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BUILDING SMART REGIONS THROUGH SMART CITY DEVELOPMENT: A STRATEGIC FRAMEWORK FOR SERBIA

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Abstract: This research investigates the transformation of smart cities as the main driving force for the development of smart regions in the Republic of Serbia, based on the NUTS 2 territorial classification framework, which is fully aligned with the methodology of the European Commission and Eurostat. The research applies a hybrid AHP-SWOT-TOWS methodology, combining quantitative and qualitative methods in order to reduce subjectivity and define strategic priorities in the development perspective. The analytical hierarchy process is used as a useful tool for determining the relative importance of internal and external factors, while SWOT and TOWS analyses are used for the purpose of their operational integration. The results obtained demonstrate the importance of financial stabilization, digital infrastructure integration, institutional capacity building and transparent governance as basic pillars in the process of regional transformation. The study provides a structured framework for balanced and inclusive regional development in Serbia. Emphasis is placed on the need for further operational elaboration and measurable parameters for implementation.

Keywords: smart cities, smart regions, Serbia, regional development, AHP–SWOT–TOWS.

1. INTRODUCTION

Modern urban development is increasingly based on the concept of smart cities, which entails the systemic integration of digital technologies, sustainable resource management and active participation in the governance model with the aim of continuously improving the quality of life of the population. Regardless of the fact that the concept of smart cities is of vital importance for modern urban development, its full potential is realized only through broader connectivity and the formation of larger territorial units, smart regions. In the continuation of

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the research, we will examine the definitions of these two concepts (smart cities and smart regions), which are functionally largely interconnected. This connection is a consequence of the view that the development of technologically advanced and managerially efficient urban centers represents a more than good basis for broader spatial networking, coordination of resources and the formation of integrated regional systems based on knowledge and innovation.

According to Giffinger et al. (2007), a smart city is an urban system that ensures sustainable economic progress and a high quality of life through the successful functioning of key development areas, such as economy, mobility, environmental protection, human resources, governance and housing conditions. It relies heavily on developed human and social capital, as well as on modern information and communication infrastructure. Gifinger's definition is one of the widely cited definitions of a smart city.

According to the European Commission (2014), a smart city is an urban entity that applies digital technologies and innovative solutions to improve the lives of citizens, use resources more efficiently and improve public services. The concept of a smart city largely encourages sustainable and inclusive economic development, with a particular focus on technology: in transport, energy, waste management, healthcare and participatory governance processes. On the other hand, a smart region is a territory where people, through the application of technology, strive to solve tasks and challenges, improve the quality of life and strive to improve services in the areas of administration, transport, infrastructure and economy. All of the above implies the reorganization of numerous processes and the adoption of long-term decisions that are sustainable in nature. This would, for example, imply a complete rethinking of transport systems with the aim of making mobility, whether public or private, more efficient, sustainable and adapted to the future needs of residents (Bauer et al., 2019).

From the above, it can be concluded that smart cities by their nature represent the basic building blocks or cells of a smart region. The region, in turn, enables coordinated and integrated development at a higher spatial level with the aim of integrating urban, suburban and rural communities in order to achieve the effects of improving sustainability, connectivity and regional governance with the help of technology (Wendt-Lucas et al., 2025).

The goal of this research is to position Serbia in the context of European integration and digital transition, as well as to explore how the development of smart cities can serve as a cornerstone for the formation of smart regions in Serbia.

2. LITERATURE REVIEW

A city can be seen as a very complex system consisting of several interconnected parts. These units are characterized by a unique history and a unique social and ecological environment. Actors important for the functioning of the city must make efforts to cooperate and rationally use all available resources. The goal is to use the full potential of the city in terms of overcoming challenges and detecting new opportunities. The term "smart city" largely refers to the ability of a city to unite all its resources in an efficient manner, and to realize its goals and fulfill the set tasks with as few obstacles as possible (ISO/IEC, 2015).

The concept of smart implies a complex multi-layered architecture. Today, it does not imply the mere application of information and communication technologies, but also includes the characteristics of people and communities. Numerous studies unequivocally indicate a fairly large number of elements and different dimensions that define a smart city. The result is the fact

that the measurement methodology is very complex. Despite serious efforts to create universal indices, the assessment of "smartness" itself necessarily needs to be adjusted to the vision and priorities that are characteristic of a particular city. It is simply extremely difficult to establish a completely universal model that is applicable to all cities. It should also be noted that many ranking systems tend to simplify the complexity of smart cities, thereby losing some of the key information (Albino et al., 2015).

According to the published study "Smart Cities: Ranking of Medium-Sized European Cities" by Rudolf Gifinger et al. (2007), a smart city can be viewed through the prism of six dimensions:

- Smart Economy (competitiveness, innovation, entrepreneurship and market participation).
- Smart People (education, social inclusion and openness).
- Smart Governance (citizen participation and efficient administration).
- Smart Mobility (accessibility, ICT and sustainable transport).
- Smart Environment (environmental quality and nature protection).
- Smart Living (quality of life - health, culture, safety, etc.).

A total of 33 factors have been defined to measure these characteristics. According to the IMD Smart City Index 2025, smart cities can be ranked based on the perceptions of 120 residents in each of 146 cities around the world. The ranking result is based on indicators available in the last three years, with a weighting factor of 3:2:1 (2025:2024:2023). The index includes two main pillars. One includes structures related to existing infrastructure. The second pillar represents technologies related to available technological solutions and services. The assessment of both pillars is based on the areas of health and safety, mobility, activities, opportunities and governance (IMD World Competitiveness Center, 2025).

The Cities in Motion Index is a global ranking developed by IESE Business School. The index provides a clear assessment of the sustainability and development of cities around the world. It is a very useful tool for comparing cities and guiding strategic planning since it is based on a large number of carefully collected data. The index includes nine dimensions: economy, human capital, social cohesion, environment, governance, urban planning, international profile, technology and mobility. The main task is to balance economic development with social equity and environmental sustainability (IESE, 2025).

The concept of a smart city can be replicated at the regional level to the greatest extent possible. It should be noted that investments made in this direction significantly improve infrastructure and create incomparably more favorable conditions for innovation and development. The strategy on which urban development is based, and whose role is to respond to the challenges of accelerated urbanization, requires smart solutions in the regions as well. This undoubtedly results in reducing the pressure caused by the growth of urban areas. Its ultimate outcome is the achievement of the basic goal, which is embodied in improving the quality of life of residents. Completely new opportunities for the economy arise as a result of smart solutions at the regional level. The implementation of the aforementioned smart solutions has a largely positive impact on the employment of young and qualified personnel, which is reflected in the fact that talented youth continue their lives in their home region, instead of migrating to a larger urban environment (Mazza & Mavri, 2019).

Matern et al., (2020) perceive smart regions as diverse urban and rural areas that are predefined and shaped by digital technologies and social practices. This shaping is materialized

through various areas such as economy, governance, infrastructure, mobility and environment. The idea of smart regions is based to the greatest extent possible on the basic assumption that space itself is not static. Such an environment actually emerges as a result of the dynamic interaction of people and their networks. Successful regional development requires an integrated approach in which actors jointly shape and continuously improve their regions. The European Cities and Regions of the Future 2024 ranking examines and compares the most desirable destinations in Europe in terms of investment opportunities. The comprehensive study covers 330 cities divided into five size groups. The same study also covers 141 regions, as well as 38 local business partnerships in the United Kingdom. Performance is assessed on the basis of five subcategories: economic potential, business attractiveness, connectivity, human capital and lifestyle, and cost-effectiveness. Surveys of European investment promotion agencies were used for a specific category concerning foreign direct investment strategies (fDi Intelligence, 2024).

The Regional Innovation Scoreboard (RIS) is a regional extension of the European Innovation Scoreboard (EIS). Its main purpose is to assess the innovation performance of European regions when working with a limited number of indicators. The RIS 2025 version has the ability to compare the performance of innovation systems in 241 EU regions. Evaluation is also possible in countries outside the EU framework such as Norway, Serbia, Switzerland and the United Kingdom, while Cyprus, Estonia, Latvia, Luxembourg and Malta are included at the country level. The RIS complements the EIS in every respect, whose role is to annually assess the innovation performance of national systems in the EU and other European countries, also taking into account individual countries at the global level (European Commission, 2025a).

The Regional Innovation Scoreboard (RIS) aims to measure the innovation performance of regions using a framework similar to the European Innovation Scoreboard (EIS), but relies on 23 out of 32 indicators exclusively due to limited regional data. The RIS assesses frameworks that proactively foster innovation. These frameworks include education, research and digital capacities, as well as public and private sector investments, incorporating research and development, cloud services and ICT expertise (European Commission, 2025b).

The Regional Innovation Scoreboard (RIS) assesses the innovation performance of regions in four key areas. The first area is frameworks that foster innovation. Its specificity is that education, research and digital capacities work together to enable the development of new solutions. The second area covers investments by assessing resources directed towards research and innovation from the public and private sectors. It includes the use of cloud services and ICT experts. The third area focuses on innovative activities of enterprises and they are observed through the prism of the introduction of new products and processes, collaboration, commercialization of inventions and the number of patents, trademarks and designs. Finally, RIS also assesses the direct impact of innovation on employment, income, trade, environmental sustainability and productivity. All of this has the effect of emphasizing the importance of the link between innovation and economic development and environmental sustainability (European Commission, 2025b; Antanavicius et al., 2025).

Smart cities are certainly the primary focus of the research, but it is important to note that there is a bigger picture. For example, despite the increase in urbanization in Germany, 57% of the population lives in rural areas that occupy a large part of the territory. This is precisely the reason for the approach according to which a smart city must also encompass the wider region. In this way, it provides solutions for those living outside the city, while at the

same time strengthening rural areas as places to live and work. The region encompasses a large number of different actors who are proactively involved in the functioning of the region. These actors include universities, private and municipal companies, civil society, political and administrative institutions, industry, crafts, etc. Increasing digital connectivity requires thinking within the existing framework, but also provides the necessary prerequisites for expanding actor networks (Poppe, 2023).

The term "smart region" refers to a strategy that aims for digital transformation and sustainable development not only in cities, but also in rural areas. Smart regions, unlike smart cities, require a coordinated and multi-layered approach to reduce the gap between urban and rural areas to the greatest extent possible, foster innovation and strengthen the resilience of local economies. It is important to highlight the fact that many non-urban areas lack the necessary infrastructure, technology and citizen support, which greatly complicates the establishment of effective governance systems and inclusive innovation ecosystems (Pinto et al., 2025).

The "getting smarter" perspective focuses on technology with the aim of attracting investment and tourists. When we talk about the "belonging" perspective, it emphasizes inclusion, diversity and co-creation of solutions in direct cooperation with citizens. The role of ICT in such circumstances is reflected in the empowerment of stakeholders and enabling their active participation. The goal is to establish smart regional planning that is socially inclusive and participatory (Matern et al., 2020).

In Serbia, it is possible to observe the accelerated pace of urbanization, a phenomenon present throughout Europe and the world. According to official estimates, approximately 55% of the population lives in cities and there is evident migration of the population from rural areas to the largest urban centers. Accessibility, prices and quality of life are factors that lead to the inevitable expansion of settlements near large cities, which unequivocally indicates the process of metropolitanization. With the accelerated pace of reindustrialization and the improvement of transport and every other type of infrastructure, it is possible to assume what the outlines of the further development of metropolitan and functional urban areas will look like, viewed from three primary aspects (administrative, managerial, functional and economic) (Stojkov, 2019). Initiatives related to the smart city approach have periodically emerged in Serbia, however, it is noticeable that little has been implemented in practice. These initiatives aimed at smart cities have mainly been embodied in the form of individual projects (Prigoda et al., 2022).

The Nomenclature of Territorial Units for Statistics (NUTS) was developed by Eurostat for the purpose of dividing the territory of the European Union into comparable regional units with the task of collecting statistical data and implementing regional policies. The NUTS system should ensure: harmonised collection and publication of regional statistical data, comparison of socio-economic situations between regions and targeting development and investment policies towards less developed areas (Statistical Office of the European Union, 2022).

Under the umbrella of NUTS 2 level, five statistical regions have been defined in the Republic of Serbia, which serve as the basis for planning and monitoring regional development policies. The statistical regions in question include: the city of Belgrade, Vojvodina, Šumadija and Western Serbia, Southern and Eastern Serbia, and Kosovo and Metohija. The Nomenclature of Territorial Units for Statistics (NSTJ in Serbian) is a system through which territories are grouped at defined levels for the purpose of standardized collection, processing and analysis of

statistical data, as well as for monitoring regional development (Statistical Office of the Republic of Serbia, n.d.).

Serbia is characterized by pronounced regional differences in terms of GDP per capita, which are among the largest in Europe. The north of the country (Belgrade region and Vojvodina region) generates almost more than two thirds of the total GDP. Belgrade contributes with about 42%, while Vojvodina with about 27%, which more than clearly indicates a pronounced gap in terms of development between the north and the south of the country. The remaining part of the GDP is generated by the regions of Šumadija and Western Serbia, as well as Southern and Eastern Serbia. The Statistical Office of the Republic of Serbia has stopped publishing data for Kosovo and Metohija after 1999, when the southern Serbian province was placed under the administration of UNMIK. Since all regions have approximately the same population, this also results in very large differences in GDP per capita (Uvalić & Bartlett, 2021).

Belgrade is the most developed region in Serbia, with the greatest progress in innovation, the ICT sector and international cooperation. The remaining regions lag significantly behind, although in some cases GDP growth indicates convergence. Vojvodina and Šumadija, along with Western Serbia, are making progress in terms of innovation in enterprises, while at the same time Southern and Eastern Serbia are recording a decline in both innovation and production. It is evident that all regions face challenges in developing a collaborative innovation ecosystem, and the ICT sector is becoming the leading contributor to GDP in the entire country (European Commission, 2025c).

3. DATA AND METHODOLOGY

In conducting this research, a hybrid AHP–SWOT–TOWS methodology was applied. It provides an integrated view of strategic priorities through a combination of quantitative and qualitative approaches. The Analytic Hierarchy Process (AHP) method, developed by Thomas L. Satty, was used to determine the weight coefficients of the identified factors (Saaty, 1980).

It is assumed that this methodology can represent a reliable and applicable tool for forming a strategic framework for the development of smart cities, and through them, smart regions in the Republic of Serbia. Integrating the AHP method into the SWOT analysis reduces subjectivity in assessing the importance of individual factors, while the TOWS approach enables the operationalization of strategies through a systematic connection of internal and external determinants of development (Weihrich, 1982).

In order to assess the extent to which the development of smart cities in the Republic of Serbia can influence the development of smart regions, the research is based on the official statistical division of the Republic of Serbia according to the NUTS 2 level of territorial classification. This classification is aligned with the methodology of the European Union (Nomenclature of Territorial Units for Statistics - NUTS) (European Commission, Eurostat, 2021). This classification is closely aligned with the European Union methodology (Nomenclature of Territorial Units for Statistics - NUTS) (European Commission, Eurostat, 2021).

According to the Statistical Office of the Republic of Serbia (2025), the Republic of Serbia is divided at the NUTS 2 level into the following statistical regions: Belgrade Region, Vojvodina Region, Šumadija and Western Serbia Region, South and East Serbia Region, and Kosovo and Metohija Region. The authors are of the opinion that this territorial division is the

most suitable for research, as it allows for comparability of data with European statistical standards, identification of regional differences in development and consideration of spatial aspects of digital transformation. Strengthening individual smart regions is materialized through the form of strengthening candidates for smart cities within the region. Smart cities located within the region, through their smart transformation, aim to embody the smart transformation of smart regions.

Proposals for smart cities through which the transformation would be implemented are proposed based on geographical dispersion and the need for balanced development. These cities are Belgrade (Belgrade District), Novi Sad and Subotica (Vojvodina), Kragujevac and Užice (Šumadija and the Western Serbia region), Niš and Zaječar (Eastern and Southern Serbia) and finally Pristina and Prizren (Kosovo and Metohija region). This implies an initial phase that would later include other urban areas, but in a way that would enable balanced development of the region. These cities have been recognized as candidates for drivers of smart regional development because they represent the administrative, economic, university and infrastructure centers of their NUTS 2 regions, which are characterized by the greatest potential for generating development effects. This positive trend would then be extended to the wider regional environment. The selection of cities is based on the principles of geographical dispersion, functional centrality, existing development capacities and the need for balanced regional development.

The mentioned cities are characterized by a critical mass of population, institutions and infrastructure for the purpose of launching smart solutions, which is then multiplied to smaller cities and municipalities in the region. The solutions obtained in this study use exclusively statistical territorial division, based on the NUTS 2 level (which represents functional statistical regions). It allows for harmonisation with European standards and good comparability of data by using a single classification of territorial units prescribed by the EU methodology. NUTS 2 regions in Serbia do not have a formal administrative role, but serve the needs of statistical analyses, regional development planning and access to international funds.

However, the authors point out that the current administrative and territorial organization of the Republic of Serbia is not sufficient as a basis for accelerated and sustainable development. In practice, local administrations and local self-government units in Serbia still operate within a centralized system, which limits the capacities for regional planning and project implementation (Mitić, 2024).

4. RESULTS AND DISCUSSION

Below is the TOWS matrix of the strategic transformation of smart cities in the function of developing smart regions of the Republic of Serbia, based on the previously defined SWOT analysis and territorial organization of NUTS 2 level according to the classification of the Statistical Office of the Republic of Serbia, harmonized with the Eurostat methodology. The matrix operationalizes the strategic directions of development of smart cities as carriers of digital, energy and management transformation, with the aim of gradually forming five smart regions: Belgrade Region, Vojvodina Region, Šumadija and Western Serbia Region, Southern and Eastern Serbia Region and Kosovo and Metohija Region.

Table 1. TOWS matrix of strategic transformation of smart cities in the function of developing smart regions of the Republic of Serbia

	S	W
	S1 University centers S2 Numerous ICT companies S3 Science and technology parks S4 Strategic location in Southeast Europe S5 Competitive labor price S6 Optical infrastructure and increasing quality of connectivity S7 Digital government platform	W1 Migration of educated personnel W2 Lack of financial resources W3 Centralization W4 The gap in the level of development of the regions W5 Depopulation W6 Poor condition of infrastructure W7 Low environmental awareness
O O1 EU funds O2 Regional cross-border cooperation O3 Regional competitiveness O4 Relocation of production from the EU O5 Migration of educated labor from unstable regions O6 Investment opportunities in the sustainable energy sector O7 Possibilities for developing precision agriculture	SO1 Regional integration through a common digital infrastructure	WO1 National Smart Infrastructure Fund
T T1 Serbia's slow progress in EU accession negotiations T2 Geopolitical uncertainty T3 Energy instability T4 Resistance to change T5 Excessive urbanization of Belgrade and Novi Sad T6 Vulnerability to economic instability T7 Predictions of demographic decline	ST1 Strengthening the capacity of local governments and reducing digital inequality	WT1 Promote transparency to reduce resistance to change

In Table 2, normalized results were obtained, which show the dominant influence of the following sub-criteria: S2 Numerous ICT companies (0.270), W2 Lack of financial resources (0.270), O1 EU funds (0.301) and T1 Serbia's slow progress in EU accession negotiations (0.313). Table 2 also shows the Global importance of SWOT subfactors which is represented in the form of a matrix $W_{SWOTsub\text{-}factors\ (global)}$.

Table 2. Local and global importance of SWOT factors

Factor	Importance of SWOT factors	SWOT subfactors	Local importance of SWOT subfactors	Global importance of SWOT subfactors
Strengths	0.150	S1 University centers	0.219	0.033
		S2 Numerous ICT companies	**0.270**	0.040
		S3 Science and technology parks	0.105	0.016
		S4 Strategic location in Southeast Europe	0.164	0.025
		S5 Competitive labor price	0.078	0.012
		S6 Optical infrastructure and increasing quality of connectivity	0.054	0.008
		S7 Digital government platform	0.111	0.017
Weaknesses	0.237	W1 Migration of educated personnel	0.231	0.055
		W2 Lack of financial resources	**0.270**	0.064
		W3 Centralization	0.133	0.032
		W4 The gap in the level of development of the regions	0.120	0.028
		W5 Depopulation	0.127	0.030
		W6 Poor condition of infrastructure	0.051	0.012
		W7 Low environmental awareness	0.067	0.016
Opportunities	**0.416**	O1 EU funds	**0.301**	0.125
		O2 Regional cross-border cooperation	0.109	0.045
		O3 Regional competitiveness	0.129	0.054
		O4 Relocation of production from the EU	0.193	0.080
		O5 Migration of educated labor from unstable regions	0.141	0.059
		O6 Investment opportunities in the sustainable energy sector	0.057	0.024
		O7 Possibilities for developing precision agriculture	0.070	0.029
Threats	0.197	T1 Serbia's slow progress in EU accession negotiations	**0.313**	0.062
		T2 Geopolitical uncertainty	0.112	0.022
		T3 Energy instability	0.080	0.016
		T4 Resistance to change	0.195	0.038
		T5 Excessive urbanization of Belgrade and Novi Sad	0.114	0.022
		T6 Vulnerability to economic instability	0.136	0.027
		T7 Predictions of demographic decline	0.050	0.010

$$W_3 = \begin{bmatrix} 0.242 & 0.275 & 0.289 & 0.276 & 0.243 & 0.494 & 0.251 & 0.169 & 0.135 & 0.264 & 0.257 & 0.327 & 0.117 & 0.311 & 0.282 & 0.324 & 0.316 & 0.280 & 0.276 & 0.276 & 0.327 & 0.308 & 0.257 & 0.328 & 0.159 & 0.163 & 0.120 & 0.261 \\ 0.502 & 0.520 & 0.420 & 0.483 & 0.511 & 0.270 & 0.488 & 0.261 & 0.157 & 0.223 & 0.147 & 0.132 & 0.441 & 0.477 & 0.493 & 0.472 & 0.449 & 0.465 & 0.391 & 0.483 & 0.436 & 0.433 & 0.451 & 0.383 & 0.213 & 0.231 & 0.328 & 0.119 \\ 0.172 & 0.122 & 0.168 & 0.101 & 0.144 & 0.154 & 0.157 & 0.119 & 0.295 & 0.421 & 0.483 & 0.450 & 0.152 & 0.127 & 0.150 & 0.124 & 0.128 & 0.116 & 0.195 & 0.141 & 0.142 & 0.165 & 0.198 & 0.120 & 0.085 & 0.490 & 0.168 & 0.451 \\ 0.084 & 0.082 & 0.123 & 0.141 & 0.102 & 0.082 & 0.103 & 0.451 & 0.414 & 0.082 & 0.113 & 0.091 & 0.290 & 0.085 & 0.075 & 0.079 & 0.107 & 0.140 & 0.138 & 0.101 & 0.095 & 0.094 & 0.094 & 0.158 & 0.542 & 0.116 & 0.383 & 0.169 \end{bmatrix} \quad (1)$$

Matrix of importance of alternatives is then calculated and presented in form of matrix:

$$W_{\text{alternatives}} = \begin{bmatrix} SO1 \\ WO1 \\ ST1 \\ WT1 \end{bmatrix} = W_3 \text{ x } W_{\text{SWOTsub-factors (global)}} = \begin{bmatrix} 0.258 \\ 0.379 \\ 0.192 \\ 0.171 \end{bmatrix} \quad (2)$$

Based on the value of the obtained normalized weights, the order of strategy implementation can be determined as follows:

$$\text{WO1 (0.379)} \rightarrow \text{SO1 (0.258)} \rightarrow \text{ST1 (0.192)} \rightarrow \text{WT1 (0.171).} \quad (3)$$

The sequence of implementation of strategies for the transformation of smart regions through the development of smart cities begins with strategy WO1 - National Fund for Smart Infrastructure (0.379). It can be expected that without a clearly defined and stable financial mechanism, it is almost impossible to implement serious infrastructural changes that represent

a necessity of transformation. The National Fund represents a good basis on which the entire transformation process is based. It enables an even distribution of funds, reduces the differences in development between cities (which are very present) and provides institutional security for long-term investments in digital and physical infrastructure. After the financial and organizational prerequisites are established, the next step is SO1 - Regional integration through a common digital infrastructure (0.258). In this phase, the focus shifts from individual local projects to their mutual connection and coordination. A common digital infrastructure, networked and harmonized systems and intensive data exchange enable cities to function as part of a single regional system. In this way, efficiency is increased, costs are reduced and, very importantly, it encourages the desired coordinated development. After establishing the infrastructure base, the key strategy is ST1 - Strengthening the capacities of local governments and reducing digital inequality (0.192). It should be emphasized that technology alone is not enough if there is no appropriate knowledge and relevant capacities for its use. Further strengthening the administrative competencies of local governments, as well as improving the digital skills of citizens, will enable the introduced solutions to be fully implemented in practice, as well as greatly reducing the digital gap between different parts of the region. Finally, WT1 - Promoting transparency to reduce resistance to change (0.171) represents the final dimension of the entire transformation process.

Every transformation, every technological breakthrough, carries with it a certain level of resistance, so transparent information, public participation and open communication are actually key to building trust. This ensures that changes are not perceived as imposed, but as a joint development project. This is especially important in the context of Serbia, given the existing age structure of the population and extremely pessimistic demographic projections for the future. Such a demographic trend requires additional and, above all, continuous focus on reducing digital inequality and raising the digital competences of all generations.

5. CONCLUSION

The study explores the strategic transformation of smart cities in Serbia as a basis for the development of smart regions, using the NUTS 2 classification of regions such as Belgrade, Vojvodina, Šumadija and Western Serbia, Southern and Eastern Serbia, and Kosovo and Metohija. The key contribution of the paper is reflected in linking the concept of smart cities with regional development, identifying specific urban centers as carriers of transformation, and defining the priorities of the strategies (WO1, SO1, ST1, WT1) according to their relative importance.

Of particular value is the emphasis on the financial mechanism (National Fund), regional digital integration, and strengthening institutional capacities, while taking into account demographic challenges. The study provides a solid framework for smart regions in Serbia, but requires more detailed operational plans, which is a limitation of the study. The study presents a solid strategic framework for the transformation of smart regions through the development of smart cities in Serbia, which enables inclusive development and balanced development of the region.

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