



The role of roads as an access factor towards sustainable regional development in the Islamic era in Northwest Iran¹

Mehran Khalidi Paveh¹, Habib Shahbazi Shiran^{2*}, Behrouz Afkhami³, Ardeshir Javanmardzadeh⁴

1. PhD student in Archaeology, Department of Archaeology, Faculty of Social Sciences, University of Mohaghegh Ardabili, Ardabil, Iran.

2. Professor, Department of Archaeology, Faculty of Social Sciences, University of Mohaghegh Ardabili, Ardabil, Iran.

3. Professor, Department of Archaeology, Faculty of Social Sciences, University of Mohaghegh Ardabili, Ardabil, Iran.

4. Associate Professor, Department of Archaeology, Faculty of Social Sciences, University of Mohaghegh Ardabili, Ardabil, Iran.

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Abstract

Background and Objective: Roads are one of the most fundamental means of communication between humans, states, and cultures. Throughout different historical periods, roads have always played an important role in creating links between human societies and transmitting cultures, and their existence has been a political requirement for the development of civilizations.

Methodology: The present study, using a historical-archaeological approach, examines the spatial pattern and functions of the road system in northwest Iran during the Seljuk and Timurid periods. Due to its location at the intersection of the Central Iranian Plateau with the Caucasus and Asia Minor, this region has always been at the center of Iran's political and economic developments.

Results and Findings: The findings of the present study indicate that during the Seljuk period, the concentration of power and bureaucratic authority led to the formation of a coherent network of safe roads and road bases following a radial-centralized pattern; While in the Timurid period, with the transfer of the political center to Soltanieh and the expansion of the economic role of Tabriz, the road network acquired a multi-focal nature and encompassed diverse communication areas. Spatial and functional analysis of the data indicates that the dynamics of the road network were more than anything else subject to three key factors: the stability of the central government, the adaptation of the structure of the routes to natural features, and the level of prosperity of urban trade; finally, the road management pattern of northwestern Iran can be considered a reflection of the spatial organization of power and the mechanism of continuity of security and economy in the Islamic Middle Ages.

Keywords: "Communication networks", "Spatial organization", "Geography", "Road management", "Northwest of Iran".

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*Corresponding Author: shahbazi@uma.ac.ir

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Extended Abstract

Introduction

The emergence of roads in Iran and their related facilities has an ancient history. Roads and related buildings have been of great importance in this land since the beginning of history. In fact, Iranians have lived a nomadic and traveling life for thousands of years. On this basis, the reasons for the Iranians' tendency towards roads and road construction, and consequently their development and increase in skills in this sector, can be considered to be largely due to the conditions and characteristics prevailing in the land of Iran and its people. Roads and paths have always been vital arteries for the development of civilizations, and their study provides the opportunity to achieve a deeper understanding of the economic, cultural and social dynamics of a society. The present study, with its interdisciplinary approach, fills an important gap in the studies of economic history and historical geography. The present research method is descriptive-analytical research with a historical-spatial approach using library resources. The main goal of this research is to identify and reconstruct the communication network of northwestern Iran from the Seljuk to Timurid periods based on a combination of historical, geographical, and archaeological evidence. Therefore, the present research seeks to answer the question of what natural and geographical factors influenced the selection of road routes and the location of road facilities in northwestern Iran?.

Methodology

The present study, using a historical-archaeological approach, examines the spatial pattern and functions of the road system in northwest Iran during the Seljuk and Timurid periods. This region, due to its location at the intersection of the Central Iranian Plateau with the Caucasus and Asia Minor, has always been at the center of Iran's political and economic developments.

Results and Findings

Comparative analysis of historical data and geographical descriptions shows that the road network in northwest Iran formed one of the most coherent communication systems in Islamic Iran between the 5th and 9th centuries AH. The spatial structure of this network relied on the coexistence of three natural, political, and economic components and was rearranged in each period in accordance with the concentration of power in Azerbaijan (on the Tabriz-Zanjan axis). Reconstruction of the routes based on the location of caravanserais, bridges, and reservoirs shows that the main communication axes expanded in parallel and continuously along the major river valleys (Ajichay, Zarinehroud, Sufichay, and Qizil-Uzan) and were linked to the highways of the central plateau and the Caucasus routes. From a political perspective, the relative stability of the Seljuk and Ilkhanid states in the northwest led to the development of infrastructure; In later periods, with the breakdown of power and border insecurity, parts of this network declined or changed direction. This can be traced in the Ardabil-Meshkinshahr-Arasbaran route and also in the Tabriz-Khoi-Van axis. Northwest Iran has functioned not only as a transit area, but also as a “spatial node” in the road network of the Iranian world; the organized pattern of road administrations in this region is a direct reflection of the concentration of power, geographical continuity, and institutional maturity of Iranian states in the Middle Ages. The road in this region was not only a route of movement, but also a civilizational structure that made the formation of cities, economic interactions, and cultural dynamism of Iran possible in the Seljuk to Timurid periods.

Conclusion

Physical characteristics of the road and recognition of buildings related and unrelated to the road; recognition of turning points and understanding of road science throughout history is based on understanding the relationship between geographical features and road routing. A study of road management patterns in northwest Iran during the Seljuk and Timurid periods showed that the road and its associated facilities acted not only as transportation routes, but also as a means of reproducing political power, expanding regional trade, and cultural cohesion of Islamic territories. Spatial studies show that Tabriz, as a prominent economic and urban center, played the role of a communication hub in this multifocal system, which was a mediator between the East, the Caucasus, and Anatolia. The spatial pattern is the result of the interaction of three fundamental variables: political stability and security of the routes, the adaptation of the network structure to the natural structure of the land, and the level of economic prosperity of the cities. The combination of these factors led to the development of the northwestern Iranian highway system, in addition to its economic and military functions, to an identity and cultural dimension, and in the form of a complex spatial pattern, it became a reflection of the organization of power and the continuity of the economic life of the Iranian land between the fifth and ninth centuries AH.

Declarations

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Authors' Contribution

Authors contributed equally to the conceptualization and writing of the article. All of the authors approved the content of the manuscript and agreed on all aspects of the work declaration of competing interest none.

Conflict of Interest

The authors declare no conflict of interest.

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References

- Afshar Sistani, I. (1990). *West Azerbaijan, Volume One*. Tehran: Rayzan. (In Persian).
- Akbari, A. (2009). Comparison of the Borders of the Seljuks with the Sassanians. *Journal of History*, Issue 12, 7-23. (In Persian).
- Bayani, Sh. (2003). *History of Al-Jalayr*, second edition, Tehran: Tehran University Press. (In Persian).
- Changizadeh, F. (2013). *The Status of Roads in Iran During the Safavid Period*. Master's Thesis, Faculty of Humanities, Kharazmi University, Supervisor: Mohammad Hassan Raznahhan. (In Persian).
- Clavijo, R. (2005). *Embassy to Tamerlane (Travelogue)*. Translated by Masoud Rajabnia. Tehran: Scientific/Cultural Publications. (In Persian).
- Hafez-i Abru, A. (1993). *Zubdat al-Tawarikh*, Volume Three. Edited by Haj Seyed Kamal Seyed Javadi. Tehran: Ershad Eslami Publications. (In Persian).

- Hajilili, E., Mohammormoradi, A., & Memarian, G. (2024). Semantic Analysis of the Historical Road Phenomenon in Iran with Emphasis on Formation and Development Contexts. *Arman Shahr Architecture and Urban Planning*, No. 46, 49-66. (In Persian).
- Hosseini, A. (1963). *Tuzukat-i-Timuri*. Tehran: Asadi Publications. (In Persian).
- Kiani, M. Y. (2015). *Iranian Architecture in the Islamic Period* (13th ed.). Tehran: SAMT. (In Persian).
- Kiani, M. Y., & Kleiss, W. (1995). *Inventory of Iranian Caravanserais*. Tehran: Iran Historical Monuments Protection Organization. (In Persian).
- Mirjafari, H. (2005). *The Timurids and the Turkomans*. Isfahan: SAMT Publications. (In Persian).
- Mirkhwand. (2001). *Rawdat as-Safa*, Volume 6, Part 1. Edited by Jamsheed Kianfar. Tehran: Asatir Publications. (In Persian).
- Najafzadeh, M. (2011). Investigating the Position of the Communication Road Network Southwest of the Caspian Sea Based on Islamic Period Waystations. Master's Thesis, Faculty of Humanities, Islamic Azad University Central Tehran Branch, Supervisor: Reza Nouri Shadmehrani. (In Persian).
- Pirnia, M. K. (2013). *Introduction to the Islamic Architecture of Iran* (13th ed.). Compiled by Gholamhossein Memarian. Tehran: Naghmeh Novandish Publications. (In Persian).
- Pirnia, M. K., & Afsar, K. (1991). *Road and Ribat*. Tehran: Armin Publications. (In Persian).
- Rahmati, M., Dadigravand, M. A., Hagh Nazari, H., & Gravand, N. (2013). The Impact of the Seljuks on the Commercial and Trade Status of Neyshabur. *History of Islam*, Issue 3, 151-170. (In Persian).
- Razavi, A. (2011). *City, Politics, and Economy in the Ilkhanid Era*. Tehran: Amirkabir Publications. (In Persian).
- Reyhani Janbahan, A. (2023). Investigating the Role of Regional Rivalries on Regionalism in Northwestern Iran. Master's Thesis, Faculty of Humanities, Tarbiat Modares University, Supervisor: Ebrahim Roumina. (In Persian).
- Rostami, F., Jamshidi, B., & Gheybdan, N. (2023). Recognizing Ancient Roads and Their Role in Land Organization. *The Second International Conference of Iranian Architecture and Urban Planning Students*, 1-13. (In Persian).
- Salimi, S., & Sorkhabia, O. (2019). Archaeological Investigation of Sardasht Ancient Roads and Associated Facilities in the Islamic Period Based on Texts and Archaeological Evidence. *Iranian Archaeological Research*, No. 22, Vol. 9, 217-235. DOI: 10.22084/nbsh.2019.17403.1848 (In Persian).
- Sattarnejad, S., Taghizadeh, H., & Karimi, B. (2019). Historical and Archaeological Study of Ancient Roads in the Maragheh Region Based on Historical Texts and Archaeological Evidence (Case Study: Historical Bridges). *The Fourth National Conference on Iranian Archaeology*, University of Birjand. (In Persian).
- Shoja, R. (2025). *Roads and Road Maintenance in the Seljuk Period*. Master's Thesis, Faculty of Humanities, Tarbiat Modares University, Supervisor: Maghsoud Ali Sadeghi Gandomani. (In Persian).
- Siahpoosh, M. T. (1991). *The Genesis of Civilization in Azerbaijan, Volume One*. Tehran: Qoms Publications. (In Persian).
- Takmil Homayoun, N. (2010). *The Silk Road*. Tehran: Cultural Research Office. (In Persian).
- Zeinali-Qahani, M.A. (2022). Archaeological Survey of the Qom-Kashan Route and Its Associated Medieval Buildings, Master's Thesis, Faculty of Conservation and Restoration, University of Islamic Art, Supervisor: Ali Shojaei Esfahani. (In Persian).
- Zabanband, N. (2010). *Yanigh Culture (Kura-Aras) in Northwestern Iran*. Master's Thesis in Archaeology, University of Mohaghegh Ardabili, Supervisor: Reza Razavloo. (In Persian).