



## INFLUENCES OF URBAN GROWTH ON URBAN HEAT ISLAND IN KUCHING CITY IN YEAR OF 2005 UNTIL 2017

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### Article Info:

#### Article history:

Received date: 01.10.2021

Revised date: 01.11.2021

Accepted date: 15.11.2021

Published date: 01.12.2021

#### To cite this document:

Ali, A. S., & Zaini, F. (2021). Influences of Urban Growth on Urban Heat Island in Kuching City in Year of 2005 until 2017. *Journal of Tourism Hospitality and Environment Management*, 6 (26), 233-241.

DOI: 10.35631/JTHERM.626021.

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### Abstract:

Urbanization has contributed significantly to global warming. Kuching city has grown rapidly in recent years as a result of favourable socioeconomic, political, and physical factors that will undoubtedly affect the urban climate and environment. Landsat Thematic Mapper (ETM+) imagery from 2005, 2010, 2016, and 2017 was used to determine the urban heat island effect by examining the relationship between land-use changes and land surface temperature (LST). The study discovered a significant increase in the built-up area of about 17.1 percent between 2005 and 2017 and a decline in barren land and vegetation areas of about 41.6 percent and 5.1 percent, respectively. Additionally, this study discovered that as land use changed from 2005 to 2017, the LST increased year after year. The findings of this study demonstrate that they are effective tools for urban planners and environmental scientists because they provide critical data for monitoring urban growth patterns and their impact on urban climate.

### Keywords:

Urban Heat Island (UHI), Land Surface Temperature (LST), Landsat Thematic Mapper (ETM+)

### Introduction

In many developing countries today, urban growth is viewed as a series of unresolved problems as a result of a variety of intense factors, including socioeconomic patterns, physical characteristics, and political dynamics. When there is urban growth, it indicates a tremendous