



The impact of climate change on urbanization: A case study on two Egyptian Governorates ■ ■ (Dakahlia and Ismailia) ■

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Brief Description

Urbanization is defined as “a socio-economic process that shifts the spatial distribution of the ■ population from rural to urban areas ” (Montgomery, 2003; UNDESA, 2019, P.3).

Thus, bringing ■ about changes in dominant occupations, lifestyle, culture and behaviour.

Additionally, it changes ■ the demographic structure of urban and rural areas, leading to an increase in the area and ■ population of metropolitan cities compared to rural areas.

Urbanization is formed through the ■ development of cities, making them a centre for transport, trade and information flow.

A close ■ link between urbanization and economic growth appears by attracting residents to cities that ■ provide diverse opportunities for education and work, especially in the sectors of Industry and ■ services.

Urbanization can be planned or spontaneous.

Each has its determinants; planned ■ urbanization might have disparate economic, social, and climate determinants.

However, if ■ urbanization is unplanned, its main determinants are internal migration and natural increase.

■ Climate change, including the scarcity of precipitations, heat stress, and moisture level change, ■ might harm agriculture and push agricultural labour to migrate to urban areas. ■

Additionally, studying the impact of climate change is scarce at the level of the Egyptian ■ Governorates.

Our study aims to estimate the effect of heat stress, moisture level, and ■ precipitation on the urbanization degree (percentage of the urban population).

The analysis will be ■ focused on two Egyptian governorates (Dakahlia and Ismailia) from 2000 to 2020.

The chosen ■ Governates include urban and rural areas.

The analysis will draw on the compiled data on ■ climate conditions from the Annual Bulletin of Environment Statistics, CAPMAS.

The data on ■ the urbanization degree are pooled from the Statistical Year Book, CAPMAS.

We will use time ■ series regression to estimate the plausible impact of climate change in the two governorates under ■ study.

For future research, the study will be extended to cover the remaining Egyptian ■ Governorates, including rural and urban areas ■.

Abstract

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Urbanization is formed through the development of cities, making them a centre for transport, trade and ■ information flow. A close link between urbanization and economic growth appears by attracting residents to ■ cities that provide diverse opportunities for education and work, especially in the sectors of Industry and ■ services. Urbanization can be planned or spontaneous. Each has its determinants; planned urbanization might ■ have disparate economic, social, and climate determinants. However, if urbanization is unplanned, its main ■ determinants are internal migration and natural increase. Climate change, including the scarcity of precipitations, ■ heat stress, and moisture level change, might harm



agriculture and push agricultural labour to migrate to urban areas. Additionally, studying the impact of climate change is scarce at the level of the Egyptian Governorates. Our study aims to estimate the effect of heat stress, moisture level, and precipitation on the urbanization degree (percentage of the urban population). The analysis will be focused on two Egyptian governorates (Dakahlia and Ismailia) from 2000 to 2020. The chosen Governorates include urban and rural areas. The analysis will draw on the compiled data on climate conditions from the Annual Bulletin of Environment Statistics, CAPMAS. The data on the urbanization degree are pooled from the Statistical Year Book, CAPMAS. We will use Autoregressive Distributed Lag Model (ARDL) to estimate the plausible impact of climate change in the two governorates under study. The results show that maximum temperature and humidity significantly affect urbanization in Dakahlia. However, the effect of the lagged values of urbanization is the only significant variable in the Ismailia model. For future research, the study will be extended to cover the remaining Egyptian Governorates, including rural and urban areas.