Settlement Patterns of the Bronze Age Sites of the Upper and Middle Atrak Basin in the Northeast of Iran

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Abstract

In archaeological studies of the region of Southwest Asia, during the period from the late fourth millennium BC to the beginning of the Iron Age (second half of the second millennium BC), phenomena such as the growth of settlements in terms of area and population, the emergence of early cities, Trans-regional trade, the formation of government institutions, the emergence and spread of gray and black pottery, extensive changes in technology and the dramatic development of the smelting industry and the use of bronze tools were identified. In this process, an extensive communication network aimed at controlling trade routes and access to raw materials across the plateau by land and sea connected many areas. Economically, in this era, trans-regional trade was established, and communities were connected thousands of miles away from home to obtain the resources they needed. Bronze Age cultures are well known in most part of Iran but Khorasan is an except and the data are rare and insufficient. Moreover, information about chronology, and distribution of sites during different periods of prehistoric times in different parts of them is very limited. In this research, 38 sites from the Bronze Age period have been studied. These sites were identified in the form of archaeological surveys of the Upper and Middle Atrak during the last decade. This study was done using descriptive-analytic method. For data analysis, GIS and SPSS software, and Correlation and Cluster analysis methods were used. Settlement pattern in the Upper and Middle Atrak basin is similar. It consists of two-level models with large site and a number of small sites around it. The results of this study indicate that due to the lack of water resources in the region, access to the constant water resources is the most important factor in shaping the Bronze age Settlements. Most sites are also formed during the Early Bronze Age, and we are faced a decrease in the number of sites in the Middle and Late Bronze Age.

Keywords: Upper and Middle Atrak; Bronze age; Settlement patterns, Correlation analysis

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1. Introduction

Settlement patterns analysis studies of archaeological sites is one of the archaeological approaches that has been highly regarded by researchers in the last three decades and examines the reasons for the formation of Archaeological sites in specific environmental contexts. Settlement patterns analysis deals with the number, size, distances and physical/spatial characteristics of sites in relation to each other and the relationship of these sites with geographical factors such as roads, rivers and soil quality or vegetation and consists of four stages: "1) surveying the site to record changes in habitat, 2) analyzing the relationship between habitat, livelihood and land use, 3) statistical analysis of density, distance and size of areas and changes in population, 4) and testing specific hypotheses about the relationship between Habitat and natural or cultural variables " . In fact, the analysis of the settlement model is based on the assumption that the formation of human settlements was not accidental; because human behaviors are always normative and patterned, and this pattern can be identified through archaeological studies.

The study area is the upper and middle Atrak river basin in northeastern Iran, a natural corridor between northern Khorasan and its central regions and in a wider perspective between Central Asia and the inland parts of the Iranian (Map 1). The Atrak Basin during the Bronze Age (half of the fourth millennium BC to the beginning of the Iron Age (second half of the millennium BC)) is surrounded by three distinct cultural traditions; In the north of the basin, in the oases and foothills of Kopet-dagh in the south of Turkmenistan, the culture of the shrine is spread with the tradition of painted buff pottery. Gonorr is introduced and identified in the Murghab Delta Basin. In the western part, it is adjacent to the gray / black pottery culture of Gorgan plain, in other words, the eastern Alborz, which is characterized by landmarks such as Turang Tappeh, Shah Tappeh and Hesar has been introduced and studied; In the southern part of the interior of Khorasan, Neishabour and Sabzevar plains, local culture with ochre painted pottery discovered from areas such as Borj Tappeh and Damghani and BMAC type cultural materials discovered from Sites such as Firoozeh town of Neishabour and Tappeh-e-Chalou have been identified. Based on surface surveys in the upper and middle Atrak basin, 38 settlements from the Bronze Age have been identified. In analyzing the pattern of settlement of these areas, environmental factors such as altitude, distance and proximity to water sources and communication routes, and the type of vegetation and soil type were measured. In this study, it was found that due to the lack of reliable water resources in the region, these resources play the most important role in the formation of settlements. In the Early Bronze Age Bronze Age, we encounter two patterns of settlement in the Upper Atrak Valley. In the first group are areas that, given their area and proximity to the heights, probably represent a livelihood of a combination of agriculture/animal husbandry. There are two relatively large areas in the cluster that probably served as the central location in the area. In the Middle Bronze Age, we encounter an interruption in the settlement in the Upper Atrak region. In the New Bronze Age, two clusters of the settlement pattern are visible. In the first cluster, there are small areas with distribution in different parts of the region with agricultural/livestock livelihood pattern, and in the cluster, there are two areas with large area and location in the center of the plain or close to communication roads, which are probably Indicates centers with commercial activities. But in the Middle Atrak region, based on cluster analysis, three settlement patterns have been identified during the Old Bronze Age. In the first group, there are areas that according to their location on the edge of the plain and near water sources and irrigable lands and rangelands, the economic method of these habitats can be assumed as agriculture/livestock. All the settlements of this cluster seem to represent small villages with an economy consisting of agriculture and animal husbandry. In the cluster, the two
settlements are located at the bottom of the plain and near water sources and irrigable lands. It seems that the areas of this cluster are large towns or villages that have been formed in different parts of the plain and some such as the Kohneh Tappeh of Qala-e-Hassan near the heights. In the third cluster, there is a site that is located at the edge of the elevation belt at the entrance of a gorge to the vast plain of the central Atrak basin. All these characteristics indicate a strategic location, especially a commercial area with high agricultural potential. Unlike the Upper Atrak, the Middle Atrak was inhabited in the Middle Bronze Age, although we see a significant decrease in the number of settlements (Table 2). During this period, 9 sites were abandoned and only two new settlements have been formed in the plain. During this stage, two clusters are visible. The first cluster consists of small villages with agricultural / livestock livelihoods that are formed linearly along water sources. Cluster Two also consists of large centers with a central location nature. In the late Bronze Age we see an increase in the number of settlements, although not as flourishing as the old Bronze Age, but 4 settlements were formed for the first time. During this stage, we encounter two clusters. In the first cluster is an area that has the characteristics of seasonal habitat and possibly livestock. In the cluster, there are two areas with no regional focus and the nature of the central location, which is located near water sources and irrigable lands, and probably their economic method has been agriculture along with the exploitation of mountainous areas.