1. Daytime Temperature Trend Analysis in the City of Jakarta, Indonesia

Content Checked For Plagiarism:

Urban heat island phenomenon is symptomatic. Urbanization and increase in population to the When depicted in cross section, the [UHI]
increasing impact anthropogenic activities such as the phenomenon is like an island in the middle of the growth of various industries to meet the needs of the highest temperature compared to surrounding areas [8].
households in urban areas or rural areas. Increased Meanwhile, the phenomenon described in cross-sectional
anthropogenic activities have an impact on the UHI from rural through downtown to the suburbs and
development of the city as [fast as supermarket building, rural areas will then be shaped like a mountain slope and
highway, department without regard to environmental plain. Case is shown in Figure 1. sustainability. Therefore, this situation can give to the Figure 1 shows the general profile of UHI in calm society’s loss terumanya aspects of thermal comfort, weather conditions [9]. Profile UHI phenomenon began in
health and energy consumption [1]. the rural areas that are characterized by a lot of greenery.
Environmental quality of the less well every year This should give effect to the reduction in temperature in
[2]. One of the urban heat effect is increased and thus the area. Then, through a suburban area characterized by
temperature in the city [3]. Temperature changes in dense trees and buildings. This condition effects an
different urban areas in the surrounding region from a increase in temperature, thus resulting in slope in this
“heat island” or “heat island” [4, 5]. area. Furthermore, UHI profile across the center of the area is characterized by high buildings and close to an until March 2012. A total of 26 stations were selected
impact on the occurrence of hot peak in the CBD. Next, go along the north-south and 20 stations along the east-west
back to the suburbs with lower temperature gradients traverses.
menyebeban formation. Eventually reach rural areas with lower temperatures. RESULTS AND DISCUSSION
This phenomenon is very important and has become a phenomenon that needs serious attention, because it is The North-South Temperature Traverse: The study could have an impact on society discomfort [10]. It found that the monthly average daytime temperature Intergovernmental Panel on Climate Change (IPCC) and the traverse in Jakarta City or the north-south direction is United Nations Environments Programme (UNEP) is an 24.9°C with the CV (coefficient of variance) of 2.4, where institution set up by the World Meteorological the average highest temperature of 36.2°C was recorded at Organization (WMO) in 1988. Both the board explained the Samantabadra STAB station, while the lowest that one factor that is very climate impact on community temperature of 32.5°C was recorded at Castle Hill station. It is experienced increased significantly as temperature. Mention. The average monthly temperature in November Currently estimated surface temperature increase is the lowest at 33.4°C, while the highest of 36.2°C was around 2-3°C per year. Accordingly, the description is observed in October. However, the temperature for this paper is the month the temperature trend during the December showed a small variation across all stations. Day in the city of Jakarta. This is illustrated by the small value of CV (coefficient of Method study: temperature traverse measurement is a between the highest and lowest temperature therefore the technique that is carried out while on the move. By using UHII was only 3.3°C. The temperature traverse by month motorcycles were carried out manually and move from the varied is the month of January with the CV equal to 4.8. Instation to the last station in Jakarta for two traverses During this month temperatures recorded as low as 31.3°C i.e. north-south and east-west, hidroanemometer and at the Castle Hill Marina Ancol station and as high as global positioning system (GPS). Measurements were 37.4°C in Samantabadra STAB station. Therefore, the carried out by using the study was conducted during the temperature difference was recorded rather large which day at 11.00 until 13.00 West Indonesian Time (WIB). was 5.6°C. For the other months, the temperature According to Iskandar [12] 11:00 - 13:00 hours is the measurements showed a moderately high rate with the CV hottest hours during the City in Jakarta. In detail, this of between 3.0 to 4.0. The average monthly temperature study was conducted on holidays (HC) and weekdays traverses illustrated in Figure 2, while temperature (HK) for six months, which was started in October 2011 traverses by month illustrated in Figure 2.

Report generated by smallseotools.com
Plagiarism Scan Report

Summary

<table>
<thead>
<tr>
<th>Report Generated Date</th>
<th>07 Feb, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagiarism Status</td>
<td>100% Unique</td>
</tr>
<tr>
<td>Total Words</td>
<td>546</td>
</tr>
<tr>
<td>Total Characters</td>
<td>3501</td>
</tr>
<tr>
<td>Any Ignore Url Used</td>
<td></td>
</tr>
</tbody>
</table>

Content Checked For Plagiarism:

...
Different in

difference between stations was relatively small back in February with the CV 2.6. Based on this, therefore the
only 4.7°C (average temperature between the lowest and temperature difference between the highest and lowest
the highest). Meanwhile, the average minimum temperature was only 4.0°C. Moreover, the temperature
temperature was calculated for about 32.2°C with the CV variation by month showed that the month of November
of 1.6 which was lower by 1.5 as compared with the varied significantly with the CV of 6.7. This lowest
maximum temperature. However, it distributed according temperatures was recorded at
29.6°C at the Sahid
to all stations were not much different which was only University station and the highest was
39.3°C at the
1.8°C. Triloka Complex station. Therefore, the different in
Furthermore, the results showed that the north-south temperature was recorded relatively large that was 3.7°C.
temperature traverse on weekdays during the day in the for the other months, the
temperature displayed a
city of Jakarta was 35.3°C with the CV of 3.0, where the moderately high rate with the CV
of between 3.0 to 5.0.
the highest temperature of 36.9°C recorded at the further study showed an average maximum
Samantabada STAB station, while the lowest temperature temperature of 37.6°C with the
CV of 3.4. This value
of 32.4°C recorded at The Castle Hill Mantion Ancol. indicated that the maximum temperature difference
On a monthly basis, the lowest temperature was observed recorded between stations was relatively small that was
only 4.9°C. Meanwhile the average minimum temperature lowest at 30.4°C, while October was the greatest month of
33.1°C with the CV of 2.2 at a value higher than the 36.0°C. Further analysis was found that the November
maximum temperature. However, temperature variation temperature distribution was not different significantly as
according to all stations was not significant, which was shown by the CV value of 2.1. Temperature difference
comparable with the maximum temperature difference of between the highest and lowest
temperature was only
4.9°C. About 3.1°C. However, December showed a larger
The study found that the daytime temperature difference as shown by the CV of 4.4. The
traverse on holidays or the north-south traverse in lowest temperature in December was
32.1°C as recorded at
Jakarta City was 34.4°C with the CV of 3.8, where the the Paddy Keranji Bridge station and
up to 38.4°C as
average highest temperature was recorded around 35.6°C recorded at the Kalimalang Sower School. Based on this
at the Samantabadre STAB station, while the average low finding, therefore large
temperature difference was
temperature of 32.3°C was recorded at the station calculated that was 6.3°C or it was
greater it 3.2°C from the
Castle Hill Mention Ancol. On a monthly basis, the lowest November temperature
difference.. For the other months
average temperature was in November that was 35.5°C, it showed a moderately low
temperature differences with
meanwhile the average temperature in October was the the CV values between 2.2 to 2.9
only.
highest that was 35.5°C. However, the temperature The main reason of the low
temperature in the area is
distribution in November and December was not much due to rain during the
measurements taken at the fruit
different as shown by the CV of only 2.7. This showed Handyman station. Furthermore, the
area was located near
that the temperature difference between the highest and the river and therefore the
CV 5.4. In the lowest recorded temperature was found at temperature of 36.4°C with the CV of 2.3. As a result of a difference between 30.7°C at the station of East Castle Hill Station and 38.6°C as recorded at the Western Cape Road stations was recorded only about 3.1°C. Meanwhile the temperature difference was quite small. Minimum temperature was calculated for about 7.5°C. For the other months, temperature difference 30.4°C with the CV 2.1. Thus, the calculated temperature was recorded moderately with CV values between 3.0 to difference was only about 3.1°C. 5.0 only. Generally, the weekdays and weekends average temperature was observed in addition, the study found an average maximum temperature was calculated at the same strength. The temperature of 36.6°C with the CV of 3.2. This value highest average maximum temperature was observed in October and March. As we know, both October and March are the period of transition from the two seasons, small, difference by only 4.0°C. Meanwhile the average rainy and dry season in Indonesia. The month of October minimum temperature was calculated at 31.3°C with the CV is a time of transition from the dry season to rainy season.

2.7 and this value was lower by 0.5 as compared with March. Meanwhile the month of October is a time of transition from the CV of the maximum temperature. Therefore, the rainy season to the dry season. Thus, it has an impact on the occurrence of high temperatures in the study area.

Furthermore, the temperature traverse on holidays. Based on this study, it showed that the distribution in Jakarta City was also studied. The observed temperature of 36°C in Jakarta City was 33.9°C, with the CV of 1.2, where the is considered very high, particularly in the HK to give an average highest temperature of 34.4°C was recorded at the impact on the discomfort among dwellers in the Kawang and Pancoran Carreour station, while the lowest Jakarta City. According to Givoni (13) the UHII in the average temperature of 33.1°C was recorded at the subtropical reach 3°C to 5°C in the daytime. Therefore, the stations of Craftsmen Kalimalang, the average temperature of November was reasonably high. The present finding was accordance.
temperature was observed in the months of October and during urban heat island willyah Jabotabek.
March. This is due to the fact that both October and Disertasi Sekolah Pascasarjana Institut Pertanian
March are the time of transition from the two seasons, Bogor. (Bahan tidak terbit).
average urban heat island intensity or the north-south Daytime urban heat island effect in high-rise and
temperature traverse was only 2.0°C while the east-west high-density residential
developments in Hong Kong.
temperature traverse was equal to 0.7°C. UHII values in Kong. Journal of Energy Build, 36:
525-534.
the study area increased from time to time. Therefore, it 10. Intergovernmental Panel on
Climate Change (IPCC),
must be an effort to address an increase urban 2007, Climate Change 2007: Impact,
Adaptation and
temperature in order to reduce the UHI phenomenon in Vulnerability, Summary For Policy
Makers, 4
the City of Jakarta.