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Geomorphotourism of Kalat Mountain: investigating the correlation between springs and geologic formations

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Extended abstract

1- Introduction

Geomorphotourism has become an increasingly important and widely discussed sub-sector of the global tourism industry, and despite debate over its definition, it is now broadly accepted that geotourism entails three main criteria. Firstly, geotourism should involve a nature-based element in which its attractions are primarily based in the natural environment and geomorphic features. Secondly, there should be an element of education, learning or appreciation between the geotourist and the attraction. Finally, geotourism should appear to be Environmentally and socio-culturally sustainable, in a way which 'enhances the natural and cultural resource base of the destination and promotes the viability of the operation'.

Geomorphotourism considering the geomorphic landforms of region causes sustainable development in the region.

In this research based on geomorphic landforms and springs of Kalat Mountain have been investigated the correlation between these features to analysis geomorphotourism potential of studied area.

2- Methodology

2-1- Study Area

The studied area located in Khorasan Razavi, with 3500 km2 area. According to the location of this area in the folded mountain of Kopeh-dagh unit, natural features and geomorphologic landforms of this region including erosional phenomena, karst features have been caused the high geotourism potential for the

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studied area. The studied region located in 36 25 to 37 19 latitudes and 59 18 to 60 29 longitudes. Figure 1 shows the location of studied area.

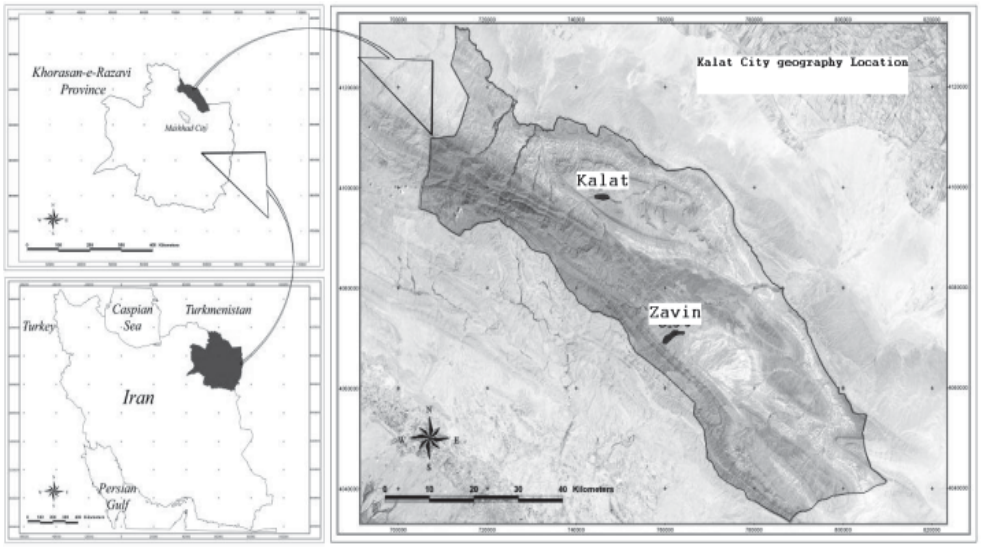

Fig. 1: the studied areas location

From geology view, in higher than 1500 m, the Jurassic formation of lime stone and dolomite are raised. In levels of lower than 1500 m, have been formed the Paleogene sediments, sandstone, shale and gypsum.

2-2- Methodology

This research has been done in three steps including geology and springs mapping, land units map preparing, classification and analyzing. To reach the purposes, geology and topography maps, aerial photos, multi-spectral imagery and RS/GIS software were used. To determine geomorphotourism locations, GPS and field operation were applied. The statistical analysis has been done for correlation and regression testing.

3- Results and Discussion

The correlation of each geological formation by Pearson test showed that there is a strong and significant correlation (R2=0.8). The analysis indicated that spring density of Shorijeh, Sanganeh, Tirgan and Mozdooran is high. Also the highest discharge concentration is in relation to Tirgan and Mozdooran geology units.

Areas with slopes greater than 15% have high potential to emergence geomorphic attractions which cover 66% of south and south west of Kalat region. Based on the findings, southern regions of Kalat Mountain have high potential of geomorphotourism comparison to north regions which located hill geomorphic type. Limestone and dolomite facies of Mozdoran geologic unit include most geomorphic attractions which back to sensitivity degree of this unit to erosion process. Karst and lime stone

features have high geomorphotourism potential in the studied area.

Ecotourism planning in the study area can be a suitable way to reach sustainable development goals in the region which improve social-economic conditions of the settlements.

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