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## **Spatial inequality in Jordan**

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### **Abstract**

**Aim/purpose** – The aim of this study is to examine the spatial inequality in Jordan, amongst Jordan’s rural and urban governorates (*Muhafazat*).

**Design/methodology/approach** – This study describes and portrays comparisons between investigated administrative units in search of finding the governorates’ economic inequality. It is based on the official raw data of the Household Income and Expenditure Survey (HIES) which were created by Jordan’s Department of Statistics (DoS) in 2013-2014. It uses four indicators covering water, sewage, labour market and finance to present inequalities between rural and urban areas. In addition, it uses another four measures covering income and expenditure of the households and their members to find inequality among governorates.

**Findings** – The results indicate that although there is generally a significant inequality between rural and urban areas in Jordan, there is much more substantial inequality among governorates; people in Amman are the richest and those in Tafiela, Mafraq, and Ma’an are the poorest.

**Research implications/limitations** – Some development programs should be carried out to reduce the existing inequality to lead to the improvement of life quality of the rural areas and to support their infrastructure, as well as to provide economic opportunities. Economic decentralisation should be considered seriously, and the development programs for the governorates should be redefined.

**Originality/value/contribution** – This is the first investigation into spatial differences in intergenerational mobility in Jordan and provides critical evidence in spatial inequality of economic outcomes and infrastructure available for Jordan.

**Keywords:** regional inequality, Jordan governorates (*Muhafazat*), distribution, urban and rural areas.

**JEL Classification:** D130, R200, R280.

## 1. Introduction

Spatial inequality is one type of overall inequality. Nowadays, fighting poverty and minimising spatial inequalities occupy the top priorities of the developing countries (Alvaredo & Gasparini, 2015). Alvaredo & Piketty (2014) examine the problem from a regional perspective and present that, irrespective of the uncertainties as to within-country inequality, income and expenditure inequalities are at an extremely high level in most of the Middle East states. Demands for greater economic justice were an important reason behind Arab Spring uprisings in the Middle East (Diwan, 2013). In the Middle East, political instability has played an important role in creating spatial inequality. It is a fact that equality is inherently contradictory, and humans have never been equal, but the goal of reducing spatial inequality is to find Economic Justifications. Spatial inequality has led to economic, social, and political problems in many states around the world. Thus, economic revenues, expenditures, and levels of infrastructure are influential measures of economic growth and human development (Krafft, Assaad, Nazier, Ramadan, Vahidmanesh, & Zouari, 2017). Socio-economic transformation in developing countries, such as Jordan, is considered as one of the main reasons behind spatial inequality and imbalance (Kallioras & Petrakos, 2010). Therefore, the first step towards economic justice is to offer universal access to public services, infrastructure, education, health, water, and economic opportunities.

Jordan suffers from a high inequality among its administrative areas. In Jordan, there is a concentration of economic sources in the capital city (Amman), and consequently a concentration of Jordanians in the capital. In addition, the economic and infrastructure disparities between regions are visible in Jordan. Many scientists investigate inequality in Jordan, but only few of them examine economic inequality in governorates and urban and rural regions at the same time (Assaf, 2016; Shahateet & Al-Tayyeb, 2010). However, this study chooses its own specific eight measures to present spatial inequality in Jordan. The objective of this study is to examine the economic inequality in Jordan, between rural and urban regions and among Jordan's governorates. It also shows comparisons between investigated units in search of finding the inequality levels among the governorates. This study strives to answer the question: how big is the spatial inequality in Jordan? It assumes that there is a significant gap between the capital city and other governorates in public services and economic distribution.

This paper starts with an introduction as a background to the topic, then presents some of the previous studies, which address spatial inequality in Jordan. Section three includes the methodology and procedures. Section four is the core of the study, which discusses the data, separated into two subsections: the first one presents inequality in urban and rural areas and the second part presents the problem among governorates. Finally, the conclusions provides the main results of the work, suggestions and implications.

## **2. Literature review**

Many researchers address spatial inequality, which has recently been an accelerating phenomenon. Some studies have found that economic inequality is the reason that has led to slower economic growth (Alesina & Perotti, 1996; Persson & Tabellini, 1994). The high rate of inequality in any society means a decrease in economic growth and increase in a poverty level (UNDP-UNICEF, 2015). The Asian Development Bank Institute (Deyshappriya, 2017) in its empirical study confirms that education can play an important role in levelling income inequality because higher education gives people access to better job opportunities. Another study argues that governments, through their expenditure on infrastructures stimulate economic growth, having a positive effect on reducing the inequality gap (Calderón & Servén, 2004).

Some researchers examine spatial inequality in Jordan, such as Shahateet (2006), who indicates that economic and social plans in Jordan failed to reduce the economic inequality. There are debates about the relationship between economic growth in Jordan and regional economic inequality. Assaf (2016) concludes that Jordan's 28 years of economic growth did not indicate inequality, but the lack of development programs outside Amman. Furthermore, the World Bank (Adams, 2001) addresses poverty in Jordan and indicates that the poverty in Jordan depends on government employment as a source of income, not on farming or trading. Kharabsheh (2001) discusses population and socio-economic factors, such as household size, urban regions, household income, and economic dependency rates which were the main factors that affected the economic inequality in Jordan in a positive way. The current government development programmes are not ready to reduce the gap between Jordan's administrative units, and these programmes are not sufficient to adapt to negative shocks (Shaban, Abu-Ghaida, & Al-Naimat, 2002). An empirical study by Shahateet & Al-Tayyeb (2010) shows that poor people in Jordan are concentrated in Mafraq, Tafela and Ma'an, while rich people are concentrated in Amman.

The cases and sources of inequality are sometimes unclear. The centralisation, lack of government development programs, and investment incentives outside the capital city are the main factors in creating an economic gap among regions. Zhuang, Kanbur, & Rhee (2014) consider technological improvements, market-oriented reforms, and globalisation to be factors that improve growth opportunities, although they also argue that these factors could be a source of inequality by expanding the gap between owners and labourers, skilled workers and unskilled, rural and urban areas, and among governorates. Many economic experts state that fiscal policy and tax system are the causes of the spatial gaps (Deyshappriya, 2017). The tax structure in Jordan depends on consumption tax system, does not consider the differences between the population's income, and this leads to the increase in the income gap between Jordan's residents. Other scholars examine the impact of foreign aid and grants on economic inequality and some of them indicate that they may expand the economic gap, as the distribution of aid is a politicised process (Bjørnskov, 2010; Herzer & Nunnenkamp, 2012).

Although many researchers address the effects of spatial inequality, only some of them believe that the hindering economic growth, political instability and social trouble are the outcomes of spatial imbalance (Shahateet & Al-Tayyeb, 2010). According to Barro (2000), spatial inequality decreases economic growth in developing countries, and he argues that in the situation of spatial inequality, poor people will remain poor and rich people will always be rich. Shahateet (2006) did research about the economies of East Asian countries, particularly Japan, Hong Kong, Singapore, South Korea, and Taiwan, as an example of how economics can succeed due to spatial equal distribution among regions in these countries. Finally, many experts believe that spatial inequality impact has a negative outcome in social cohesion, economic development, education and future.

### **3. Methodology and procedure**

This study is a descriptive and comparative paper, describing the spatial inequality in Jordan's rural and urban areas as well as governorates (*Muhafazat*). It also shows comparisons among spatial units. It is based on the official raw data of the Household Income and Expenditure Survey (HIES) of 2013-2014 that were created by Jordan's Department of Statistics (DoS); the households survey is conducted every few years and covers a sample of about 15,000 families, collecting consumption data once per quarter.

Four measures in rural and urban inequality scope are used to describe the variances and how the examination is carried out:

- 1) The distribution of housing unit which depends on the Tankers as a main source of water.
- 2) The distribution of housing unit which connects to the public sewage system.
- 3) The distribution of household members who work in public administration, defence with compulsory social security, and education.
- 4) The distribution of household members who depend on the National Aid Fund (NAF) as a source of aid.

Furthermore, the study was carried out using another four measures to find a governorates' inequality scope and they are:

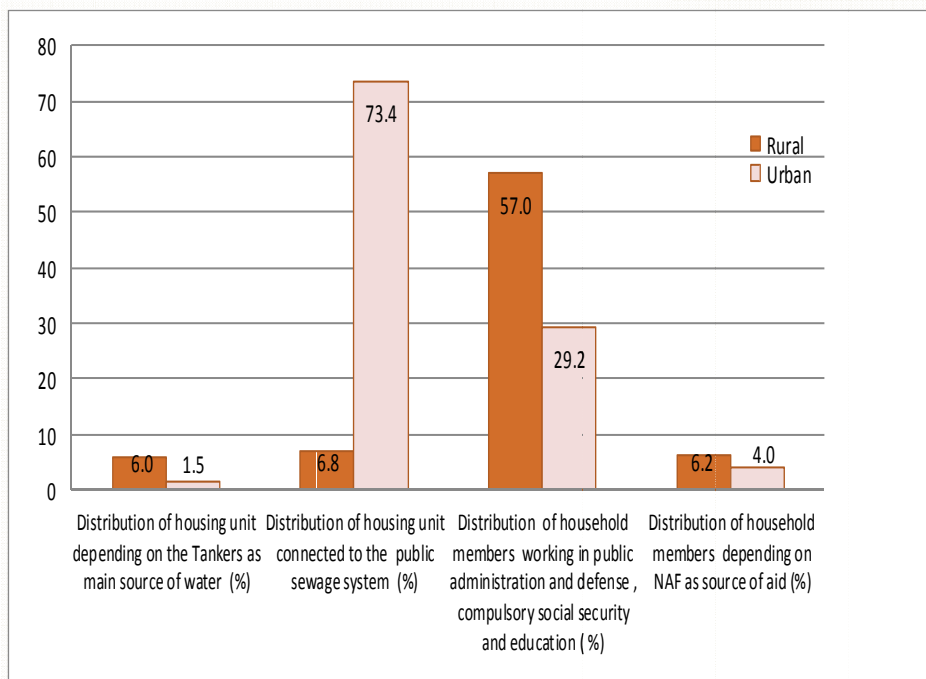
- 1) The average annual income of household members.
- 2) The distribution of households with expenditure above 14,000 JD (JD: Jordan Dinar = approximately 1.2 Euro).
- 3) The distribution of household members with expenditure above 3,000 JD.
- 4) The distribution of households which have a current income above 14,000 JD.

Those standards are used to detect if spatial inequality existed among rural and urban areas and the (twelve) governorates of Jordan, and to see the level of spatial inequality in Jordan. We chose these eight measures as the most appropriate ones (HIES) to answer the study questions and reach the study objectives.

## **4. Findings and discussion**

### **4.1. Inequality between urban and rural areas**

A rural area in Jordan is defined as “all localities with inhabitants less than 5,000 capita” (DoS, 2017), which means all localities with more than 5,000 inhabitants are considered urban. Nowadays, more than 90% of Jordan population lives in urban areas. This rate has accelerated recently, from 78% in 2004 (DoS, 2017), many experts claim that this sharp urbanisation in Jordan results from rural and urban inequality. For the purpose of finding the rate of inequality between urban and rural areas, we chose four measures to represent the most important sectors, which affect citizens of Jordan (public service water, sewage, labour market and finance), these sectors include public goods and can improve the quality of life for inhabitants.

**Figure 1.** Inequality between Jordan's areas considering selected measures

Source: DoS (2015)

Figure 1 presents the distribution of housing units which are dependent on Tankers as the main source of water, distribution of housing units which have a public sewage system, distribution of household members who work in the public administration and defence, compulsory social security and education, and lastly, the distribution of household members who are dependent on NAF as a source of aid among rural and urban inhabitants in order to illustrate the gap between the two areas. In Figure 1, X-axis value refers to the four measures and Y-axis value represents the percentage per measure.

As the above portrays, there are 6% of rural families who do not have access to the public water network and get their water from Tankers as their main source of water, while this rate among urban residents is only 1.5%. Lack of pure water means health problems among the population and leads to extra living cost for households. Also, sewage services are the most missed service in rural areas with only 6.8% of housing units that are connected to the public sewage system, whereas urban housing units which are connected to public sewage system reach a high level of 73.4%. Therefore, when sewage services are miss-

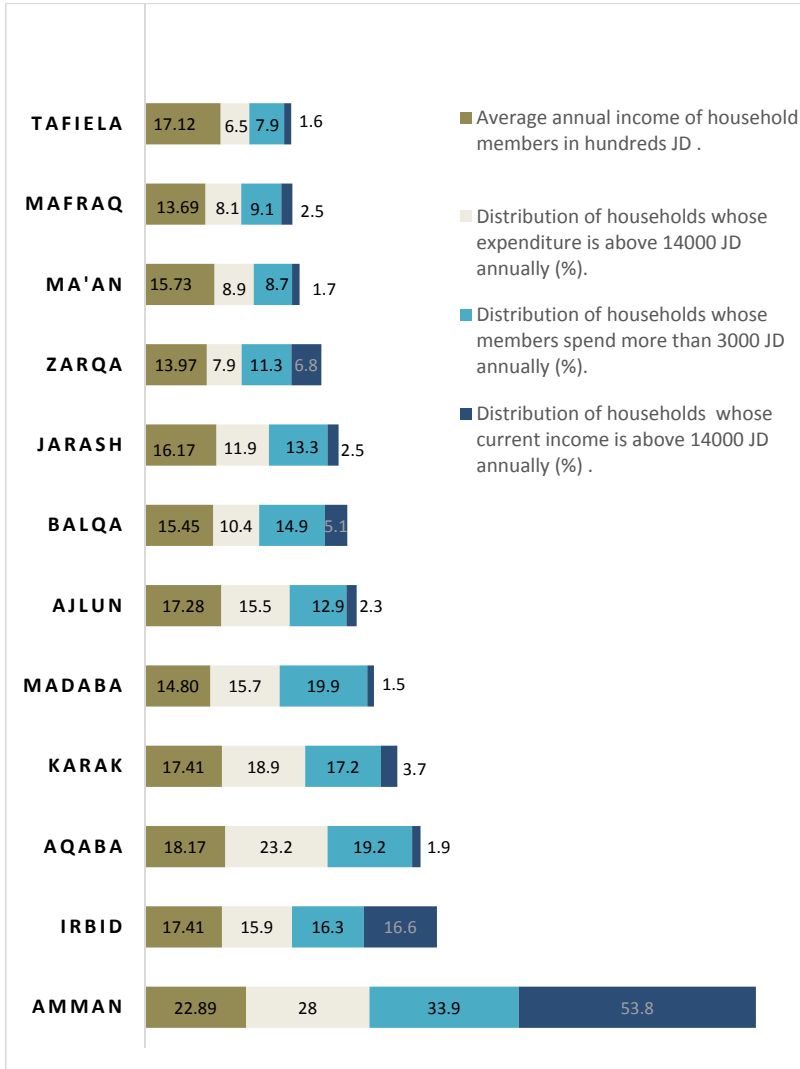
ing in rural areas, it means that environmental problems might begin to appear and diseases could occur among residents. The existence of a problem in the distribution of public services between rural and urban areas is evident.

In Jordan, workers in education, public administration and defence have the lowest monthly paid salaries (about \$500). Figure 1 presents that 57% of rural employees have a position in these sectors and 29.2% among urban employees, resulting from the outcome of economic concentration in urban areas, and that means rural inhabitants will not get the opportunity to improve their income. More than 80% of the industries and services are concentrated in Amman and its agglomeration (Potter, Darmame, Barham, & Nortcliff, 2009). Lack of diversity of work types in rural areas and a concentration of economy in urban areas definitely means the increase in the percentage of poverty in rural ones. Furthermore, the data showed by National Aid Fund (which supports the poorest people in the kingdom) confirm that the Fund is the main financial source for 6.2% of rural families and 4% of urban families. This is a critical evidence that the rate of poverty in rural areas is higher than in urban ones.

Nielsen & Alderson (1995) argue that most of the inhabitants in rural areas who work in livestock and agriculture have low income, they suffer from economic inequality all over the country. The population in rural Jordan has been leaving agriculture and the livestock sectors, since they realised that the attractive economic rates of the outcome are not in agriculture and livestock, but in the service sector (Adams, 2001, pp. 6-8). Jordan's government is spending a large part of its budget on projects that are not specifically targeting poverty (UNDP-UNICEF, 2015), so it should support rural areas and focus on rural-urban balancing.

#### **4.2. Inequality between governorates (*Muhafazat*)**

Jordan is divided into 12 governorates: Amman, Irbid, Zarqa, Balqa, Ma-fraq, Jerash, Ajloun, Madaba, Karak, Tafilah, Ma'an, and Aqaba. The capital city (Amman) is the home for about half of Jordanian population (4.5 million), and many Jordanians consider Amman as the home of rich people. In the report *Socio-economic inequality in Jordan* (UNDP-UNICEF, 2015), the author indicates that the inequality between Jordan's governorates is significantly higher than between urban and rural areas. Shahateet & Al-Tayyeb (2010) also conclude that development programs in Jordan failed in reducing inequalities between administrative units, particularly between governorates.

**Figure 2.** Inequality among Jordan's governorates in selected measures

Source: DoS (2015).

Figure 2 contains four measures to examine the inequality among governorates. These measures cover households and household members income and expenditures. We select these measures to have a clear understanding of economic development level in each governorate. In this Figure, X-axis value represents governorate's name and Y-axis value represents the sum of the four measures in percentages.



As Figure 2 shows, there are significant differences between governorates inequality in income and expenditure. Amman, as expected, is the wealthiest of governorates, whereas Tafila is the poorest one. After calculating the results for the four measures, Amman has about 138 points, while Tafila has only about 33 points, making the gap size of 105 points. In the annual income of household members measure, Amman is in the highest position with 2,289 JD per capita, while the lowest amount is in Mafrq with 1,369 JD per capita. According to the second measure, 28% of families in Amman governorate have expenditure above 14,000 JD per year, but in Tafila it is only 6.5%. Furthermore, by examining the third measure, which is the distribution of household members with expenditure above 3,000 JD per year, we find that the highest rate is 33.9% in Amman and the lowest one is in Tafila with only 7.9%. The fourth measure, the distribution of households with the current income above 14,000 JD per year, shows us that the highest rate among the population is in Amman with 53.8% and the lowest in Tafila with 1.6%.

Irbid, the second populous governorate in Jordan, comes second in rank with 1,741 JD per capita in the first measure, 15.9% in the second measure, 16.3% in the third one and 16.6% in the fourth measure. Aqaba, which was created in 1994 to be an economic hub and investment zone on the Red Sea coast and where most of its population works in tourism and trade sectors (Al Rabady, Rababeh, & Abu-Khafajah, 2014), comes in the third position among governorates with 1,817 JD, 23.2%, 19.2% and 1.9%, respectively. In the rank above the bottom is Mafrq governorate, which is located on the Syrian borders and is currently suffering from a large number of refugees who had fled during the Syrian Civil War.

Several factors along with macroeconomics, such as education, population, and labour market, identify the economic inequality (Deyshappriya, 2017). Many people argue that Amman is the most attractive city in Jordan because of the concentration of the economic sources and its political position. Also, lack of development programs and public services in other governorates has contributed to this economic inequality.

Finally, high and sustained inequality in Jordan, in particular the inequality of opportunity, can create large social costs. Inequality among governorates can significantly undermine individual's educational, health, economic, and occupational choices. Furthermore, the present inequality among governorates does not generate initiative, creativity, and loyalty among individuals and groups.

## 5. Conclusions

### 5.1. Research contribution

This study examines spatial inequality in economic outcomes and infrastructure in Jordan. It is the first investigation of spatial differences in intergenerational mobility in Jordan and it provides a critical evidence of spatial inequality of economic outcomes and infrastructure available for Jordan. We measure urban and rural areas and governorates' inequality by using (HIES) of 2013-2014 that was created by DoS. It uses measures covering public service, water, sewage, labour market, and finance. Our findings show us that spatial inequality in economic and infrastructure measures is pronounced, especially among governorates. People in Amman are the richest, while inhabitants of Tafiela, Mafraq, and Ma'an – the poorest. According to measures used in this work, there is a large spatial gap between the capital and other governorates, and between urban and rural areas.

### 5.2. Research suggestions

We suggest that some remedial actions should be taken to reduce this inequality, such as improving life quality in rural areas and supporting governorates by infrastructures and economic opportunities. Also, economic decentralisation should be considered more seriously, and governorates' development programmes should be redefined. Spatial inequality in Jordan affects the social cohesion and coherence, it slows down the economic growth and kills nationalism and democracy. The Jordan government should know and take into consideration that there is no economic prosperity and development with still existing spatial inequality.

Furthermore, we provide the Table 1 with suggested programmes that should be conducted by the government to reduce the spatial gap between governorates based on the study's examined measures:

**Table 1.** Suggestion programs for Jordan's government to reduce spatial inequality

<b>Governmental programmes to be conducted</b>	<b>Inequality's measures according to the study data</b>
<i>1</i>	<i>2</i>
Creating attractive investment environment in all governorates	Distribution of work opportunities, poverty rates, distribution of income and GDP
Decreasing the rates of poverty and unemployment in remote areas	Poverty rates, distribution of income and GDP, distribution of work opportunities
Applying independent decentralisation system in governorates	Distribution of income and GDP, life quality and public services, poverty rates

**Table 1 cont.**

<i>1</i>	<i>2</i>
Investing in infrastructure and public goods	Water source, sewage network, life quality and public services
Encouraging and financing social and individual initiatives	Distribution of work opportunities, poverty rates
Improving education level in rural areas	Poverty rates, life quality and public services
Promoting rural tourism and rural products	Poverty rates, distribution of income and GDP, Distribution of work opportunities.
Rebuilding water and sewage networks to cover all the country	Water source, sewage network

### 5.3. Limitation and future work

DoS in Jordan has no data of GDP per capita and that was the main limitation of this study. Further studies are required in spatial inequality in Jordan area; development programs in rural regions and government infrastructure projects need to be examined. Moreover, Jordan has recently started applying a decentralisation system in its governorates, but many experts argue that the decentralisation in Jordan in this form will not succeed because governorates are not economically independent, so this area also requires further research.

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