



University of Zabol

Graduate Management

Faculty of Water and Soil

Rangeland and watershed management group

Thesis for obtaining a master's degree in rangeland management

**Investigation of the effect of climatic factors and soil type on the growth and distribution of plant species of wild pistachio (*Pistacia atlantica*) using multivariate statistical methods in South Khorasan province**

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### ***Abstract***

*Vegetation is one of the most important natural resources of the ecosystem that is interrelated and very closely related to meteorological parameters. Multivariate statistics have been used for this purpose. First, statistics related to climate such as temperature, precipitation, wind, etc. were studied and the province's climate was zoned using the facilities and capabilities of ArcGIS program. In the next step, to reduce the volume and number of data. The most important effective factors were identified using factor analysis in SPSS software, based on which the parameters of temperature, relative humidity and rainfall in hot seasons, rainfall in cold seasons, wind speed in cold and hot seasons and dust were identified as the most important and effective parameters. The results showed that the Kriging method with a pixel size of 15 km is the most suitable method for interpolation of climatic data and South Khorasan province has 6 climatic zones including: semi-arid dust, semi-arid cold, semi-arid very hot, Warm semi-dry with rainfall In warm seasons, semi-arid, cold, highly windy, semi-arid, cold, windy and extremely dusty were zoned.*

***Keywords:*** *Vegetative Climate, Factor Analysis, Kriging, South Khorasan, Coriander*