

**LEMBAR**  
**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW**  
**KARYA ILMIAH : JURNAL ILMIAH**

Judul karya ilmiah (artikel) : The Spatio-Temporal Trends of Urban Growth and Surface Urban Heat Islands Over Two Decades in the Semarang Metropolitan Region

Jumlah Penulis : 3 penulis

Status Pengusul : Anang Wahyu Sejati, Imam Buchori, **Iwan Rudiarto**

Identitas Jurnal Ilmiah : a. Nama Jurnal : Sustainable Cities and Society  
b. Nomor ISSN : 2210-6707  
c. Vol.,no.,bulan,tahun : Vol.46, April 2019, Pages 101432  
d. Penerbit : Elsevier  
e. DOI artikel (jika ada): 10.1016/j.scs.2019.101432  
f. Alamat web jurnal : <https://www.sciencedirect.com/science/article/abs/pii/S2210670718313969>  
g. Terindeks di SJR Q1 1,356 (2019) dan SNIP 1,987 (2019)

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(beri ✓ pada kategori yang tepat)  Jurnal Ilmiah Nasional Terakreditasi  
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d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12			12,0
<b>Total = (100%)</b>	<b>40</b>			<b>38,0</b>

**Nilai Pengusul :**

Catatan Penilaian artikel oleh *Reviewer*:

- Tulisan sudah sesuai *template* jurnal seperti yang tersedia di laman jurnal yang terdiri dari; *title, authors-affiliations, abstract-keywords, introduction, study area and methods, results, discussion, conclusion, acknowledgement, dan references*. Pembahasan komponen artikel merupakan penjabaran judul artikel dan dapat dipahami langsung.
- Kedalaman pembahasan baik dengan penggunaan citra satelit landsat yang kemudian dikaitkan dengan fenomena SUHI di lokasi studi. Artikel sesuai dengan bidang ilmu penulis terutama dalam kaitannya dengan perencanaan kota dan wilayah dengan aplikasi geomatika. Pembahasan dalam artikel menggunakan sebanyak 24 sumber rujukan (47%) yang merupakan artikel jurnal.
- Sumber pustaka yang digunakan sebagian besar berasal dari artikel jurnal dengan jumlah total sebanyak 51 pustaka dimana 89% diantaranya diterbitkan di bawah 10 tahun terakhir. Metodologi

dalam analisis cukup terbaru dengan mengombinasikan metode perubahan *land use - land cover* dengan metode *cellular automata* dan SUHI untuk menilai perubahan suhu lokal sebagai dampak dari konversi lahan.

- d. Jurnal internasional bereputasi tinggi dan terindeks *Scopus* dengan SJR 1,356 tergolong dalam Q1 dengan penerbit *Elsevier*. Unsur dan kualitas jurnal dinilai lengkap dengan tautan DOI dan tersedia *online* berbayar/berlangganan.

Semarang, 17-02-2020

Reviewer 1,



Prof. Dr. Ir. Nany Yulastuti, MSP  
NIP. 195407171982032001  
Departemen PWK, FT. Undip

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	40	<input type="text"/>	<input type="text"/>	
a. Kelengkapan unsur isi artikel (10%)	4			4,0
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<b>Total = (100%)</b>	<b>40</b>			<b>36,0</b>

**Nilai Pengusul :**

Catatan Penilaian artikel oleh Reviewer:

- a. Penulisan sudah sesuai dengan Author Guidelines yang tersedia di laman jurnal. Judul artikel dengan IMRaD terkait dalam konteks perubahan *landuse land cover* dan penilaian suhu permukaan sebagai akibat dari perubahan tersebut.
- b. Artikel sesuai dengan bidang ilmu penulis terutama dalam konteks aplikasi geomatika untuk perencanaan kota dan wilayah yang berhubungan dengan perubahan suhu local. Rujukan dalam pembahasan cukup dimana 47% dari total sumber rujukan dipakai dalam pembahasan.
- c. Penggunaan pustaka kekinian sebanyak 89% dari total 51 rujukan yang dipakai dan merupakan terbitan di bawah 10 tahun. Kebaruan dalam metodologi dinilai cukup dengan mengkombinasikan

penilaian perubahan guna lahan dengan pengukuran suhu local yang juga sering dipakai dalam penelitian.

- d. Jurnal internasional bereputasi tinggi dan terindeks *Scopus* dengan SJR 1,356 (Q1) dan diterbitkan oleh *Elsevier*. Unsur kelengkapan jurnal lengkap dengan tautan DOI dan tersedia *online* berbayar/berlangganan.

Semarang, 11-02-2020

Reviewer 2,



Prof. Ir. Bakti Setiawan, M.A., Ph.D

NIP. 195906281985031006

Departemen Arsitektur dan Perencanaan, FT. UGM

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- g. Terindeks di SJR Q1 1,356 (2019) dan SNIP 1,987 (2019)

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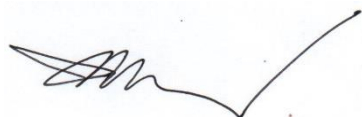
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Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Reviewer		
	Reviewer I	Reviewer II	Nilai Rata-rata
a. Kelengkapan unsur isi artikel (10%)	4,0	4,0	4,0
b. Ruang lingkup dan kedalaman pembahasan (30%)	11,0	10,0	10,5
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	11,0	11,0	11,0
d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12,0	11,0	11,5
<b>Total = (100%)</b>	<b>38,0</b>	<b>36,0</b>	<b>37,0</b>

Semarang, 20-02-2020

Reviewer 1,



Prof. Dr. Ir. Nany Yuliasuti, MSP  
 NIP. 195407171982032001  
 Departemen PWK FT.Undip

Reviewer 2,



Prof. Ir. Bakti Setiawan, M.A., Ph.D  
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<b>Nilai Pengusul :</b>				

Semarang, 20-02-2020

Reviewer 1,



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Reviewer 2,



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 Departemen Arsitektur & Perencanaan, FT. UGM

# Sustainable Cities and Society

# 43

H Index

**Country** Netherlands - [IIII](#) SJR Ranking of Netherlands

**Subject Area and Category**

- Energy
  - Renewable Energy, Sustainability and the Environment
- Engineering
  - Civil and Structural Engineering
- Social Sciences
  - Geography, Planning and Development
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**Publisher** Elsevier BV

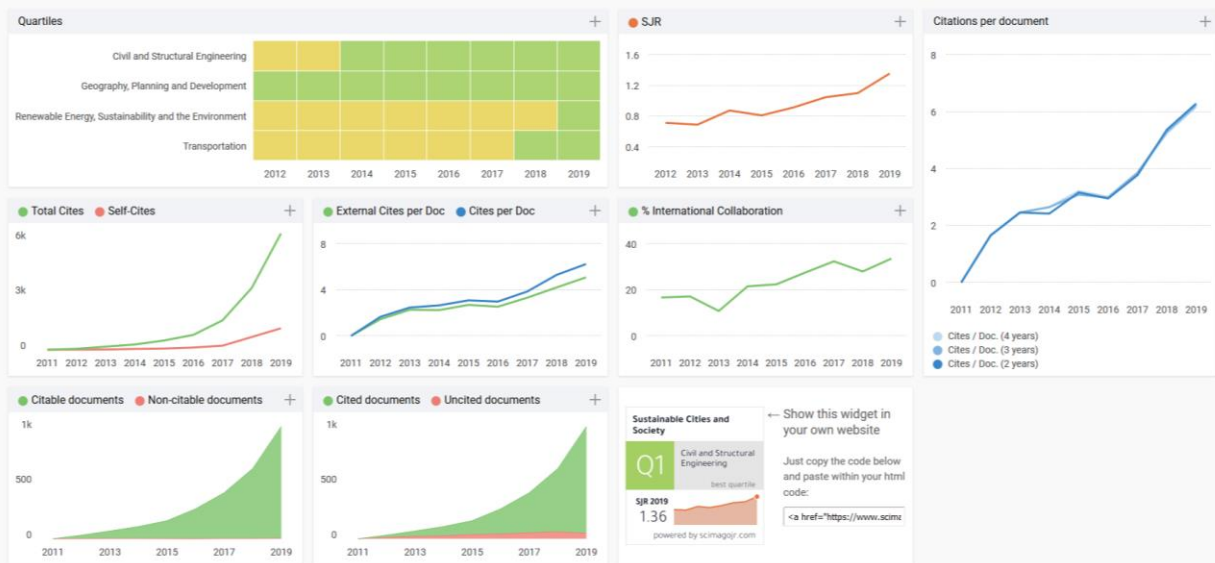
**Publication type** Journals

**ISSN** 22106707

**Coverage** 2011-2020

**Scope** Sustainable Cities and Society (SCS) is an international journal focusing on fundamental and applied research aimed at designing, understanding, and promoting environmentally sustainable and socially resilient cities. We encourage submission of cross-cutting, multi-disciplinary research in the areas of, 1. Smart cities and resilient environments; 2. Alternative/clean energy sources, energy distribution, distributed energy generation, and energy demand reduction/management; 3. Monitoring and improving air quality in built environment and cities (e.g., healthy built environment and air quality management); 4. Energy efficient, low/zero carbon, and green buildings/communities; 5. Climate change mitigation and adaptation in urban environments; 6. Green infrastructure and BMPs; 7. Environmental Footprint accounting and management; 8. Urban agriculture and forestry; 9. ICT, smart grid and intelligent infrastructure; 10. Urban design/planning, regulations, legislation, certification, economics, and policy; 11. Social aspects, impacts and resiliency of cities; 12. Behavior monitoring, analysis and change within urban communities; 13. Health monitoring and improvement; 14. Nexus issues related to sustainable cities and societies; 15. Smart city governance; 16. Decision Support Systems for trade-off and uncertainty analysis for improved management of cities and society; 17. Big data, machine learning, and artificial intelligence applications and case studies; 18. Critical infrastructure protection, including security, privacy, forensics, and reliability issues of cyber-physical systems. 19. Water footprint reduction and urban water distribution, harvesting, treatment, reuse and management; 20. Waste reduction and recycling; 21. Wastewater collection, treatment and recycling; 22. Smart, clean and healthy transportation systems and infrastructure

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

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Sustainable Cities and Society  
Volume 46, April 2019, Article number 101432

### The spatio-temporal trends of urban growth and surface urban heat islands over two decades in the Semarang Metropolitan Region (Article)

Sejati, A.W.<sup>a,b,c</sup>  Buchori, I.<sup>a,c</sup>  Rudiarto, I.<sup>a</sup>  

<sup>a</sup>Department of Urban and Regional Planning, Universitas Diponegoro, Indonesia  
<sup>b</sup>Doctoral Programme in Architecture and Urbanism, Universitas Diponegoro, Indonesia  
<sup>c</sup>Centre of Geomatics Application for Sustainable Development (CEGAS), Universitas Diponegoro, Indonesia


#### Abstract


This paper conveys the findings of a study of the development of Semarang Metropolitan Region (SMR) over two decades. The developments seen were urbanisation and its impact on Surface Urban Heat Islands (SUHI). This research used remote sensing data satellite imagery of Landsat 5 TM and Landsat 8 OLI to see land cover change from 1998 to 2018. Furthermore, to predict the land cover change, this research used a Stochastic Cellular Automata-Markov Chain (SCA-MC) algorithm. Measurements of the LST and SUHI used Landsat products with Thermal Infra-Red Sensors (TIRS) Band 10 (2018) and TIRS Band 6 (1998). The classification of the results from 1998 to 2018 indicates a widespread change in the built-up area of about 74.62%, revealing urban expansion in the SMR. Moreover, there has been a decline in the vegetation canopy of 36.14%, resulting in an increase in average surface temperature of 2–5 °C. Areas with increased surface temperatures reached more than 30 °C, which is an increase of 245.57 km<sup>2</sup> from 1998 to 2018. Furthermore, the SCA-MC prediction suggests the scenario to mitigate the SUHI through Spatial planning instruments. Thus, control of development is essential to the sustainability of the SMR, through land use planning scenarios. © 2019 Elsevier Ltd

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9  Citations in Scopus  
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#### Cited by 9 documents

Identification of the relationship between urbanization and bird nest migration using buffer and similarity analyses

Tsai, K.-T., Tung, C.-H., Deng, M.-J. (2020) *Sustainable Cities and Society*

Multiscale analysis of the correlation patterns between the urban population and construction land in China

Li, Y., Kong, X., Zhu, Z. (2020) *Sustainable Cities and Society*

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Publisher: Elsevier

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ISSN 2210-6707

# Sustainable Cities and Society

Editor-in-Chief:  
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