Quarterly Journal of Quantitative Economics(JQE) (2026) **23(2) 70-103**

Shahid Chamran University of Ahvaz

Quarterly Journal of Quantitative Economics

Journal Homepage: www.jqe.scu.ac.ir
Print ISSN: 2008-5850
Online ISSN: 2717-4271



Investigating the spatial spillover effect of institutional factors on reducing income inequality

Egbal mirzai *, parvin Alimoradi Afshar **, zana mozafari ***

** Master of Economics, Department of Economics, Faculty of Economics and Social Sciences, University of kurdstan, sanandaj, Iran.*
Email: *eghbal.mirzai75@gmail.com*

0000-0002-9721-7809
Postal address*: Iran, Sanandaj, Pasdaran Boulevard, University of Kurdistan, Faculty of Humanities and Social Sciences, Postal Code: 6617715175.*
*** Assistant Professor of Economics, Department of Economics, Faculty of Economics and Social Sciences, University of kurdstan, sanandaj, Iran (Corresponding Author).*
Email: *pam.afshar@uok.ac.ir*
**** Assistant Professor of Economics, Department of Economics, Faculty of Economics and Social Sciences, University of kurdstan, sanandaj, Iran.*
Email: *zana.mozaffari@gmail.com*

ARTICLE HISTORY	JEL CLASSIFICATION	KEYWORDS
Received: 05 May 2024 revision: 12 September 2024 acceptance: 04 April 2025	***C21 C23 D31 D62 O47***	***Institutional factors, inequality, spatial econometrics, economic growth.***

Further Information:
The present article is taken from Mr. Eqbal Mirzaei's master's thesis under the supervision of Dr. Parvin Ali Moradi Afshar in the Department of Economics, University of Kurdistan.

Acknowledgments: All the individuals and institutions that assisted the author in conducting this research are appreciated.
Conflict of Interest: The authors of the article states that there is no conflict of interest in publishing the presented article.

Funding: The authors have not received any financial support for the research, authorship and publication of this article.

How to Cite:
Mirzaei, Iqbal., Alimoradi Afshar, Parvin., Mozaffari, Zana (2026). Investigating the effect of spatial spillover of institutional factors on reducing income inequality. *Quarterly Journal of Quantitative Economics(JQE)*. 23 (2), 70-103. [in Persian]
10.22055/jqe.2025.46832.2624

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EXTENDED ABSTRACT

INTRODUCTION:

In recent years, the concept of inequality has expanded significantly, and various approaches to addressing it have also increased. Despite the economic growth achieved by many countries, inequality has not declined substantially and, in some cases, has even intensified. Therefore, identifying the factors that can effectively reduce inequality has always been of great interest to economists and policymakers. Among these factors, institutional quality and economic growth play key roles. Effective institutions such as transparent and efficient governance, strong property rights, and the rule of law can make a significant contribution to reducing inequality.

Recent empirical studies support this view. For instance, Aghaei, Rezaei, and Ahmadi (2023), in an article published in the Quantitative Economics Quarterly, found that improving institutional quality and good governance has a significant negative impact on income inequality in developing countries. The results indicated that the rule of law and government effectiveness were the most influential indicators in reducing inequality. Similarly, Ansari and Jafari (2022), using a spatial econometric approach, analyzed the effects of economic growth and human capital on income inequality in selected Asian countries. Their findings revealed a positive spatial spillover effect, meaning that inequality in one country can affect neighboring countries through economic and regional linkages.

Recent empirical evidence also indicates that financial inclusion can have a negative and significant effect on income inequality, while its spatial spillover effects are significant under some spatial econometric specifications (Pirzadi

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et al., 2024). Moreover, recent spatial research emphasizes the existence of interregional spillovers and the transmission of economic policies and developments from one region to neighboring regions (Khodavardi Samani et al., 2025).

According to the World Bank (2023), global inequality has been rising, hindering the full recovery of economies from the devastating effects of the COVID-19 pandemic, with poorer nations suffering the most. Increasing inequality has broad economic, social, and political consequences. Data from the World Inequality Database show that between 1980 and 2016, the top 1% of the world's population increased their income by 27%, while the bottom 50% saw only a 12% increase. The Middle East and West Asia are now among the most unequal regions in the world.

Therefore, examining the impact of institutional factors on inequality reduction in selected Asian countries during 1990–2020, using a spatial econometric approach, can provide new insights into how geographical proximity and spatial interdependence influence inequality dynamics across nations.

METHODOLOGY:

In this research, the research method is analytical and econometric. The data of this research has been collected from the World Bank, Macro Trends website and OECD website. STAT 17 software was used to estimate the model. Because in panel data, by combining data in two dimensions (time and place), it is possible to check data changes, and at the same time, the problem of colinearity is also reduced. Panel data and panel analysis allow the study of more complex behavioral models. The model used in this research is as Equation 1 follows:

Equation 1

$$INEG_{it}=a_0+a_1 Y_{it}+a_2 Ins_{it}+a_3 FI_{it}+a_4 PG_{it}+\varepsilon_{it}$$

which by expanding the institutional variables we have in Equation 2:

Equation 2

$$INEG_{it}=a_0+a_1 Y_{it}+a_2 Cor_{it}+a_3 Law_{it}+a_4 Sta_{it}+a_5 Bur_{it}+a_6 Dem_{it}+a_7 FI_{it}+a_8 P$$

Spatial effects in calculations are factors that are related to the location of variables. The first factor is the spatial dependence or autocorrelation between

the sample data observations at different points and the second factor is the spatial structure or heterogeneity created by the model relationships for movement in the plane. Coordinates change with sample data. To detect the spatiality of the data, it is necessary to perform spatial detection tests, but note that performing this test is a weakness in complex time series where it is not possible to detect spatial correlation. In this study, as stated, there are several countries that have a geographical connection with the quantifiable index, and these countries selected in this research have proximity to each other. The weight matrix is of proximity type Stata software is used to introduce the model, which uses a new method to estimate the spatial econometric model of the panel data type. With this method, we can consider a set of fixed and random models for the model, and using the Hausman test, the best model is selected from SAR, SDM, SAC, SEM, and GSPRE models. With the estimates made, the SAC model was selected and the F-Limer statistic was used to test the panel data and consolidated data. Different tests can be used to select the fixed and random effects model. Due to the spatial dependence in the research, the modeling of this research was done in the space dimension, for this reason, we use the SAC spatial panel model. To choose between fixed and random effects, the Hausman test was performed and the obtained results show that fixed effects are more efficient than random effects, so we will examine the fixed effects.

FINDINGS:

The research results show that institutional factors have positive and significant spatial effects both directly and indirectly on inequality in the studied countries. Economic growth, government stability, corruption control, democracy index and financial development have a positive and significant effect on reducing inequality.

CONCLUSION:

The quality of institutional factors improves the performance of the government by influencing the areas of freedom of expression and accountability of the government. Economic growth can create prosperity and opportunity. Strong growth creates new job opportunities that raise the incomes of the poor and increase their incentives to invest in their children. Economic growth increases the income of the entire society and creates more jobs, income and opportunities that can be redistributed. Also, financial development makes low-income people have access to financial and credit resources. An efficient financial system can direct investment to the best path.

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The research results confirm the effects of effective financial development in reducing inequality.

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