INTERNATIONAL JOURNAL OF
SCIENTIFIC RESEARCH AND INNOVATIVE STUDIES
IJSRIS journal
ISSN: 2820-7157
Advancing Knowledge, Inspiring Innovation
www.ijsrisjournal.com
INDEXED JOURNAL
PEER REVIEWED Rigorous & Transparent
DOI: CROSSREF Member
OPEN ACCESS For Global Visibility
BI-MONTHLY Timely Publication
WIDE READERSHIP High Impact & Visibility
AUTHOR FRIENDLY Fast | Supportive | Reliable
RECEIVED 17 September
ACCEPTED 09 October
PUBLISHED 1 November 2026
September 2026
Volume 5
Number 6
Pages from 402 to 408

Social Innovation and Quality of Life as Drivers of Sustainable Territorial Development: Evidence from Smart Cities

A territorial engineering approach to social cohesion and place-based development

Ahmed Morachid

LARNED Laboratory, FSJES, University of Hassan II, Casablanca, Morocco, rjmorachid@gmail.com

LICENSE
This article is licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0).
https://creativecommons.org/licenses/by/4.0/
Crossref doi
PREFIX : 10.63883
IJSRIS JOURNAL
OPEN ACCESS
This is an open access article distributed under the terms of open access.

ABSTRACT

Social innovation and quality of life are increasingly used to describe the public value sought by smart-city strategies. Their contribution to sustainable territorial development depends, however, on whether institutions can translate community needs into coordinated, place-based action. This article examines residents' perceptions of social cohesion, social innovation and quality of life in a thesis survey on territorial intelligence in Rabat (N = 349), and develops a territorial engineering framework for linking social priorities to implementation. The thesis reports composite response distributions for social cohesion (38.2% agreement, 35.6% neutral and 25.6% disagreement), quality of life (44.2% agreement, 26.1% neutral and 28.7% disagreement), and social innovation (45.7% agreement, 29.0% neutral and 23.3% disagreement). Item-level findings identify a tension between perceived community belonging and weaker assessments of social services, inter-community harmony and support for anti-exclusion initiatives. Perceived quality of life was relatively positive for basic infrastructure and access to green and recreational spaces, while health and education services drew more mixed responses. The three scales showed thesis-reported Cronbach's alpha values of .743, .818 and .834, respectively. These descriptive results do not establish that social innovation causes improved quality of life or territorial sustainability. The article proposes a four-stage territorial engineering cycle listen and diagnose, co-design, coordinate place-based

projects, and evaluate and adapt supported by multidimensional indicators and resident feedback. It offers a research and planning framework for future implementation, rather than a causal evaluation of smart-city intervention.

Keywords: social innovation; social cohesion; quality of life; territorial development; territorial engineering; smart cities; Rabat; Morocco

1. INTRODUCTION

Smart-city development is often associated with technological modernization, infrastructure and administrative efficiency. Sustainable territorial development requires a broader test: whether public action improves people's living conditions, strengthens social relationships and reduces place-based disparities. Recent research on smart cities connects social cohesion, quality of life, accessibility and inclusive governance to the legitimacy and durability of urban transformation (Caragliu & Del Bo, 2023; Colding et al., 2024; Huang et al., 2025). Quality of life is both a social outcome of city policy and a resource that can support civic confidence and territorial attractiveness (Pazos-García et al., 2025).

Social innovation refers here to new or adapted practices, services and forms of collaboration that respond to unmet social needs and build residents' capacity to shape local solutions. It may involve public agencies, community associations, social enterprises, universities and private organizations. Its effects are contingent on context: initiatives need resources, institutional support, partnerships and a route from local experimentation to durable service or planning change (Christmann et al., 2024; Tóth & Varga, 2024). Social innovation is therefore not simply the presence of projects; it is a territorial process that links community knowledge to decisions and implementation.

Territorial engineering provides that implementation bridge. In this article, the term denotes the organized work of diagnosing local conditions, aligning actors and resources, designing place-based interventions, coordinating delivery and monitoring outcomes. It helps ensure that social innovation is connected to public services, neighbourhood planning and territorial development objectives rather than remaining an isolated pilot. Moroccan research similarly points to the mediating role of territory in the relationship between social innovation and territorial development (El Ghoufi, 2023).

This article draws on the descriptive findings of a questionnaire-based thesis study on territorial intelligence and development in Rabat. It asks: (1) how do respondents assess social cohesion, social innovation and quality of life; (2) which social and territorial priorities emerge from these perceptions; and (3) how can territorial engineering connect those priorities to sustainable urban action? The study is perception-based. It does not measure the causal impact of an intervention, and no causal effects are claimed here.

2. CONCEPTUAL FOUNDATIONS

2.1 Social innovation as a territorial process

Social innovation is most useful for territorial development when it changes how a need is recognized, who participates in addressing it and how the resulting service or practice is sustained. Community initiatives can generate new networks, local services, mutual aid and institutional learning, but the scale and durability of these outcomes depend on enabling conditions and power relationships (Christmann et al., 2024; OECD, 2024e; Salinger et al., 2024). Research on social innovation potential and quality of life likewise emphasizes the role of local human and organizational capacities in translating innovation into well-being (Tóth & Varga, 2024).

Territorial engineering makes these conditions operational. A project begins with a spatial and social diagnosis, identifies the groups and places affected, and specifies responsibilities, costs, delivery partners and evaluation criteria. It then links experimentation to planning and service budgets. This approach is consistent with place-based territorial development, where contextual knowledge and coordination across institutions are treated as core resources (OECD, 2024a; El Ghoufi, 2023).

2.2 Social cohesion and collective capacity

Social cohesion includes a sense of belonging, trust, positive relations between communities, access to responsive services, inclusion and safety. It is multidimensional and cannot be inferred from one indicator. Built-environment conditions and access to everyday services can shape opportunities for interaction and collective life; neighbourhood-level research links proximity and social cohesion, while also calling for equitable access to daily destinations (Mombelli et al., 2025). Participatory design can create opportunities for shared work and social capital, although effect sizes and local conditions need careful interpretation (Salinger et al., 2024).

A territorial approach asks where cohesion is strongest or weakest, which residents experience barriers, and how social infrastructure—public facilities, associations, cultural venues, parks and accessible services—supports connection. It also recognizes that community belonging can coexist with dissatisfaction about public services or inter-community

relations. This distinction is important for planning: one positive dimension does not cancel out a service gap in another.

2.3 Quality of life as a multidimensional territorial outcome

Quality of life encompasses material conditions and lived experience, including environmental quality, basic infrastructure, health and education, access to recreation and culture, safety, social relationships and life satisfaction. Smart-city indicator reviews emphasize the need to integrate social and environmental dimensions with economic, governance and technology measures (Parra-Pulido et al., 2024). Local well-being frameworks similarly encourage monitoring several dimensions and territorial differences rather than relying on a single composite ranking (OECD, 2024b, 2025).

The implication for territorial engineering is that investment choices should be assessed in terms of their distribution and their contribution to residents' everyday lives. A new facility may increase provision but remain inaccessible to some groups; a social project may improve a local relationship while lacking long-term institutional support. Measuring both objective service access and subjective experience helps planning teams identify such mismatches (Sobhaninia et al., 2024; OECD, 2024b).

3. DATA AND METHODS

3.1 Study basis

The article uses the thesis' published frequency tables for three five-item dimensions: social cohesion, quality of life and social innovation. The thesis reports an overall sample of 349 respondents. Valid response counts differ across individual items because of missing responses; the composite tables for these three dimensions each report 348 valid cases and one system-missing case. No respondent-level file was reanalysed for this manuscript. Percentages below are transcribed from the thesis tables and rounded as reported.

3.2 Measurement diagnostics

The thesis reports Cronbach's alpha of .743 for social cohesion, .818 for quality of life, and .834 for social innovation, each based on five items. The quality-of-life and social-innovation dimensions have KMO values of .815 and .833, respectively, with significant Bartlett tests. The statistics are reported as thesis diagnostics and support descriptive use of the scales; they do not demonstrate causal relationships. The thesis' broader confirmatory model reports RMSEA = .251, indicating poor global fit. Accordingly, no structural paths from that model are used here as confirmatory evidence.

3.3 Analytical approach

For the composite distributions, the two disagreement categories are combined, as are the two agreement categories; neutrality and "do not know" remain separate. The article interprets these distributions alongside selected item-level results. The framework and propositions are analytical proposals for future territorial planning and empirical testing.

4. RESULTS

4.1 Composite perceptions

Across the five-item social-cohesion scale, agreement was 38.2%, neutrality 35.6%, disagreement 25.6% and "do not know" 0.6%. The large neutral share points to varied or uncertain perceptions. Quality-of-life items received 44.2% agreement, 26.1% neutrality and 28.7% disagreement, with 0.9% "do not know." Social innovation received 45.7% agreement, 29.0% neutrality and 23.3% disagreement, with 2.0% "do not know." These modest differences are descriptive; the scale averages should not be interpreted as statistically significant comparisons.

Table 1: Thesis-reported composite response distributions and internal consistency. Disagreement and agreement combine the two respective Likert categories. Valid n = 348 for each composite distribution.

Dimension (five-item mean)	Disagree (%)	Neutral (%)	Agree (%)	Do not know (%)	Cronbach α
Social cohesion	25.6	35.6	38.2	0.6	0.743
Quality of life	28.7	26.1	44.2	0.9	0.818
Social innovation	23.3	29.0	45.7	2.0	0.834

4.2 Cohesion: belonging alongside concerns about services

The strongest positive cohesion signal was the sense of belonging: 44.4% agreed that residents feel connected to a community, compared with 28.0% who disagreed. At the same time, 37.4% disagreed that relations among different communities are harmonious, while 30.7% agreed. Perceptions of social services were less favorable: 43.7% disagreed that available services respond to citizens' needs and 32.1% agreed. For initiatives against social exclusion, disagreement and agreement were both about one-third (33.4% each), with 23.8% neutral and 9.6% unsure. On safety,

42.3% agreed that residents feel safe and protected, compared with 35.9% who disagreed. Together, these results suggest that belonging is a relative strength, while service responsiveness, inter-community relations and inclusion remain areas for territorial assessment.

4.3 Social innovation: positive potential, uneven enabling conditions

For the overall social-innovation scale, 45.7% of responses were in agreement. Item-level perceptions were less uniformly positive. Agreement that the territory fosters new social initiatives was 32.5%, compared with 34.2% disagreement; 12.9% did not know. Agreement that social actors are encouraged to experiment with new approaches reached 35.1%, compared with 30.8% disagreement. Public support for innovative social projects drew 33.3% agreement and 29.9% disagreement. Encouragement of collaboration between social actors and private firms received 32.7% agreement, while 27.6% disagreed and 12.4% did not know. By contrast, 43.6% agreed that innovative social solutions have a positive impact on society. The gap between perceived impact and perceived support conditions suggests a planning question: how can promising local solutions receive institutional backing, partnerships and continuity?

4.4 Quality of life: everyday services and public space

Respondents were more positive about basic infrastructure and public space than about some social services. Agreement that basic infrastructure such as drinking water and sanitation is well maintained was 53.1%; disagreement was 24.7%. Agreement that residents have access to green spaces and recreation was 48.8%, while 32.2% disagreed. Cultural and leisure opportunities received 45.7% agreement and 35.1% disagreement. Health and education services received 32.7% agreement, compared with 45.1% disagreement. For a healthy and clean environment, 42.5% agreed and 38.2% disagreed. These perceptions identify concrete domains for future service mapping and participatory diagnosis, but they are not direct measurements of service quality, facility distribution or environmental conditions.

5. TERRITORIAL ENGINEERING FRAMEWORK

The article proposes a four-stage cycle that turns social perceptions into coordinated territorial action. It links community knowledge to spatial diagnosis, co-designed projects, institutional coordination and public evaluation. This is a proposed planning framework, not a programme already implemented in Rabat.

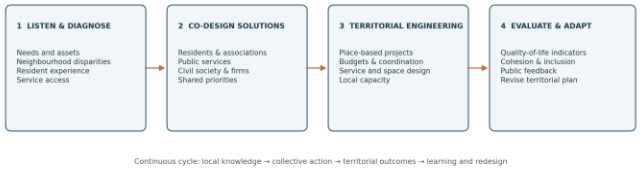

Figure 1: Proposed territorial engineering cycle for social innovation and quality of life.

5.1 Listen and diagnose

Territorial diagnosis should combine survey perceptions with objective information on service location, capacity, operating hours, cost, accessibility and travel time. Data should be mapped by neighbourhood or service catchment and disaggregated only where sample size, privacy and ethical safeguards permit. Community associations, frontline staff and residents can identify barriers that administrative indicators miss. The diagnosis should also map local assets: associations, social enterprises, cultural groups, public facilities, informal support networks and existing initiatives.

5.2 Co-design social responses

Residents and local organizations should help define the problem, success criteria and intervention design. Co-design may reveal whether a perceived service gap stems from limited availability, cost, eligibility rules, language, opening hours, transport access or low awareness. Meetings, workshops, surveys and accessible digital channels should be combined so participation does not depend on one format. Authorities should publish how resident input changed the priorities or explain why proposals were not adopted.

5.3 Coordinate projects and resources

Territorial engineering translates priorities into projects with named owners, delivery partners, budgets, timelines and maintenance plans. For example, a social-inclusion initiative may require coordination between social services, schools, health providers, community associations and local employment actors. A quality-of-life intervention may link green-space access, recreation, safety and public transport planning. Small experiments can be supported through flexible funding, then scaled only when evaluation shows relevance and local organizations can sustain delivery. The territorial plan should distinguish pilot funding from recurring operating resources.

5.4 Evaluate outcomes and adapt

Evaluation should include outputs and outcomes. Outputs include new service hours, community projects, access points and partnerships. Outcomes may include improved service completion, perceived responsiveness, participation, trust, belonging, safety and life satisfaction. Indicators should be monitored over time and across places, with baseline measures and explicit definitions. An independent or cross-sector review can assess who benefited, who remained underserved and whether the intervention displaced resources from other neighbourhoods. Public reporting and feedback should inform the next territorial plan cycle.

6. DISCUSSION

6.1 Reading the evidence without overstating causality

The thesis results do not establish that social innovation drives quality of life. The three composite scales are reported descriptively, and the manuscript has no respondent-level data for correlational or mediation analysis. The evidence instead reveals a profile of perceptions that can guide subsequent research: social innovation and quality-of-life agreement are relatively high at the composite level, while notable neutrality and disagreement remain. Item-level differences indicate where a territorial diagnosis may need to focus.

The social-cohesion pattern is especially instructive. Community belonging is comparatively favorable, but that does not imply that social services are responsive or relations across communities are harmonious. The distinction supports a multidimensional definition of cohesion that includes social infrastructure, inclusion and institutional responsiveness, not only a generalized sense of community. Likewise, the positive perception of social innovation's societal impact coexists with lower confidence about institutional support and collaboration. Territorial engineering can address this implementation gap by connecting initiatives to service responsibilities, budgets and public evaluation.

6.2 Implications for smart-city policy

Smart-city programmes should define success in terms residents can experience accessible services, safe public spaces, cultural opportunities, environmental quality and inclusive local participation. Technology can support diagnosis and coordination, but the central planning task is social and institutional. Cities need indicators that capture both place conditions and residents lived experience, with public explanations of how evidence informs investment (Parra-Pulido et al., 2024; OECD, 2024b). A smart-city dashboard should therefore report social outcomes alongside technological and economic performance.

The territorial engineering approach also encourages a shift from isolated projects to coordinated portfolios. Initiatives can be linked to neighbourhood plans, public facilities, social-service delivery and community partnerships. This makes it possible to test whether a social innovation can be sustained, transferred or adapted across local contexts without assuming that a successful pilot will automatically work everywhere (Christmann et al., 2024; Tóth & Varga, 2024).

6.3 Limitations and future research

This article uses thesis-reported aggregated frequencies and scale diagnostics. The original field dates, sampling frame and detailed respondent characteristics should be documented from the thesis records before journal submission. The analysis cannot test differences by neighbourhood or population group, identify determinants of perceptions, or estimate causal effects. The broader thesis confirmatory model reports RMSEA = .251, so its structural paths are not used as evidence of model fit. Future research should combine representative and spatially referenced survey data with service inventories, administrative data and participatory evaluation. Longitudinal or quasi-experimental designs could then test whether specific territorial-engineering interventions improve service access, cohesion or quality of life.

7. RESEARCH PROPOSITIONS

P1. Place-based social innovation initiatives with sustained institutional support and cross-sector partnerships will show stronger continuity than initiatives funded only as short-term pilots.

P2. Social-service responsiveness and accessible social infrastructure will be associated with stronger resident-reported cohesion when measured at neighbourhood level.

P3. Territorial engineering that combines resident co-design, named institutional responsibilities and outcome monitoring will improve the alignment between local social needs and public investment.

P4. Quality-of-life assessment that combines objective service access and residents' perceptions will identify territorial disparities that citywide averages conceal.

CONCLUSION

The Rabat thesis survey points to an important opportunity for smart-city planning: residents report a meaningful sense of

community and see positive potential in social innovation, while also expressing concerns about social-service responsiveness, inter-community harmony, inclusion programmes and access to quality health and education services. These results should guide further diagnosis, not be presented as proof of causal effects. The proposed territorial engineering cycle connects residents' knowledge to co-designed projects, coordinated resources and transparent evaluation. Sustainable territorial development depends on turning promising social initiatives into durable, inclusive public value and checking whether the improvements reach the places and residents who need them.

REFERENCES

Caragliu, A., & Del Bo, C. F. (2023). Smart cities and the urban digital divide. npj Urban Sustainability, 3, 43. https://doi.org/10.1038/s42949-023-00117-w

Christmann, G., Sept, A., & Richter, R. (2024). Socially innovative initiatives in deprived rural areas of Germany, Ireland and Portugal: Exploring empowerment and impact on community development. Societies, 14(5), 58. https://doi.org/10.3390/soc14050058

Colding, J., Nilsson, C., & Sjöberg, S. (2024). Smart cities for all? Bridging digital divides for socially sustainable and inclusive cities. Smart Cities, 7(3), 1044–1059. https://doi.org/10.3390/smartcities7030044

Das, D. K. (2024). Exploring an ICT-enabled participative smart city governance system: An Indian context. International Journal of Urban Sustainable Development, 16(1), 440–458. https://doi.org/10.1080/19463138.2024.2433983

Dragan, A., Creţan, R., & Bulzan, R. D. (2023). The spatial development of peripheralisation: The case of smart city projects in Romania. Area. https://doi.org/10.1111/area.12902

Du, J., Ye, X., Jankowski, P., Sanchez, T. W., & Mai, G. (2024). Artificial intelligence enabled participatory planning: A review. International Journal of Urban Sciences, 28(2), 183–210. https://doi.org/10.1080/12265934.2023.2262427

El Ghoufi, D. (2023). Using PLS-SEM to measure the mediating effect of territory in the relationship between social innovation and territorial development. International Journal of Accounting, Finance, Auditing, Management and Economics, 4(4-2), 427–443.

European Commission. (2020). New Leipzig Charter: The transformative power of cities for the common good. Publications Office of the European Union. https://ec.europa.eu/regional_policy/sources/brochure/new_leipzig_charter/new_leipzig_charter_en.pdf

European Commission. (2020). Territorial Agenda 2030: A future for all places. https://territorialagenda.eu/

Huang, S., Huang, H., He, S., & Yu, X. (2025). Shaping future home: Understanding quality of life and citizenship in smart cities. Open House International, 50(1), 139–157. https://doi.org/10.1108/OHI-12-2023-0289

Intergovernmental Panel on Climate Change. (2022). Cities, settlements and key infrastructure. In Climate change 2022: Impacts, adaptation and vulnerability (AR6 WGII, Chapter 6). Cambridge University Press. https://doi.org/10.1017/9781009325844.008

Mombelli, S., Miralles-Guasch, C., & Marquet, O. (2025). Can proximity forge strong bonds? Exploring the relationship between urban proximity and social cohesion at the neighbourhood level. Sustainable Cities and Society, 119, 106096. https://doi.org/10.1016/j.scs.2024.106096

OECD. (2024a). OECD regions and cities at a glance 2024. OECD Publishing. https://doi.org/10.1787/f42db3bf-en

OECD. (2024b). How's life? 2024: Well-being and resilience in times of crisis. OECD Publishing. https://www.oecd.org/en/publications/how-s-life_9870c393-en.html

OECD. (2025). OECD regional well-being. https://www.oecdregionalwellbeing.org/

OECD. (2024c). Digital public infrastructure for digital governments. OECD Public Governance Policy Papers. https://doi.org/10.1787/ff525dc8-en

OECD. (2024d). Governing with artificial intelligence: The state of play and way forward in core government functions. OECD Publishing. https://doi.org/10.1787/26324bc2-en

OECD. (2024e). Assessing the framework conditions for social innovation in rural areas. OECD Local Economic and Employment Development (LEED) Papers, No. 2024/02. OECD Publishing. https://doi.org/10.1787/74367d76-en

Parra-Pulido, R. A., Hernández-Peña, Y. T., & Zafra-Mejía, C. A. (2024). Systematic review of dimensions and indicators in sustainable and smart cities: Trends, interdependencies, and continental variations. Urban Science, 8(4), 202. https://doi.org/10.3390/urbansci8040202

Pazos-García, M. J., López-López, V., Iglesias-Antelo, S., & Vila-Vázquez, G. (2025). Quality of life in cities: An outcome and a resource? European Research on Management and Business Economics, 31(1), 100264. https://doi.org/10.1016/j.iedeen.2024.100264

Pelucha, M., Kveton, V., & Slavik, J. (2023). Bridging the urban-rural digital divide: Taxonomy of best practices and critical reflection on the EU countries' approach. European Planning Studies. https://doi.org/10.1080/09654313.2023.2186167

Salinger, A. P., Charles, I., Francis, N., Batagol, B., Meo-Sewabu, L., Nasir, S., Bass, A., Habsji, H., Malumu, L., Marzaman, L., Prescott, M. F., Sawailau, M. J., Syamsu, S., Taruc, R. R., Tela, A., Vakarewa, I., Wilson, A., & Sinharoy, S. S. (2024). "People are now working together for a common good": The effect on social capital of participatory design for community-level sanitation infrastructure in urban informal settlements. World Development, 174, 106449. https://doi.org/10.1016/j.worlddev.2023.106449

Sha, K., Taeihagh, A., & De Jong, M. (2024). Governing disruptive technologies for inclusive development in cities: A systematic literature review. Technological Forecasting and Social Change, 203, 123382. https://doi.org/10.1016/j.techfore.2024.123382

Sobhaninia, S., Samavati, S., & Aldrich, D. P. (2024). Designing for happiness, building for resilience: A systematic review of key factors for cities. International Journal of Urban Sustainable Development, 16(1), 360–378. https://doi.org/10.1080/19463138.2024.2412664

Tóth, G., & Varga, K. (2024). Social innovation potential and quality of life: The example of Hungarian settlements. DETUROPE, 16(2), 4–21. https://doi.org/10.32725/det.2024.008

UN-Habitat. (2022). World cities report 2022: Envisaging the future of cities. United Nations Human Settlements Programme. https://unhabitat.org/wcr/

United Nations Department of Economic and Social Affairs. (2024). United Nations e-government survey 2024: Accelerating digital transformation for sustainable development. United Nations. https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2024

United Nations Development Programme. (2024). Human development report 2023/2024: Breaking the gridlock: Reimagining cooperation in a polarized world. UNDP. https://hdr.undp.org/content/human-development-report-2023-24

United Nations. (2024). The sustainable development goals report 2024. United Nations. https://unstats.un.org/sdgs/report/2024/

World Health Organization. (2022). World mental health report: Transforming mental health for all. WHO. https://www.who.int/publications/i/item/9789240049338