD, European Union, & Joint Research Centre — European Commission. (2008). Handbook on constructing composite indicators: Methodology and user guide. OECD Publishing. <https://doi.org/10.1787/9789264043466-en>
6. Meijer, A., & Bolívar, M. P. R. (2016). Governing the smart city: A review of the literature on smart urban governance. *International Review of Administrative Sciences*, 82(2), 392–408. <https://doi.org/10.1177/0020852314564308>
7. Shannon, C. E. (1948). A mathematical theory of communication. *Bell System Technical Journal*, 27(3), 379–423. <https://doi.org/10.1002/j.1538-7305.1948.tb01338.x>
8. Zeleny, M. (1982). Multiple criteria decision making. McGraw-Hill.
9. World Bank. (2022). GovTech Maturity Index, 2022 update: Trends in public-sector digital transformation. World Bank. <https://doi.org/10.1596/978-1-4648-1962-9>
10. Criado, J. I., & Gil-García, J. R. (2019). Creating public value through smart technologies and strategies: From digital services to artificial intelligence and beyond. *International Journal of Public Sector Management*, 32(5), 438–450. <https://doi.org/10.1108/IJPSM-07-2019-0178>
11. Komarnytska, H. O. (2025). Smart City in the system of open data and e-governance. *Public Administration Aspects*, 13(3), 92–99. <https://doi.org/10.15421/152535>
12. Komarnytska, H. O., & Shaievska, A. V. (2024). Mechanisms of social and humanitarian development of territorial communities (the case of the Kalynivka urban territorial community). *Public Administration and Administration in Ukraine*, (44), 319–324. <https://doi.org/10.32782/pma2663-5240-2024.44.53>

Дата надходження статті: 07.07.2026

Дата прийняття статті: 28.07.2026

Дата публікації статті: 30.09.2026