

Spatial analysis of social indicators resilience of urban areas in four districts of the Kerman city

Kamandari, M^a. Ajza Shokouhi, M^{b,1}. Rahnama, M.R^c

^a PhD Student in Geography and Urban Planning Ferdowsi University of Mashhad, Mashhad, Iran.

^b Associate Professor, Department of Geography and Urban Planning, Ferdowsi University of Mashhad, Mashhad, Iran.

^c Professor, Department of Geography and Urban Planning, Ferdowsi University of Mashhad, Mashhad, Iran.

Extended Abstract

Objective: The "resilient city pattern" has been proposed as a new strategy to reduce urban vulnerability to scientific circles. Therefore, the purpose of this study is to evaluate the social resilience indicators in four areas of Kerman.

Methods: The research methodology of this research is descriptive-analytic and the type of target is among applied research. Regarding the subject matter of the research and the study area, the method of data collection was survey (survey), systematic random sampling and data collection using a questionnaire. The statistical population of the citizens of Kerman city and the sample of the selected sample from the Cochran formula is 428 questionnaires. Data analysis was performed using VIKOR technique and SPSS software.

Results: The results of the research, according to the vikor method, indicate that the urban areas of Kerman are in a different position in terms of urban alleviation indicators, so that the two areas of the city with Q (0) in total of the indicators assessed are more favorable. More than other areas. Then the area of three cities with the Q (0.370) ranked second and then the area of one city with the Q (0.852) ranked third, in the end of the four district of the city according to the social resilience index with Q (1). In other words, it is in an unfavorable position to other parts of the city. In the following, the findings of the mean indicate that it is important that the total knowledge index with average (2.6) has a better status than all other indicators in Kerman. And then, the knowledge, skills and social capital index with the mean total (2.4), (2.3), (2.1) in the next rank and finally the attitude index with an average of (1.8) is ranked fifth in the ratio of the other indicators.

Conclusion: Therefore, taking into account the above results, it can be said that the indicators of social resilience in the regions of Kerman are not suitable and more than half of the areas in Kerman against natural disasters such as earthquakes, according to the indicators of social resilience, are unsatisfactory.

Keywords: Spatial Analysis, Resilient City, Social Indicators, Kerman City.

Received: November 10, 2018

Reviewed: December 18, 2018

Accepted: January 19, 2019

Published Online: March 20, 2019

Citation: Kamandari, M., Shokouhi, M.A., Rahnama, M.R (2019). *Spatial analysis of social indicators resilience of urban areas in four districts of the Kerman city*. *Journal of Urban Social Geography*, 5(2), 69-85. (In Persian)

DOI: [10.22103/JUSG.2019.1970](https://doi.org/10.22103/JUSG.2019.1970)

¹ **Corresponding author at:** Ferdowsi University of Mashhad, P.C: 9177948974, Mashhad, Iran. E-mail address: shokouhim1@um.ac.ir (Ajza Shokouhi, M).

References:

- Abid, Mehmood (2016). *Of resilient places: planning for urban resilience*. European Planning Studies, 24(2): 407–419. (In English)
- Berkes, F (2007). *Understanding uncertainty and reducing vulnerability: lessons from resilience thinking*. Natural Hazards, 41: 283-295. (In English)
- Buckle, P., Graham, M.Syd, S (2000). *New approaches to assessing vulnerability and resilience*. Australian Journal of Emergency Management, pp.8–14. (In English)
- Chen, L.Y, Wang, T.C (2009). *Optimizing partner's choice in is/it outsourcing projects: th strategic decision of fuzzy VIKOR*. International Journal of Production Economics. 120(1). (In English)
- Cutter, S.L (2008). *A place-based model for understanding community resilience to natural disasters*. Global Environmental Change, pp.1-9. doi:10.1016/j. gloenvcha. 2008.07.013. (In English)
- Cutter, Susan Christopher., Burton, G., Christopher.T, Emrich (2011). *Disaster resilience indicators for benchmarking baseline conditions*. Journal of Homeland Security and Emergency Management, 7(1): 235–239. (In English)
- Davis, I (2004). *The application of performance targets to promote effective earthquake risk reduction strategies*. Engineering Paper No.2726 presented at the Thirteenth World Conference on Earthquakes, Vancouver, Canada, 1–6 August. (In English)
- Davis, I., Izadkhah, Y (2006). *Building resilient urban communities. Article from OHI*. 31(1), 11-21. (In English)
- Einali, Jamshid., Farahani, Hossein., Jafari, Nasrin (2014). *Assessing the role of social capital in reducing the effects of earthquake in Sajasrood - Khodabandeh*. Journal of Applied Geosciences Research, 14(32): 93-115. (In Persian)
- Folke, C (2002). *Resilience and sustainable development: building adaptive capacity in a world of transformations*. Ambio, 31(5): 437–440. [http:// www.sou.gov.se/mvb/pdf/resiliens](http://www.sou.gov.se/mvb/pdf/resiliens) (In English)
- Ghadiri, Mahmoud (2008). *The relationship between urban construction and vulnerability to earthquakes (Case study: Tehran metropolitan areas)*. Doctoral dissertation, Department of Geography and Urban Planning, Tehran: Tarbiat Modares University. (In Persian)
- Godschalk, D.R (1999). *Natural Hazard Mitigation: Recasting Disaster Policy and Planning*. Island Press, Washington, DC. (In English)
- Jalali, Tara (2012). *Resilient reconstruction from the urban design perspective after the Bam earthquake of 2004*. Master's Degree, Tehran: Shahid Beheshti University. (In Persian)
- Kärrholm, M., Nylund, K., Fuente, P. (2014). *Spatial resilience and urban planning: Addressing the interdependence of urban retail areas*. Cities, 36(24): 121–130. (In English)
- Kevin C, Desouza., Trevor H, Flanery (2013). *Designing, planning, and managing resilient cities: A conceptual framework*. Cities, 35: 89–99. (In English)
- León, J., March, A (2014). *Urban morphology as a tool for supporting tsunami rapid resilience: A case study of Talcahuano, Chile*. Habitat International, 43(25): 250–262. (In English)
- Maguire, B. Hagen, P.C (2007). *Disasters and communities: understandin social resilienc*. The Australian Journal of Emergency Management, 22: 16-20. (In English)
- Marom, W.A (2014). *Mapping and Measuring Social Vulnerabilities of Coastal areas of Bangkok and Periphery*. Proceedings of the Resilient Cities 2014 congress. Bonn. Germany. pp.29-31. (In English)
- Masten, A.S (1999). *Resilience Comes of Age. In M.D. Glantz and J.L. Johnson (eds.) Resilience and Development*. Kluwer Academic, New York, pp.281–296. (In English)
- Mayunga, J.S (2007). *Understanding and Applying the Concept of Community Disaster Resilience: A capital-based approach*. A draft working paper prepared for the summer academy for social vulnerability and resilience building, pp.22-28. (In English)
- Mileti, D.S (1999). *Disasters by design: a reassessment of natural hazards in the United States, Natural hazards and disasters*. Joseph Henry Press, Washington, DC. (In English)
- Opricovic, S., Tzeng, G.H (2004). *Compromise solution by mcdm methods: A comparative analysis of vikor and topsis*. European journal of operational research, 156: 455-455. (In English)
- Rezaei, Mohammad Reza (2011). *Explaining urban community resilience to reduce the effects of natural disasters (case study: Tehran metropolis)*. Phd dissertation, Department of Geography and Urban Planning, Tehran: Tarbiat Modares University. (In Persian)

- Salehi, Ismail., Aghababaei, Mohammad.Taghi., Sarmadi, Hajar., Behtash, Mohammad.Reza (2011). *Investigating environmental resilience using the causal network model*. Journal of Environmental Studies. 37(59): 99-112. **(In Persian)**
- Sara.Meerow, Joshua.P., Newell, Melissa.Stults (2016). *Defining urban resilience: A review*. Landscape and Urban Planning, p.38–49. **(In English)**
- Zhou, H (2009). *Resilience to natural hazards: a geographic perspective*. Natural Hazards. DOI 10.1007/s11069-009-9407-y. **(In English)**