



A Study Rainfall Pattern of Kolhapur District Based on Statistical Methods

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ABSTRACT:

Rainfall is an important factor that needs serious attention as Indian agriculture is drastically affected due to change in rainfall pattern. Understanding of rainfall trend is an important tool for future of agriculture. In the present study we used regression analysis techniques for the construction of predication model and the rain fall is uniformly distributed or not over the geographical region of Kolhapur district. Our study shows rain fall is not uniformly spread over the geographical region of Kolhapur district and the slope parameter estimate regression model in the predication model play an important role for future prediction of future rain fall.

KEY WORDS: Graphical Representation, Small Test, Level of significance.

INTRODUCTION:

Rainfall is a key part of hydrological cycle and alteration of its pattern directly affect the water resources, Islamet.al (2012). The changing pattern of rainfall in consequence of climate change is now concerning issues to water resource managers and hydrologists. Gajbhiye, Set.al. (2015). Srivastava et al. (2014). and Islam et al. (2012). reported that the changes of rainfall quantities and frequencies directly changing the stream flow pattern and its demand, spatiotemporal allocation of run-of, ground water reserves and soil moisture. Consequently, these changes showed the widespread consequences on the water resource, environment, terrestrial ecosystem, ocean, bio-diversity, agricultural and food security. The drought and food like hazardous events can be occurred frequently because of the extreme changes of rainfall trend Srivastava, P. et.al. (2015). Gupta et al. (2014). documented that the amount of soil moisture for crop production is totally determined by the amount of rainfall. The monsoon rainfall plays a vital role for agriculture in India. The rainfall received in an area is one of the determining factors for the socio-economic activities including agriculture, forestry and bio-diversity, water resources management, industry and tourism of the region. The changes in rainfall pattern may cause heavy floods in some areas while other areas may experience frequent droughts (IPCC, 2007). Due to the possible effects of climate change on rainfall pattern, analysis of rainfall characteristics and its long term variability has got special attention worldwide in recent years. Trend analysis of rainfall is the primary tool to understand its temporal variations. There are several studies in India on the rainfall variability and long term trends (Parthasarathy and Dhar, 1975; Mooley and Parthasarathy, 1984; Sarkar and Thapliyal, 1988; Soman et al., 1988; Thapliyal and Kulshresthra, 1991; Guhathakurta and Rajeevan, 2008; rishnakumar et al., 2009; Kumar et al., 2010; Bhatla and Tripathi, 2014). Most of these studies investigated the trends in annual and seasonal rainfall series on the country scale or in regional scales. Studies of Mooley and Parthasarathy (1984), Sarkar and Thapliyal (1988), and Thapliyal and Kulshresthra (1991) have concluded that there is no significant trend in average annual rainfall of the country. Kumar et al. (2010) have reported no significant trend for annual, seasonal and monthly rainfall over India. Similarly, there are studies those focused mainly on the trends in intensity of daily rainfall. For example, Rakhecha and Soman (1994), Sen Roy and Balling (2004), Joshi and Rajeevan (2006), Goswami et al. (2006) and Guhathakurta et al. (2010) have studied the trend in extreme rainfall. Prakash S Chougule et al (2021). A study trends of rainfall pattern of Maharashtra state based on statistical tools. In this study we study the pattern of rain fall in Kolhapur district by using statistical methods.

Objective:

- To compare pattern of taluka wise rain fall in Kolhapur district.
- To study the total rain fall of all talukas is same or not.
- To check rainfall is not uniformly distributed over the no of talukas