The Relative Evaluation of Active Neotectonic Activities in the Kateh Pifak Anticline; Eyvan-e Qarb, Ilam

Reza Mansouri*[1], Samad Fotoohi[2]

1. Assistant Professor of Geomorphology, Department of Physical Geography, Faculty of Geography and Environmental Planning, University of Sistan and Baluchestan, ZAHEDAN, IRAN.
Rezamansouri@gep.usb.ac.ir

2. Associate Professor of Geomorphology, Department of Physical Geography, Faculty of Geography and Environmental Planning, University of Sistan and Baluchestan, ZAHEDAN, IRAN.
Samadfotohi@yahoo.com

ABSTRACT

The geomorphic analysis of mountain fronts, anticlines and folded belts can provide valuable insights about the recorded tectonic history of any given region. Therefore, such studies at a regional scale have been frequently undertaken using morphotectonic analysis to delineate areas having higher tectonic activity. Keteh Pifak anticline is located in the northeast of Eyvan-e-Qarb township, north of Ilam province and is considered as a part of the Zagros simply folded belt. In this study, with the aim of evaluating the active neotectonic movements in the Keteh Pifak anticline, from six geomorphic indices such as: Ratio of Valley Floor Width to Valley Height (VF), Percentage Undissected Escarpments (EU), Percentage Dissected Mountain Fronts (FD), Fold Front Sinuosity (FFS), Fold Symmetry Index (FSI), Aspect Ratio (AR) and Relative Tectonic Activity Index (Iat) have been used. The morphometry of Keteh Pifak anticline were determined using topographic maps, satellite imageries and field works. Also, the required structural, tectonically and lithologically data were obtained using geological map with 5257 sheets No and 1:100,000 scale. Results show that high values of FFS, EU, AR indices and low values of FD, VF, FSI indices indicate the young and asymmetry of this anticline, the continuation of neotectonic forces and less erosion in the anticline. Also, based on the Iat index, it was determined that this anticline is in class 3 of activity. Field evidence in the study area such as narrow valleys (V-shaped), straight, steep and faulted escarpments, asymmetric fold show that this anticline is tectonically relative active.

Keywords: Active Tectonic, Geomorphic Indices, Geomorphological Evidence, Keteh Pifak Anticline.