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THE IMPACT OF PUBLIC PARTICIPATION ON SUSTAINABLE URBAN DEVELOPMENT IN POLAND

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ABSTRACT: Sustainable urban development is a key challenge for modern societies, mainly due to dynamic social, economic, and environmental changes. These challenges can negatively impact residents' quality of life, emphasising the need for increased stakeholder involvement in implementing sustainable development principles. This article aims to identify factors that promote higher levels of public participation. Surveys conducted in 33 Polish cities were used to develop the Index of Local Level Participation (ILLP). Cities for the study were selected based on their presence in six sustainability-related rankings. The survey was conducted using the CAWI technique and purposive sampling. The ILLP included two variables: voter turnout (%) in City Council elections and the percentage of stakeholder groups involved in the city strategy process. The analysis revealed that ILLP values are influenced by city size and location within specific macro-regions. Larger cities and agglomerations exhibit higher levels of stakeholder involvement than medium-sized cities, suggesting a correlation between socio-economic development and public participation. Additionally, being in a highly developed region fosters greater citizen engagement. Cities with low participation levels should focus on improving quality of life and raising awareness about the importance of participation in sustainable urban transformation.

KEYWORDS: social participation, quality of life, sustainable development, stakeholder involvement

Introduction

Urban development is intrinsically linked to demographic, social, and cultural transformations. By 2030, nearly 70% of the population is estimated to reside in urban areas (Cohen, 2001). This trend will intensify the challenges that cities encounter in terms of spatial planning, transportation systems, and the formulation of urban policies. A significant trend is also the ageing population. Research indicates that older individuals are more likely to move to suburban or rural areas, potentially contributing to urban sprawl (Kashnitsky et al., 2021). It is essential to consider that older people have specific needs for healthcare and public services and are less likely to adopt new technologies (Gaia et al., 2021). Cities remain centres of regional development, attracting new residents and investors, which, on the one hand, drives economic growth but, on the other, generates environmental challenges, such as increased GHG emissions, noise pollution, and biodiversity losses (Kwilinski et al., 2023).

A major challenge for contemporary cities is to foster development that minimises the negative impacts of social and environmental issues while simultaneously enhancing social well-being (Spiliotopoulou & Roseland, 2020). Implementing sustainable development principles in practice requires long-term planning, efficient resource management, and active stakeholder engagement (Kuang & Lin, 2021). Social participation, defined as the involvement of residents in decisions regarding their city and neighbourhood (Fleszer, 2019), plays a crucial role in identifying the real needs of communities. It is necessary not only to implement policies that support social participation but also to invest in the development of social infrastructure, such as cultural centres and community hubs. Increased social engagement can lead to better utilisation of local resources, more efficient urban management, and strengthened trust in public institutions.

Given these considerations, the aim of this article is to identify factors influencing the level of social participation in cities. For this purpose, the Local-Level Participation Index (ILLP) was developed. The article is divided into several sections. The literature review discusses the main challenges cities face in implementing sustainable development principles, as well as the role of quality of life and the impact of social participation on its level. The subsequent section presents the research methods applied. The results section outlines the findings of the analyses. Finally, the conclusions compare the obtained results with other studies and formulate final recommendations.

Literature Review

Challenges of Contemporary Cities in Implementing Sustainable Development

For several decades, sustainable development has been a guiding principle for the growth of cities and regions. The overarching aim of sustainable development is to meet societal needs while ensuring that future generations can also fulfil their requirements. Sustainable development is often understood as socio-economic progress grounded in environmental protection and intergenerational equity (Rogall, 2010). This interpretation highlights the importance of stakeholder education, implementing policies and strategies, and designing system-oriented actions incorporating these dimensions (Duxbury et al., 2016; Tanjung, 2021).

The application of sustainable development principles addresses the multifaceted challenges faced by cities, which can be categorised into four groups: social, environmental, logistical, and policy-related challenges. Social challenges include suburbanisation, population ageing, and poverty risk (Bagiński, 2011; Cohen, 2006). Suburbanisation is associated with uncontrolled urban sprawl into surrounding areas, leading to depopulated city centres despite the continued reliance of suburban residents on urban services (Demazière, 2022). Cities also grapple with increasing levels of environmental pollution (water, soil, and air) and landscape degradation (Jiang et al., 2023), alongside insufficient infrastructure and service provision to adequately meet urban users' needs. Wealthier societies must contend with congestion, pollution, and high levels of waste generation.

Urban logistics pose additional challenges. A growing population, reliance on private transport, and the increasing geographic size of cities create issues in passenger and freight transport (McLeod et al., 2017; Waddell, 2002). Policy and strategy development are crucial for effective urban planning.

DOI: 10.34659/eis.2025.92.1.1032

Challenges in this area include designing and implementing actions within constrained budgets, revitalising degraded areas, introducing innovations, and engaging residents in urban initiatives (Kaufmann & Wittwer, 2022; Wardekker et al., 2020).

Municipal authorities must prioritise actions aimed at curbing undesirable urban development trends. Implementing sustainable development principles across various urban functions can significantly facilitate the planning and execution of such initiatives. However, successful implementation requires political will, knowledge, and efforts to mobilise stakeholders (Garnåsjordet et al., 2012; Guzman et al., 2020). Consequently, educational activities and the promotion of civic engagement should not be overlooked.

Enhancing Quality of Life as an Objective in Sustainable Development Implementation

The primary aim of urban policy-making is to foster development and ensure a high quality of life. However, the "high quality of life" concept is rather ambiguous, and its varying interpretations may lead to conflicts among different stakeholder groups (Costa et al., 2021). Quality of life can be defined as the degree to which an individual's or society's needs and expectations are met (Wnuk et al., 2013). These needs may encompass material, social, emotional, or spiritual dimensions, aligning with the multiple dimensions of quality of life (see Figure 1). The perceived quality of life is a subjective measure influenced by various factors, including place of residence, availability of green spaces, access to public services, sense of safety, labour market accessibility, economic stability, emotional well-being, and the political system (Mouratidis, 2021; Sofeska, 2017; Ojobo et al., 2024). Recently, non-economic factors have gained increasing importance in assessing quality of life, which may result from improved material living conditions. Quality of life is recognised as one of the categories within the framework of neoclassical economics (Czaja & Becla, 2012), addressing issues such as rational management by economic agents, cost optimisation, and general equilibrium.

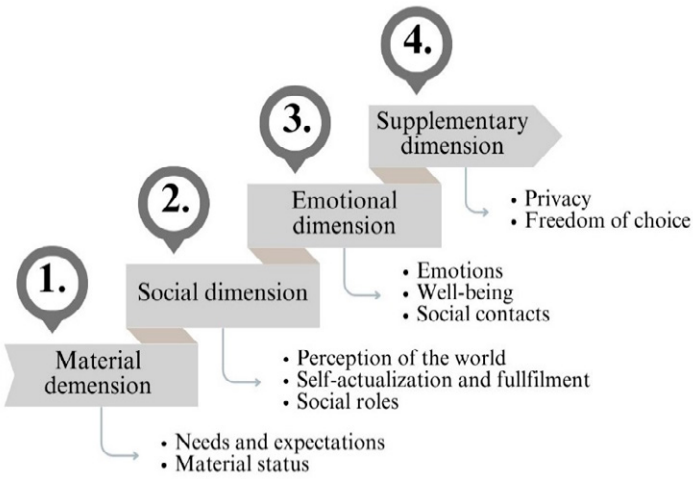

Figure 1. Quality of life dimensions

Source: authors' work based on Wnuk et al. (2013) and Allardt (1976).

On the other hand, welfare economics offers a novel interpretation of concepts such as public goods and the Barone-Kaldor compensation principle (Zielińska-Chmielewska, 2020). In the utilitarian approach, welfare is directly derived from the utility of income (Pigou, 1920). Therefore, national income should be distributed equitably to ensure a high level of societal well-being. However, this theory was contested by Sen (1978), who argued that consumption and income cannot serve as measures of welfare due to their subjective significance to an individual (Wronowska, 2015).

Contemporary discussions on quality of life increasingly focus on the fair allocation of resources, which would not only benefit environmental protection but also ensure stakeholders' needs are met (Kot, 2012). This perspective is supported by the growth of the sharing economy and the economics of happiness (Agrawal et al., 2023). Research by Heinonen et al. (2004) found that perceptions of quality of life are more strongly influenced by emotional well-being than by material status. However,

DOI: 10.34659/eis.2025.92.1.1032

individuals from poorer families tend to rate their quality of life lower than those from wealthier families (Shek & Lee, 2007), indicating a significant relationship between material status, social interactions, and psychological well-being. It thus appears impractical to treat the dimensions of quality of life as separate categories, as they are inherently interconnected and collectively shape the overall perception of well-being.

The Role of Public Participation and Its Impact on Quality of Life

A sense of agency and social engagement significantly influence the quality of life. Persons involved in volunteer work, maintaining strong relationships with their local community, or participating in social events and initiatives typically report a higher quality of life than those who are not engaged in social life (Rose-Ackerman, 2008). Public participation can be defined as co-decision-making regarding the affairs of local communities and cities or, more broadly, as co-management (Fleszer, 2019). It can take two forms: direct and indirect participation. Direct participation involves the active involvement of stakeholders, while indirect participation refers to the selection of representatives to act on their behalf (Nabatchi et al., 2015).

In Polish legislation, public participation is referenced in Articles 4 and 12 of the Constitution of the Republic of Poland, which highlight the exercise of power by the nation through elected representatives and the freedom to establish associations and foundations. Additionally, the Act of 9 October 2015 on revitalisation defines participation as the active involvement of stakeholders at every stage of the process (Constitution, 1997; Act, 2015). Despite its importance, the level of public participation in Poland remains low, hindering urban policy effectiveness (Łabędź, 2015). As a result, fostering greater engagement in public participation is essential for enhancing the quality of life and achieving more effective governance at the local level.

Engaging stakeholders is an obligation in certain cases, such as during the development of strategies or revitalisation processes. However, these processes are often limited to consultations (Haklay et al., 2018). Consulting on projects and investments serves as both a platform for exchanging experiences and concerns and a means to understand the real needs of stakeholders better. Municipal authorities can also employ other forms of public participation, such as participatory budgeting, focus group discussions, or walk-alongs with officials (Bluj et al., 2018). Cities encompass diverse groups of stakeholders, including municipal authorities, residents, entrepreneurs, third-sector organisations, and investors (Kiba-Janiak, 2016; Rześny-Cieplińska & Szmelter-Jarosz, 2021). Each group has distinct expectations, making it challenging to achieve compromise. Some groups, such as local leaders, members of non-governmental organisations, or specific professional groups, tend to be more active, while young adults and older people are the hardest to engage, prompting many targeted actions towards these demographics (Ziersch et al., 2011).

High levels of stakeholder engagement in policy and strategy creation, as well as action planning, can yield numerous benefits. These include better alignment of implemented solutions with the needs and expectations of various stakeholder groups, conflict prevention, and greater awareness among stakeholders (Ogryzek et al., 2021). Research conducted by Błoński et al. (2014) found that individuals involved in participatory processes are generally more satisfied with the quality of public services than less engaged individuals. Furthermore, local democracy—measured by free and fair elections, civic freedoms, and political culture – has been shown to correlate positively with GDP per capita, a key indicator of economic development (Knutsen et al., 2016).

Additional studies by de Sousa et al. (2021) demonstrated a positive correlation between high levels of multiculturalism and the quality of local democracy, suggesting that multiculturalism can enhance a sense of belonging and responsibility for urban development. Research by de Araujo and Tejedo-Romero (2016) highlighted the relationship between local government transparency, such as financial accountability and information accessibility, and increased investment and population growth. Moreover, Vanhanen's (2000) studies assessed the democratisation of nations using a simple index based on two variables: the winning party's electoral share and voter turnout relative to the entire population.

Social participation is inherently linked to various dimensions of quality of life, though a lack of data hinders studying these relationships, particularly regarding the social and emotional aspects of quality of life. Nevertheless, stakeholder engagement remains vital in fostering democratic governance, improving public policies, and enhancing overall urban development.

DOI: 10.34659/eis.2025.92.1.1032

Research Methods

The aim of the research presented in this article was to retrieve significant economic and non-economic factors creating the level of social participation in cities. The research procedure is outlined in Figure 2.

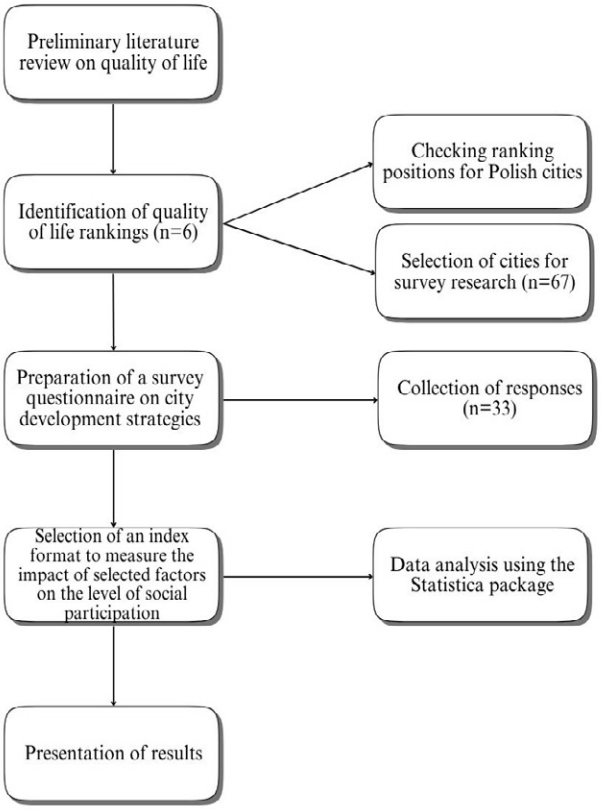

Figure 2. Research procedure

The literature review enabled the identification of a research gap and the selection of the most appropriate research method. Subsequently, six rankings related to quality of life were identified: the *Ranking of Polish Sustainable Cities*, the *Ranking of Polish Local Governments*, the *Ranking of Polish Cities of the Future 2050*, the *Ranking of Green Cities*, the *Innovation City Index*, and the *European Smart City Index*. The positions of individual cities within these indices were examined based on data from 2021 or 2022. A total of 66 cities of various sizes were identified.

In the next step, a questionnaire focused on development strategies was developed. The survey was conducted using the CAWI technique with a purposive sampling method. We used an approach similar to Bokhari and Myeong (2022) to prepare, validate, and carry out the survey. First of all, the literature review and analysis of variables considered by the found indicators helped to build the set of variables to be included in the initial model. Duplicated and very similar variables were excluded at this stage, and then the final questions were built. The variables for the initial model are presented in Appendix A. The questionnaire included questions related to elements of development strategies, definitions of sustainable development, identification of city stakeholders and their involvement in participatory processes, investment financing, and the outcomes of implementing sustainable development principles. The questionnaire consisted of 28 questions. The questionnaire was active between 1 August and 30 September 2023.

The collected responses were used to construct the *Index of Local-Level Participation (ILLP)*. The index was based on the democratisation index proposed by Vanhanen (2000). Several considerations guided the selection of this index. Firstly, the democratisation index examines the general level of democracy, making it particularly suitable for assessing overall levels of social participation. Secondly, despite its simplicity, Vanhanen's index has proven highly effective in comparing countries, and the authors aimed to create an index formula that would allow for comparisons between cities. Thirdly, the straightforward structure of the ILLP ensures its replicability, making it accessible for practical use, including by public officials. The following formula for the ILLP was proposed:

$$\text{Index of Local-Level Participation} = \text{The voter turnout rate for City Council elections (\%)} * (\text{Stakeholder Groups (\%)} + 100\%) \quad (1)$$

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The voter turnout rate for City Council elections was obtained from the Local Data Bank, while a survey identified stakeholder groups. The survey outlined 15 stakeholder groups involved in developing development strategies (100% inclusion): residents, local entrepreneurs, urban activists, local politicians, municipal authorities, NGO representatives, university representatives, practitioners, experts, urban planners and designers, representatives of budgetary and auxiliary units, investors, developers, tourists, and regional and national authorities.

The Generalized Linear Model (GLM) was employed to construct the model. The choice of this model was due to the presence of variables with non-normal distributions and the diversity of variable types, including continuous quantitative, nominal, and ordinal variables (Mamun & Paul, 2023; Yue et al., 2024).

The GLM construction involved several stages: initially, all variables were included in the model, followed by the elimination of statistically insignificant variables until the final model was achieved, containing only statistically significant variables. Before integrating the variables into the model, the tau-Kendall correlation coefficient was calculated due to the absence of a normal distribution. Calculations were performed using the *Statistica 13* software. The results are presented in the *Results* section.

Research Results

The study included representatives from 33 Polish cities (see Table 1). Most of the cities are located in the Southern macroregion, specifically in the Małopolskie and Śląskie provinces. These provinces are economically well-developed and are also popular tourist destinations. Among the participating cities, 72.7% were classified as large cities with populations exceeding 100,000 inhabitants, while 27.3% were medium-sized cities with populations ranging between 20,000 and 100,000 residents.

Table 1. Characteristics of the surveyed cities

City	Voivodeship	NUTS1	Macroregion	Population	City size category	ILLP
Białystok	Podlaskie	PL8	Eastern	292 600	G	94.48%
Bielsko-Biała	Śląskie	PL2	Southern	166 765	G	89.65%
Bydgoszcz	Kujawsko-pomorskie	PL6	Northern	330 038	G	98.21%
Bytom	Śląskie	PL2	Southern	149 576	G	96.82%
Dąbrowa Górnicza	Śląskie	PL2	Southern	114 765	G	86.06%
Elbląg	Warmińsko-mazurskie	PL6	Northern	113 567	G	83.66%
Tychy	Śląskie	PL2	Southern	123 105	G	89.65%
Czestochowa	Śląskie	PL2	Southern	208 282	G	71.72%
Jaworzno	Śląskie	PL2	Southern	87 552	M	82.48%
Jelenia Góra	Dolnośląskie	PL5	Southwest	75 794	M	78.89%
Katowice	Śląskie	PL6	Southwest	289 019	G	99.77%
Kielce	Świętokrzyskie	PL7	Central	183 885	G	94.73%
Konin	Wielkopolskie	PL4	Northwest	68 112	M	81.96%
Kraków	Małopolskie	PL2	Southern	803 282	G	78.89%
Krosno	Podkarpackie	PL8	Eastern	44 322	M	94.48%
Leszno	Wielkopolskie	PL4	Northwest	60 642	M	89.68%
Lublin	Lubelskie	PL8	Eastern	331 243	G	104.98%
Łódź	Łódzkie	PL7	Central	658 444	G	113.68%
Koszalin	Zachodniopomorskie	PL4	Northwest	104 239	G	96.86%
Przemyśl	Podkarpackie	PL8	Eastern	56 802	M	59.49%

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City	Voivodeship	NUTS1	Macroregion	Population	City size category	ILLP
Opole	Opolskie	PL5	Southwest	126 458	G	92.65%
Piekary Śląskie	Śląskie	PL2	Southern	52 137	M	96.82%
Piotrków Trybunalski	Łódzkie	PL7	Central	67 264	M	98.52%
Płock	Mazowieckie	PL9	Mazowieckie Voivodeship	112 483	G	119.24%
Radom	Mazowieckie	PL9	Mazowieckie Voivodeship	197 848	G	114.98%
Ruda Śląska	Śląskie	PL2	Southern	131 532	G	96.82%
Rybnik	Śląskie	PL2	Southern	131 744	G	75.31%
Rzeszów	Podkarpackie	PL8	Eastern	197 181	G	83.98%
Sopot	Pomorskie	PL6	Northern	32 276	M	80.02%
Sosnowiec	Śląskie	PL2	Southern	189 178	G	93.24%
Świętochłowice	Śląskie	PL2	Southern	45 795	M	75.31%
Warszawa	Mazowieckie	PL9	Mazowieckie Voivodeship	1 861 975	G	106.47%
Włocławek	Kujawsko-pomorskie	PL6	Northern	102 102	G	87.30%

Applied designations: G – large city. M – medium-sized city.

The ILLP can be easily replicated, allowing for comparisons between cities. The index is based on two variables: the participation rate of various stakeholder groups involved in the development strategy process and voter turnout in City Council elections. It reflects both direct and indirect participation. A high voter turnout characterises cities that achieved high ILLP scores and demonstrates an awareness among municipal authorities of the critical role stakeholders play in urban development. This is confirmed by including diverse stakeholder groups in the strategy development process. The most frequently involved stakeholders are residents, as indicated by all surveyed cities. Local entrepreneurs ranked second (see Figure 3). The needs of these groups are the most commonly recognised, as they represent the largest and most prominent stakeholder groups.

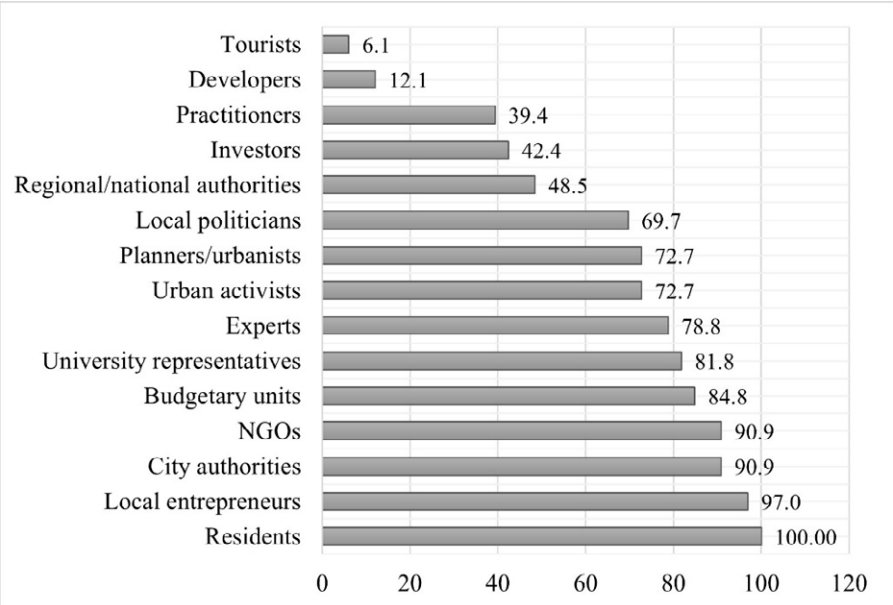

Figure 3. Participation of various stakeholder groups involved in the process of developing the strategy (%)

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Developers and tourists were the least frequently mentioned groups, with only 12% and 6% of the analysed cities, respectively, involving them in strategy development. Less than half of the cities engage regional and national authorities in these processes. The lack of involvement of key stakeholder groups, such as investors or regional authorities, may contribute to declining public trust in municipal authorities. However, half of the analysed cities plan to expand the range of stakeholder groups included in participatory processes. At the same time, four do not intend to make any changes in this regard.

Table 2. Initial model of Index of Local-Level Participation

Effect	One-dimensional significance tests for the ILLP. Parameterisation with sigma constraints. Decomposition of effective hypotheses; Standard error of the estimate: 0.0820				
	SS	Degrees of freedom	MS	F	p
Constant / Y-intercept		0			
Households with Internet access	0.000287	1	0.000287	0.015151	0.906831
Average life expectancy of people aged 60 and over	0.006327	1	0.006327	0.334406	0.588144
Detection rate of crime offenders	0.008946	1	0.008946	0.472820	0.522283
% of people volunteering within the total number of people in the category	0.000014	1	0.000014	0.000754	0.979158
Net enrollment rate	0.000915	1	0.000915	0.048386	0.834595
Number of enterprises per 1.000 people	0.000012	1	0.000012	0.000632	0.980917
Green areas per person	0.011209	1	0.011209	0.592416	0.476256
Wages	0.019069	1	0.019069	1.007896	0.361490
Net migration of people of working age	0.001161	1	0.001161	0.061349	0.814226
City size code	0.003536	1	0.003536	0.186879	0.683536
Familiarity with the Doughnut Economics concept*	0.002971	1	0.002971	0.157055	0.708230
Broadening the range of stakeholders*	0.003133	1	0.003133	0.165600	0.700887
Objective: Governance*	0.013375	1	0.013375	0.706904	0.438819
Objective: Digitalisation*	0.000055	1	0.000055	0.002924	0.958970
Objective: Demography*	0.000215	1	0.000215	0.011371	0.919224
Objective: Participation*	0.000035	1	0.000035	0.001828	0.967547
Number of funding sources*	0.000845	1	0.000845	0.044657	0.840979
Number of sources of knowledge on sustainable development*	0.000577	1	0.000577	0.030505	0.868201
Share of expenditures on recreation and culture		0			
Citizens' Budget per 1 inhabitant	0.007030	1	0.007030	0.371545	0.568797
Submitted projects in the Citizens' Budget	0.001167	1	0.001167	0.061689	0.813724
Attendance at the Citizens' Budget	0.017949	1	0.017949	0.948698	0.374785
Macroregion	0.021115	5	0.004223	0.223207	0.937286
Error	0.094600	5	0.018920		

The proposed ILLP index enabled the identification of factors influencing the level of social participation at the local level. A review of the literature and reports on quality of life helped identify factors that might impact social participation. Based on this analysis, 23 variables were selected and

DOI: 10.34659/eis.2025.92.1.1032

included in the GLM initial model (see Table 2). The initial model incorporates variables sourced from public statistics (not marked by an asterisk) and survey data (with an asterisk). A detailed explanation of these variables is provided in Appendix A.

Variables related to internet access, volunteering, entrepreneurship, migration, data sources on sustainable development and the concept of doughnut economics, development strategy goals concerning digitalisation, demographics, participation, stakeholders, and expenditures on recreation and culture were found to be statistically insignificant and were therefore excluded from the model. This may suggest that, within the adopted index formula, these variables do not play a pivotal role in shaping social participation, potentially due to the specific conditions of the analysed cities.

It is worth noting that the variables are related to elements of development strategies. While a strategy is a fundamental tool for urban development, it only partially reflects stakeholder engagement methods. Variables related to life expectancy, crime rates, green spaces, and participatory budgeting were found to be statistically insignificant. While these variables pertain to residents' quality of life and local participation, their lack of statistical significance may indicate a lack of stakeholder awareness about the importance of engaging in local activities or reflect other priorities within the local community. Furthermore, participatory budgeting is just one of many tools for social participation and cannot alone determine the level of stakeholder interest in local affairs. After eliminating statistically insignificant variables, the model assumed its final form, as shown in Table 3.

Table 3. Output model of Index of Local-Level Participation

Effect	One-dimensional significance tests for the ILLP. Parameterisation with sigma constraints. Decomposition of effective hypotheses; Standard error of the estimate: 0.0820				
	SS	Degrees of freedom	MS	F	p
Constant term	0.411798	1	0.411798	41.97001	0.000001
City size code	0.047996	1	0.047996	4.89173	0.036351
Macroregion	0.203222	6	0.033870	3.45202	0.012700
Error	0.245293	25	0.009812		

From the extensive set of potentially significant variables identified in the literature review, only city size and macroregion were found to be statistically significant. As a result, 21 variables, including those related to participatory budgeting, categories of goals adopted in development strategies, salaries, and green space per capita, were eliminated due to their lack of statistical significance. Approximately 36.4% of the analysed cities were located in the Southern macroregion, while 15.6% were situated in the Eastern macroregion. This may suggest that cities in these regions exhibit a higher level of awareness regarding the importance of social participation compared to cities in other macroregions. Macroregions differ in terms of socio-economic development, which may also explain the significance of this variable.

The results indicate that the larger the city, the higher its ILLP score. Among the analysed cities, 69.7% had populations exceeding 100,000 residents, while 27.3% were medium-sized cities with populations between 20,000 and 100,000 residents. Larger cities tend to have higher levels of social capital due to their ability to attract well-educated residents and the presence of higher education institutions. Additionally, larger cities generate higher revenues, which can support greater spending on promoting participation and organising participatory processes.

Interestingly, variables related to quality of life, such as green space per capita or life expectancy, do not directly translate into the level of social participation. This may suggest either a relatively high level of resident satisfaction with urban living conditions or a lack of awareness regarding the importance of engaging in city development.

Cities with lower ILLP values should focus on measures to raise awareness of public participation among various stakeholders. The goal of stakeholder education is to highlight the importance of involving the public in shaping city policies. At this point, it is worth noting that the groups least likely to participate in such processes include older adults and people with disabilities. Therefore, participatory processes should be inclusive, ensuring the involvement of individuals from diverse social and

DOI: 10.34659/eis.2025.92.1.1032

age groups. At the same time, municipalities must ensure the quality of participatory processes, meaning they should be appropriately facilitated by an external expert rather than local officials and should include mechanisms for monitoring their outcomes. Building stakeholder trust in local government can lead to greater engagement. However, achieving this requires concrete steps in education, communication, and strengthening stakeholder empowerment. Diverse forms and tools of participation can be beneficial, extending beyond the common practice in Poland of merely consulting on already prepared documents. Stakeholders should be involved at every stage of the development of municipal documents and policies.

It is important to note that the presented ILLP index, due to its simplicity, may not fully capture the nuances of social participation, which should be taken into account when interpreting the results.

Discussion

The article addresses the impact of social participation on implementing sustainable development in cities. It aims to identify the factors influencing the level of social participation at the local level using the ILLP index. The findings highlight a connection between social participation levels and both city size and macroregion. This relationship can be interpreted as a correlation between social participation and the overall socio-economic development level, supporting Knutsen et al.'s (2016) thesis on the link between social participation and GDP per capita.

A total of 23 variables were included in the initial model, 91% of which were found to be statistically insignificant. This reflects the complexity of social participation, influenced by numerous challenging factors, including psychological and emotional elements. Thus, the assertion by Kaufmann and Wittwer (2022) and Wardekker et al. (2020) that stakeholder engagement is the most challenging aspect of participatory processes appears well-founded. Many researchers, including Garnåsjordet et al. (2012) and Guzman et al. (2020), underscore the importance of stakeholder activation in sustainable development implementation. As Duxbury et al. (2016) noted, implementing sustainable development principles must be grounded in stakeholder education and the creation of appropriate policies and strategies. Effective policies should address the needs and expectations of local communities, which, according to Kaufmann and Wittwer (2022), is one of the most significant challenges for contemporary cities. Engaging stakeholders in participatory processes can lead to greater acceptance of proposed solutions.

Łabędź (2015) observes that the level of participation in Poland is low, which may adversely affect the effectiveness of urban policies. Therefore, actions to activate various stakeholder groups in participatory processes are crucial. Participatory Budgeting, for instance, is operational in many Polish cities, though it was found to be statistically insignificant in the proposed model. Participatory Budgeting is an example of direct participation, allowing stakeholders to decide on allocating part of the city's budget for resident-proposed initiatives. This tool can increase stakeholder awareness, as Haklay et al. (2018) confirmed. Thus, civic education initiatives, emphasised by Tanjung (2021), are necessary.

Another approach to enhancing public participation would be the increased utilisation of Information and Communication Technology (ICT). Its impact on sustainable urban development is a significant and essential aspect of contemporary urban planning (Agboola et al., 2023). ICT has the potential to transform cities and enhance their sustainability in multiple ways. By leveraging digital technologies, data analytics, and intelligent systems, ICT can optimise resource management, improve energy efficiency, enhance transport networks, and support public participation in decision-making processes regarding urban development strategies and investment decisions.

No factors related to high quality of life, as indicated in the works of Mouratidis (2021) and Sofeska (2017), were found to influence the ILLP index. Although high quality of life might intuitively be expected to correlate with higher levels of social participation, as supported by Rose-Ackerman's (2008) research, the model did not reveal such a relationship. This could result from the limited number of variables included in the ILLP. Additionally, Błoński et al. (2014) demonstrated a connection between satisfaction with public services and levels of social participation. This suggests that social participation could be key in driving sustainable urban transformation, such as increased public transport utilisation. Consequently, social participation is a vital component of the sustainable development paradigm.

DOI: 10.34659/eis.2025.92.1.1032

Conclusion

Social participation is a critical component in implementing the principles of sustainable urban development. Stakeholder engagement can accelerate the sustainable transformation of cities; thus, stakeholders must adopt a proactive approach and demonstrate a high level of awareness. The analysis revealed a statistically significant relationship between local social participation and city size and macroregion, indicating a connection between the overall socio-economic development level and social participation. This aligns with conclusions drawn by other researchers. However, the presented index relies on only two variables, which may influence the results.

One of the limitations of the study is the limited geographical scope of the research. The study gathered responses from 33 Polish cities. However, even if the geographical scope of the research presented in the paper limits the generalizability of the results, the proposed indicator use provides valuable insights for creating the approach for assessing cities in different countries in a similar way. The simplicity of the ILLP was an intentional choice inspired by the findings of Vanhanen (2000). In his research, a simple index formula proved effective due to its ability to facilitate cross-country comparisons. The second limitation related to the statistical model itself is the limited number of variables significant for building the indicator value. In the context of cities, the index should incorporate more variables, including both economic and non-economic dimensions of quality of life. Therefore, the model should be validated for other countries' cities, especially in Central and Eastern Europe, where the political and social transformations presented similar pathways. If so, then future research should extend to European cities to enhance the index's applicability and robustness. Due to the focus on cities present in sustainability rankings, small cities were not included in the study. This omission may be attributed to larger and medium-sized cities generally possessing more resources for implementing sustainable development initiatives than smaller cities. Summing up all the limitations and values of the presented model, it can be useful for assessing the ILLP as we propose, but it is a good base for developing and measuring the level of local participation in cities, concluding about it, and building the bottom-top approach to initiate new solutions by the stakeholders.

Social participation is a complex phenomenon, making research in this area challenging. Therefore, the proposed index should be considered a preliminary step for further analysis. The ILLP represents an example of an index measuring the impact of various factors on social participation levels but could also help study other social phenomena. The findings demonstrated that social participation is associated with city size, with higher ILLP values observed in cities in more developed Poland regions. Due to their shared urban development patterns and historical conditions, further research is necessary to re-examine the variables' significance and influence on shaping the ILLP in other samples. The authors hope this article initiated an engaging academic discussion that will be continued in numerous future studies.

The contribution of the authors

Conceptualisation, B.Ch., B.P. and A.Sz.-J.; literature review, B.Ch.; methodology, B.Ch. and A.Sz.-J.; formal analysis, B.Ch., B.P. and A.Sz.-J.; writing, B.Ch., B.P. and A.Sz.-J.; conclusions and discussion, B.Ch., B.P. and A.Sz.-J.

The authors have read and agreed to the published version of the manuscript.

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Appendix A. Explanation of the variables used in the model

Variable name	Characteristics	Unit
Familiarity with the Doughnut Economics concept	The respondents were asked whether they are familiar with the concept of Doughnut Economics	Binary
Broadening the range of stakeholders	The respondents were asked whether they plan to involve a larger number of different stakeholder groups in the development strategy processes	Binary
Objective: Governance	The respondents had to indicate which categories of goals were adopted in the current development strategy. from the following options: social, economic, environmental protection, government transparency, digitalization, mobility and infrastructure	Multiple-choice format, Binary
Objective: Digitalisation		
Objective: Demography		
Objective: Participation		
Number of funding sources	The respondents were asked to indicate all sources of funding for the actions planned in the development strategy. such as: EU programs. national programs, ministry competitions, loans/credits, and own funds	Multiple-choice format, Binary
Number of sources of knowledge on sustainable development	The respondents indicated all sources of knowledge about sustainable development from the following options: seminars, conferences, official websites, other websites, specialist journals, social media, scientific publications, and no interest	Multiple-choice format, Binary

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WPŁYW PARTYCYPACJI SPOŁECZNEJ NA ZRÓWNOWAŻONY RÓZWÓJ MIAST W POLSCE

STRESZCZENIE: Zrównoważony rozwój miast jest kluczowym wyzwaniem dla współczesnych społeczeństw, szczególnie ze względu na dynamiczne zmiany społeczne, gospodarcze i środowiskowe. Wyzwania te mogą negatywnie wpływać na jakość życia mieszkańców, podkreślając potrzebę zwiększonego zaangażowania interesariuszy we wdrażanie zasad zrównoważonego rozwoju. Niniejszy artykuł ma na celu zidentyfikowanie czynników. które promują wyższy poziom partycypacji społecznej. Badania przeprowadzone w 33 polskich miastach posłużyły do opracowania indeksu partycypacji na poziomie lokalnym (ILLP). Analiza wykazała, że wartości ILLP zależą od wielkości miasta i lokalizacji w określonych makroregionach. Większe miasta i aglomeracje wykazują wyższy poziom zaangażowania interesariuszy w porównaniu do miast średniej wielkości, co sugeruje korelację między rozwojem społeczno-gospodarczym a partycypacją. Ponadto położenie w wysoko rozwiniętym regionie sprzyja większemu zaangażowaniu obywateli. Miasta o niskim poziomie partycypacji powinny skupić się na poprawie jakości życia ipodnoszeniu świadomości na temat znaczenia partycypacji w zrównoważonej transformacji miast.

SŁOWA KLUCZOWE: partycypacja społeczna, jakość życia, zrównoważony rozwój

DOI: 10.34659/eis.2025.92.1.1032