ERF Working Papers Series

Determinants of Income Inequality in Jordan

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ECONOMIC RESEARCH FORUM
منتدى البحوث الاقتصادية

Working Paper No. 1513
November 2021

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The author would like to thank Marina Hesham for excellent research assistance.

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First published in 2021 by
The Economic Research Forum (ERF)
21 Al-Sad Al-Aaly Street
Dokki, Giza
Egypt
www.erf.org.eg

Abstract

Income inequality is relatively low in Jordan when measured using the Gini index, which is the common inequality measure. However, other income inequality measures show higher levels of inequality, as the pre-tax national income share of the highest ten percent was more than 40 percent in 2016. Additionally, income inequality is expected to increase with the spread of the COVID-19 pandemic and the slowdown of economic growth. Thus, understanding income inequality and its main drivers is key to addressing it adequately and achieving inclusive growth where no one is left behind. The present paper tackles expenditure inequality in Jordan as a proxy for income by examining the main drivers of the expenditure gap between urban and rural areas and between female-headed households (FHHs) and male-headed households (MHHs) using the most recent available Households Expenditure and Income Survey (HEIS, 2017/2018). Using an Unconditional Quantile Regression (UQR), gender expenditure inequality and spatial expenditure inequality are decomposed into endowment and returns effects. The results show that the spatial expenditure gap is in favor of urban areas, and the gender gap is in favor of FHHs. The education of household heads and the geographical location of households are the key determinants of expenditure gaps between urban and rural households and between FHHs and MHHs.

Keywords: Economic inequality, unconditional quantile regression, gender gap, spatial inequality, Jordan.

JEL Classifications: D31, D63, C21.

ملخص

يعتبر عدم المساواة في الدخل منخفضًا نسبيًا في الأردن عند قياسه باستخدام مقياس عدم المساواة المشترك، مؤشر جيني. ومع ذلك، تُظهر مقاييس عدم المساواة الأخرى في الدخل مستوى أعلى من عدم المساواة حيث أن حصة الدخل القومي قبل الضريبة لأعلى 10% كانت أكثر من 40% في عام 2016؛ بالإضافة إلى ذلك، من المتوقع أن يزداد عدم المساواة في الدخل مع انتشار جائحة فيروس كورونا كوفيد 19 وتباطؤ النمو الاقتصادي. وبالتالي، يعتبر فهم عدم المساواة في الدخل ومحركاته الرئيسية عامل رئيسي لمعالجته بشكل كافي وتحقيق النمو الشامل للجميع حيث لا يتخلف أحد عن الركب. تتناول هذه الورقة عدم المساواة في الإنفاق، كبديل للدخل، في الأردن من خلال دراسة العوامل الرئيسية لفجوة الإنفاق بين المناطق الحضرية والريفية وبين الأسر التي تعولها امرأة والأسر التي يرأسها رجال باستخدام أحدث مسح متاح لإنفاق ودخل الأسر المعيشية (HEIS، 2018/2017). باستخدام الانحدار الكمي غير المشروط، يتم تقسيم عدم المساواة في الإنفاق بين الجنسين وعدم المساواة في الإنفاق المكاني إلى تأثير الوقف وتأثير العوائد. وتشير النتائج إلى أن فجوة الإنفاق المكاني تزيد فى المناطق الحضرية، وأن الفجوة بين الجنسين أكثر في الأسر التي تعولها امرأة. يعد التعليم بحسب الموقع الجغرافي لأرباب الأسر والأسر المعيشية محددات رئيسية لفجوات الإنفاق بين الأسر المعيشية فى المناطق الحضرية والمناطق الريفية وبين الأسر التي تعولها إناث والأسر التي يعولها رجال.

Introduction

Inequality is one of the broadest economic terminologies; it can be exhibited through social inequality, inequality in opportunities, and income inequality, which is the traditional measure. Based on the most recent available data, income inequality in Jordan, which is the main interest of this paper, is relatively low compared to other countries with same level of GDP per capita when measured by the most common measure: the Gini index. Income inequality seems relatively low and stagnant despite several shocks affecting the country, with a Gini of 34 since 2006 (UNDP, 2015). However, other income inequality measures show higher levels of inequality, as the pre-tax national income share of the highest ten percent was more than 40 percent in 2016 (UN-ESCWA and ERF, 2019).

The ongoing COVID-19 pandemic poses massive economic challenges both at the micro and macro levels in Jordan. According to the World Bank's Jordan Economic Update (October 2020), the real GDP growth slowed down from two percent in the first quarter of 2019 to 1.3 percent in the first quarter of 2020. The COVID-19 crisis and the defense measures restricting mobility resulted in job losses, mainly in the services and agricultural sectors (Raouf et al., 2020). According to a rapid impact assessment conducted by the International Labour Organization (ILO) and the FAFO Institute for Labour and Social Research, which included 1,580 respondents of which 46 percent were women, only four percent reported working during the lockdown. As of 1-15 April 2020, around 47 percent of the respondents who were employed before the lockdown are out of work (Kebede et al., 2020). According to the United Nations Development Programme (UNDP), the pandemic is expected to exacerbate inequality in enhanced capabilities (UNDP, 2020). Enhanced capabilities, such as access to technology, became a necessity in the 21st century. In the context of e-learning and remote working, limited access to the Internet and digital devices may result in deepening income inequality and inequality in educational outcomes.

The difference in characteristics between different groups is a main driver of inequality. Gender, education level, employment status, and geographical location are known to be the main determinants of poverty and inequality (UNDP, 2015). Expenditure per capita is higher in urban households compared to rural households (Hassine Belhaj, 2014; Ramadan et al., 2018). For the gender gap, while the average monthly wage of males is higher than that of females (Doruk and Pastore, 2020), female-headed households (FHHs) have higher expenditure per capita compared to male-headed households (MHHs) (Ramadan et al., 2018).

Understanding inequality and its drivers is necessary to design effective measures to reduce poverty, achieve inclusive growth, and accelerate progress towards the 2030 Agenda. It will also be essential for effectively responding to the impact of COVID-19 (FAO 2020; Olinto, Lara Ibarra, and Saavedra, 2014). Hence, the present paper is part of a series of working papers tackling the different types of inequality and their dimensions. The paper investigates the level of expenditure inequality, as a proxy for income, using the most recent available Households Expenditure and Income Survey (HEIS, 2017/2018). Following Hassine Belhaj (2014) and

Ramadan et al. (2018), the Unconditional Quantile Regression (UQR) approach is used to understand the key drivers of gender inequality and spatial inequality in Jordan. The selection of gender and geographical location as the main socioeconomic decomposition of expenditure inequality is driven by data limitations. The available HEIS sample represents only 50 percent of the original sample and does not include any information about the response rates or sampling weights. Thus, the results should be discussed with caution, especially when compared with results from previous surveys, as no general conclusions about the expenditure inequality trend or the whole Jordanian population can be deduced.

The paper is organized as follows: the first section provides an overview of the literature of spatial and gender income inequality in Jordan. Sections two and three describe the methodology and data used, respectively. The estimated results are presented in section four, and section five concludes.

1. Literature review

Income inequality in Jordan, as well as in other Arab countries, is considered moderate when compared to other middle-income countries using the commonly used measure of inequality (UNDP, 2015; Ramadan et al., 2018). The Gini index has decreased from 33.9 to 32.6 between 2006 and 2008, then it increased to 33.7 in 2010 (World Bank, 2016). However, according to other income inequality measures, there is a higher level of inequality as the pre-tax national income share of the highest ten percent was more than 40 percent in 2016 (UN-ESCWA and ERF, 2019). Despite the different measures of income inequality, their common feature is that income inequality has been always strongly present in Jordan. The literature shows a consistent gap in income and expenditure between the different socio-economic groups, mainly between the different geographical locations and between males and females.

Jordan experiences spatial income inequality on the urban/rural levels as well as the governorate level. Shahateet (2006) used the 1997 and 2002/2003 HEIS to assess inequalities between governorates. Using data on income, he applied a wide range of statistical tests. The ANOVA test results showed that there was a significant difference in income per capita among governorates and that it increased between 1997 and 2002/2003. Moreover, the Gini index had increased by 17 percent in Jordan, with the highest increase of 20 percent in Amman. This implies that income distribution has become more unequal. As for the 90/10 ratio, it had increased by four percent, confirming the previously obtained results. Using consumption data of the same dataset, Shahatett and Al-Tayebb (2007) applied the ANOVA test as well as the Levene statistic to assess whether variances of consumption per capita are homogeneous. Results of the ANOVA test showed that there was a statistically significant difference between consumption per capita in governorates in 1997, and the difference had enlarged significantly by 2002/2003. This result was confirmed by the Levene statistic showing that variances are heterogeneous.

Using a UQR to investigate sources of inequality between urban/rural areas and metropolitan/non-metropolitan areas, Hassine Belhaj (2014) investigated 28 household surveys during the period 1996-2010 for 12 Arab countries, including Jordan. The main determinants included in her analysis were gender, age, marital status, educational attainment, employment status of the household heads, regional location, whether urban or rural, and the composition of the household. The results show that the main determinants of inequality are geographic characteristics, educational attainment, and employment status. For instance, individuals living in the center and south of the country have less income. Inequality at the educational level accounted for 13 percent of the total inequality. As for inequality at the employment status, its share represented six percent of total inequality in Jordan. It was found that inequality between metropolitan and non-metropolitan areas is mainly due to the difference in the characteristics of households.

Moreover, inequality between governorates contributes more to total inequality compared to the urban-rural inequality (UNDP, 2015). The unequal access to infrastructure and education and health services among the administrative areas in Jordan may explain the inequality of opportunities in health and education, in addition to its negative impact on income inequality and economic growth (Al Sharafat, 2019). Spatial inequalities increase as well within the most urbanized governorates, such as Balqa, Karak, Irbid, Zarka, and Madaba, with a Gini coefficient of 27. Amman, the most urbanized governorate, experiences the highest Gini coefficient of 36 (UNDP, 2015). It is worth noting that these regional inequalities may be larger when the impact of large refugee movements is considered (UN-ESCWA and ERF, 2019).

Similarly, Sharafat (2019) explored rural/urban inequalities as well as inequality within governorates using the data of the 2013/2014 HEIS. For the rural/urban inequality, four indices are investigated: distribution of houses depending on tankers for water, distribution of houses connected to the public sewage system, distribution of houses whose members work at public administration and benefit from social security, and the distribution of houses depending on national aids and assistance provided by the National Aid Fund. Assistance has several forms: employment or production opportunities, physical treatments for individuals with incapacities, or vocational trainings (National Aid Fund, 2021). Based on the latter measures, Sharafat (2019) highlighted that services, such as sewage systems, are largely missing in the rural areas where only 6.8 percent of rural housing have access to a sewage system. In addition, 6.2 percent of households in rural areas depend solely on national aid funds compared to only four percent in urban areas. For inequality within governorates, Sharafat (2019) deployed four different measures: average annual income, percentage of households with expenditures higher than JD 14,000 per year, percentage of households with expenditures higher than JD 3,000, and percentage of households with an income greater than JD 14,000. The findings show that inequality across governorates is more significant, as 28 percent of households in Amman have expenditures over JD 14,000, while this percentage is only 6.5 percent in Tafila.

In Jordan, as well as in other Arab states, the gender gap is almost closed in education, especially at the primary level. However, this did not reflect into closing the gender gap in terms of employment. The conservative gender roles of women as caregivers and men as breadwinners still dominate in Jordan. Hence, it may offset any expected positive consequences of policies targeting the enhancement of gender equality, creating a "Gender Inequality Puzzle" (UNDP, 2015; Assaad et al.; 2018). The Female Labor Force Participation (FLFP) rate for Jordanian women is among the lowest worldwide, recording 14.59 percent in 2019 (World Development Indicators, 2021).

The limited ability of the public sector – the main source of employment for women in Jordan – to create decent formal jobs to absorb new entrants, along with the increasing importance of informal employment in the economy, especially for women, resulted in a widening gender wage gap (UNDP, 2015; UN-ESCWA and ERF, 2019). The gender wage gap is one of the commonly used measures to analyze gender income inequality. AlFarhan (2015) explored the gender wage gap in Jordan using HEIS data for 2002, 2006, and 2008, following the methodology of Oaxaca and Ransom (1994). This methodology allows for estimating the sources of the gender-wage gap in Jordan and classifying them into explained and unexplained sources. Two models are estimated: one to explain the differential in earnings and another to determine the factors affecting the decisions to participate in the labor force as proposed by Heckman (1979). The results showed that women are generally less engaged in the labor force compared to men, despite their high returns to education or the positive age effect. This can be explained by the social norms limiting women's roles to caring for their households, specifically after marriage, as the probability of women joining the labor force was reduced by 14 percent after marriage. As for the earnings gap between men and women, the gender earnings gap is reduced significantly due to women's high returns to education. For instance, it is reduced by 89 percent in the public sector and 35 percent in the private sector. Yet, this effect is neutralized due to unobservable effects, which could primarily be the screening and selection process. Despite having the same qualifications as men, women are excluded during the selection process as employers consider the future costs of hiring women, such as maternity leave benefits.

Using a more recent dataset, Galal and Said (2018) analyzed the evolution of gender income inequality between 2010 and 2016 using the Jordan Labor Market Panel Surveys (JLMPS). Contrary to most of the descriptive studies, they showed that total income inequality in Jordan decreased from 2010 to 2016. By applying an OLS model, Galal and Said (2018) estimated public and private sector wages to calculate the gender wage gap. First, they concluded that returns to education decrease for women working in the public and private sectors when moving from secondary to post-secondary education as well as for men working in the public sector. Second, they estimated that the increase in men's wages in the public sector – for the fact of being a man – has been reduced from 23 percent to 14 percent. Hence, the gender wage gap has been reduced in the public sector from 23 percent to 14 percent. However, it has increased in the private sector from 15 percent to 17 percent.

More recently, Ramadan et al. (2018) explored 12 household surveys for four Arab countries, including Jordan, to identify sources of inequality. Using the UQR approach, they calculated the gap between expenditures per capita of different socio-economic groups. They highlighted that Jordan has witnessed a decrease in the gap between urban and rural areas and between FHHs and MHHs between 2006 and 2013. The results show that households with a female head have higher expenditures. The gender gap in favor of females is due to the difference in returns to the household heads' characteristics, as women in Jordan have a higher return to education compared to men. Additionally, they found that urban household expenditures are higher than rural households in Jordan. They also showed that the difference in expenditure per capita between urban and rural areas in Jordan is due to the difference in characteristics between the two groups of households.

Finally, using a richer dataset, Kasoolu et al. (2019) confirmed the previous findings that Jordanian women are better educated compared to men. However, they still suffer from lower labor force participation rates. Kasoolu et al. (2019) investigated micro-level data of Employment and Unemployment Surveys during the period 2006-2018 as well as Jordanian Labor Market Panel Surveys from 2010 to 2016. First, they applied a probit model to estimate the probability of women to participate in the labor force, and they applied a logit model with individual fixed effects for a robustness check. Second, they deployed a Heckman 2 stages model and Blinder-Oaxaca technique to determine the sources of wage differentials between men and women. Their results showed that women with low education levels (e.g. secondary education or less) have very low participation rates. This can be explained mainly by the predominant conservative culture restricting women's roles outside the house. Moreover, it can be due to the poor transportation infrastructure negatively affecting more than the half of working age women. However, the impact of childcare cost was statistically insignificant, which requires further research.

The COVID-19 pandemic is magnifying already existing challenges. Abu Ismail (2020) showed that the poverty headcount ratio is projected to increase in the region to 23.2 percent in 2020 instead of 19.1 percent as estimated before the spread of the COVID-19 pandemic. This may result in an increase in income inequality. Jordan is one of the countries that implemented a full lockdown to flatten the curve, which resulted in unequal impacts across groups due to differences in their demographic and socioeconomic characteristics. In general, women, children, elderly people, and migrants or refugees were disproportionally affected (Kebede et al., 2020).

In May 2020, UNDP Jordan conducted a survey to assess the impact of COVID-19 on households. The responses show that the pandemic has greatly degraded the economic status of Jordanians; 63 percent of the respondents indicated that they don't work anymore, nine percent experienced a decrease in their salary and, nine percent are on unpaid leave. By looking at the Jordanian population sub-groups, these effects are more intensified for the youth. Besides, there are large inequalities among governorates. For instance, 69 percent of Zarqa's respondents indicated that they lost all their income compared to 32 percent in Tafileh. As for

the social security programs, 78 percent of the respondents affirmed that they do not have access to social security, especially for elderly people. The low prevalence of social security beneficiaries indicates that the conditions of poor people and elderly people in poor health conditions or those with disabilities may worsen. Moreover, access to social security programs differs among governorates as 82 percent of respondents in Irbid indicated not to have had access to social security compared to 52 percent in Tafileh (UNDP, 2020).

The vulnerable groups of the pandemic include those working in the informal sector, women, and individuals with limited access to the Internet and digital assets; as the latter group are more likely to suffer from employment loss and fall into poverty. For instance, 22 percent of the respondents of the UNDP survey claim that they do not have access to the Internet for education or working from home (UNDP, 2020). In addition, women have a higher probability of losing their jobs as they are more concentrated in the services and informal sectors (UNSDG, 2020). Furthermore, the burden of elderly and child care increases the probability of leaving or remaining out of the labor force. This effect can be magnified due to the government-issued Defense Order No. 1 in March 2020 reallocating 50 percent of the maternity insurance fund resources to finance the most vulnerable groups. Hence, employers may lose the main resources funding maternity benefits, which may encourage them to decrease women labor. However, a new initiative was launched in October 2020 to assist working mothers. The initiative consists of providing mothers with an amount equivalent to USD 35-85 to help them pay for care services for their children. Such an initiative is expected to lower mothers' dropout rates from the private sector. However, evidence of the success of the initiative remains unclear (UN Women and ERF, 2020).

2. Methodology

The present paper contributes to the literature by investigating inequality between urban and rural areas, and between FHHs and MHHs at the most recent period for which data are available. Following Hassine Belhaj (2014) and Ramadan et al. (2018), the UQR approach is used to decompose gender inequality and spatial inequality into endowment and returns effects. The advantage of such an approach is to better understand the main drivers of expenditure inequality between the different groups at the different deciles of income distribution as it allows us to decompose the welfare gap at various quantiles of the unconditional distribution of total expenditures per capita into two parts. The first one is the "endowment effect." It is the part of inequality explained by the characteristics of the household head and the household. The second is the "returns effect," which is the unexplained part based on the difference in the returns to these characteristics.

The used methodology consists of two stages. The first stage estimates the UQR on log annual household expenditure per capita of the two groups of interest: urban/rural and FHHs/MHHs in our case. More precisely, the following equation is estimated:

$$RIF(y, Q_\theta) = X\beta + \varepsilon \quad (1)$$

where RIF is the recentered influence function.[2] Our variable of interest y is log annual expenditure per capita. $RIF(y, Q_\theta)$ is the recentered influence function of the θth quantile of y estimated by computing the sample quantile Q_θ and deriving the density of y at that point by Kernel method (Firpo et al., 2009; Fortin et al., 2010).

The explanatory variables, X, include age, age squared, gender, marital status, education level, and employment status of the household heads. Other regressors include the nationality of the head and if they are enrolled in the social security system. Household characteristics as a ratio of those below 14 years and those above 65 years in the household are included, as well as the geographical location.

This is followed by constructing a counterfactual distribution that would prevail if the second group (e.g. rural households) receive the returns that pertained to the first group (e.g. urban households). Based on the comparison between the counterfactual and the empirical distribution, we estimate the endowment effect (the part of the income gap explained by the differentials in household characteristics) and the returns effect (the part of income gap due to the differences in returns to these characteristics):

$$\hat{Q}_\theta^i - \hat{Q}_\theta^j = \{\hat{Q}_\theta^i - \hat{Q}_\theta^*\} + \{\hat{Q}_\theta^* - \hat{Q}_\theta^j\}$$

$$= \underbrace{(\bar{X}^i - \bar{X}^j)\hat{\beta}_\theta^i}_{\textit{endowment effect}} + \underbrace{\bar{X}^j(\hat{\beta}_\theta^i - \hat{\beta}_\theta^j)}_{\textit{returns effect}}$$

for i= urban, female-headed household
j= rural, male-headed household
**= counterfactual values.*

As explained by Ramadan et al. (2018); $\hat{Q}_\theta$ is the θ^{th} unconditional quantile of y and $\hat{Q}_\theta^*$ is the counterfactual θ^{th} quantile of the unconditional counterfactual distribution. It is the distribution that would have prevailed for group j if they received the same returns to their characteristics as group i. $\bar{X}$ is the vector of the means of regressors and $\hat{\beta}_\theta^k$ is the estimate of the unconditional quantile partial effects of group *k=i or j*.

3. Data and context

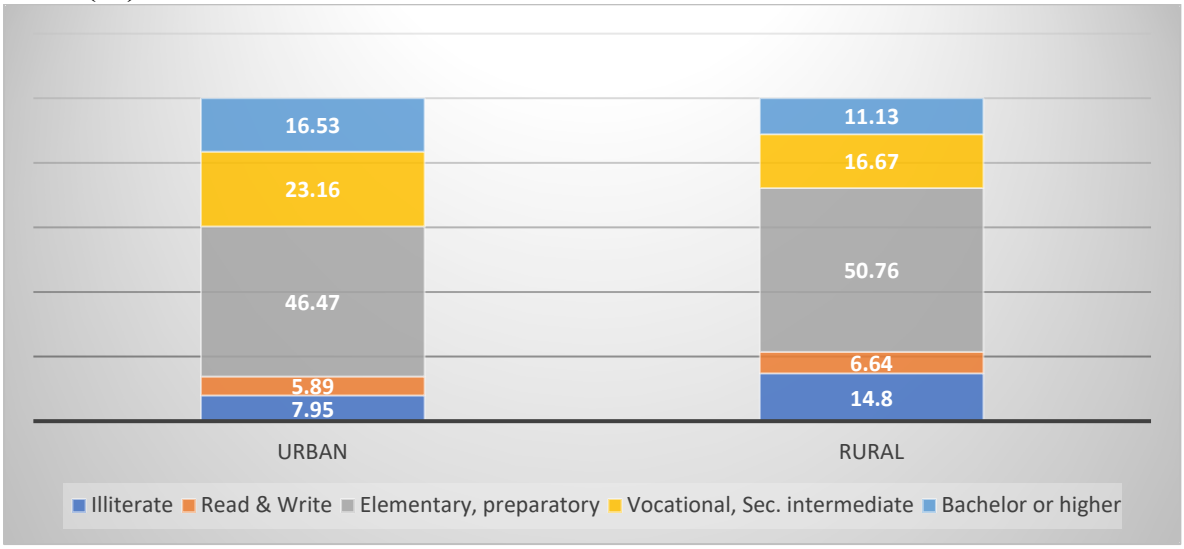
The present analysis is conducted using 50 percent of the original sample of the latest available

[2] The RIF is a simple regression-based procedure for performing a detailed decomposition of different distributional statistics across the distribution of the outcome variable. For more details see Firpo et al. (2009) and Fortin et al. (2010)

HEIS (2017)[3] as the full dataset was not made available. The used sample includes 9,611 households, with 15 percent of the households living in rural areas and 86 percent being MHHs. It is worth noting that the provided sample does not include any information about the response rates or sampling weights. Thus, the results should be discussed with caution as no general conclusions about the income inequality trend or about the whole Jordanian population can be deduced.

The HEIS (2017) includes data on household and individual demographics (age, gender, and marital status, among others), education, employment status, assets, and income. Around 15 percent of the heads living in rural areas are illiterate, while this share is eight percent in urban areas. In urban areas, 16.5 percent of the heads finished university or post-graduate studies, compared to 11 percent in rural areas. This difference in educational level is not reflected in the difference in employment status between urban and rural areas, as 66 percent of the household heads in both areas are employed (Figures 1 and 2).

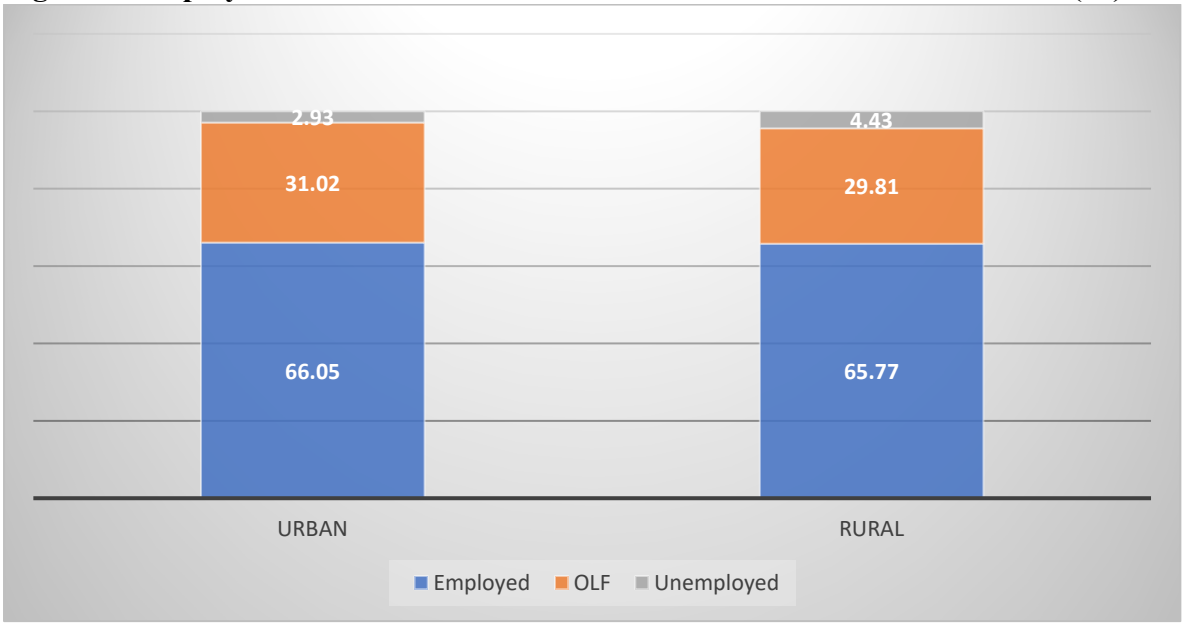
Figure 1. Distribution of the households according to head's education in urban and rural areas (%)



Source: Constructed by the author using 50 percent of the HEIS (2017/2018).

[3] The data are provided by the Department of Statistics (DOS) in Jordan with the assistance of the UNDP Jordan Office.

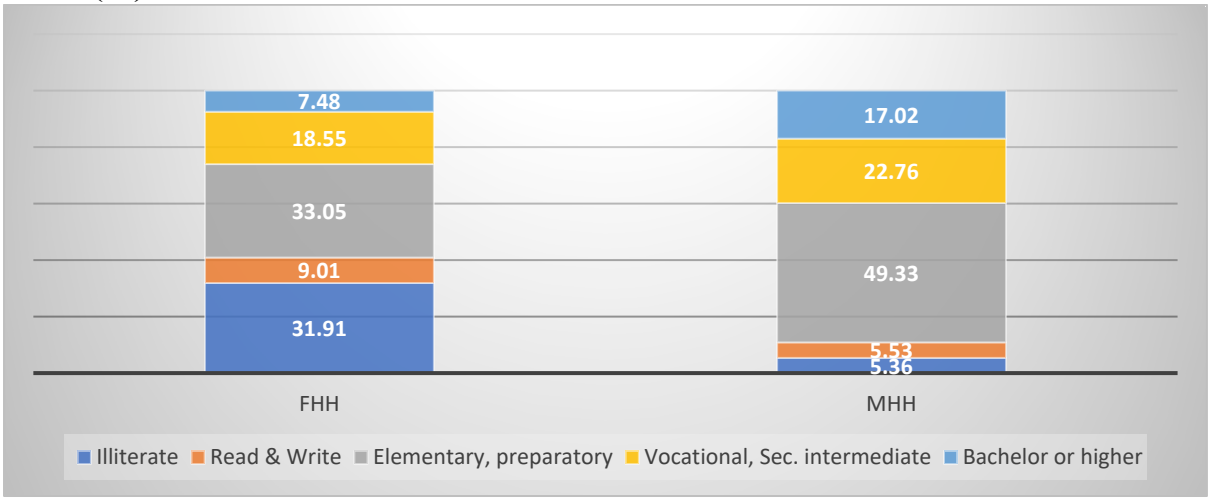
Figure 2. Employment status of the household heads in urban and rural areas (%)



Source: Constructed by the author using 50 percent of the HEIS (2017/2018).

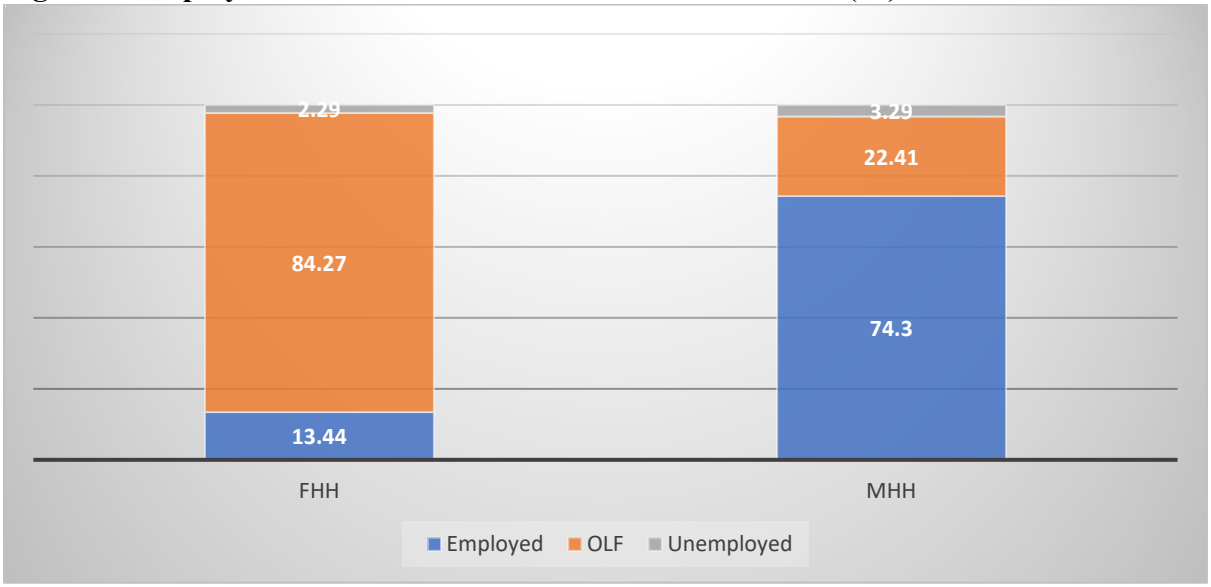
When comparing the education level of female household heads with male household heads, it was found that around 32 percent of female household heads are illiterate and only 7.48 percent have finished university or post-graduate studies. For male household heads, only 5.36 percent are illiterate and 17 percent have a bachelor's degree or higher (Figure 3). This difference in educational attainment is translated into a difference in the labor market with only 13.44 percent of female household heads employed compared to 74.3 percent of male household heads (Figure 4).

Figure 3. Distribution of the households according to head's education for FHH and MHH (%)



Source: Constructed by the author using 50 percent of the HEIS (2017/2018).

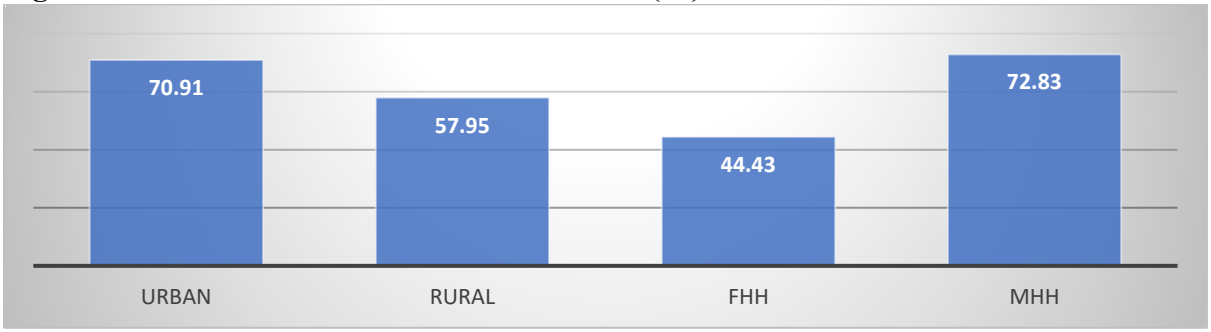
Figure 4. Employment status of female heads and male heads (%)



Source: Constructed by the author using 50 percent of the HEIS (2017/2018).

With the spread of COVID-19 and the precautionary measures, access to the Internet and technology devices are necessary to ensure equal access to education and economic opportunities. In 2017, around 78 percent of adult Jordanians had access to the Internet, 75 percent among females and 78 percent among males (World Development Indicators, 2021). Based on the HEIS (2017) sample used here, 70.91 percent of urban household heads used the Internet compared to 57.95 percent of rural heads. In addition, 72.83 percent of male household heads used the Internet compared to 44.43 percent of female household heads (Figure 5).

Figure 5. Share of heads who used the Internet (%)



Source: Constructed by the author using 50 percent of the HEIS (2017/2018).

According to the Jordanian Household Expenditure Surveys from 2006 to 2013, inequality may be considered moderate when measured using the Gini index. From 2006 to 2010, the Gini index decreased from 35.8 to 33.1 (Ramadan et al., 2018). It remains at 33 using the HEIS (2013). Based on the present sample of the HEIS (2017), the Gini index is around 38. However, we cannot conclude that this is an increase in the inequality in Jordan as we cannot compare the Gini measured here without sampling weights with the previous years[4] (Table 1). Other

[4] The Gini calculated here is based on the 9,611 households provided in the sample of the HEIS 2017 with no sample weights. So, we cannot generalize it to the whole country.

measures of inequality, such as general Entropy measures and Atkinson measures, show moderate levels of inequality using the HEIS (2017) sample. Meanwhile, the percentile ratio p90/p10 for distribution of expenditure per capita shows a high level of inequality, with the share of the highest decile five times the share of the lowest tenth decile (Table 1).

Table 1. Inequality measures using total expenditure per capita

Gini	0.38
General Entropy Measures	
GE(-1)	0.28
GE(0)	0.24
GE(1)	0.28
GE(2)	0.53
Atkinson Measures	
A(0.5)	0.12
A(1)	0.22
A(2)	0.36
Decile ratio	
p90/p10	5.03

Source: Computed by the author using 50 percent of the HEIS (2017) sample without sampling weights.
*the annual expenditure is in real value computed using the CPI (base year=2010).

4. Estimated results

The estimated results of the RIF regression and the decomposition of inequality for urban/rural households and FHHs/MHHs are presented in Tables 2-6.

Expenditure gap between urban and rural households

For the expenditure gap between urban and rural households, real expenditure per capita is higher among urban households. This is consistent with what was found in the literature from previous rounds of the HEIS. The results show that the expenditure gap between urban and rural households increases with the expenditure decile (Table 2). This positive expenditure gap in favor of urban households is explained mainly by the difference in characteristics between the two groups of households.

Decomposing the geographical expenditure gap into endowment and return effects shows that, for all expenditure groups, having a male household head increases the expenditure gap between urban and rural areas. The return effect of age is non-linear, as the expenditure gap decreases with the household head's age, then increases again. It is worth noting that this non-linear effect is significant only at higher expenditure deciles (Tables 4 and 5).

Education endowment and returns to education are key determinants of the urban/rural expenditure gap. The impact of education and its returns differ according to the expenditure group and the education level. At the three lowest deciles, being a head who can read and write has no significant impact on the geographical expenditure gap. However, the returns to being able to read and write significantly decreases the expenditure gap between urban and rural

households. The gap between urban and rural households whose heads have a basic education is lower compared to the gap between urban and rural households whose heads are illiterate at all expenditure groups. However, having a household head with a secondary or university degree or higher and the return to these education levels increase the geographical expenditure gap at all expenditure groups compared to households whose heads are illiterate.

Another important endowment that may explain the expenditure gap between urban and rural households is use of the Internet. Access to and use of the Internet significantly increases the urban/rural expenditure gap at all income deciles. Additionally, having social security or being included in the retirement system plays a significant role in decreasing the expenditure gap between urban and rural areas, especially among the poorest six expenditure deciles. It is worth noting that most of the heads who are included in the social security or retirement system are male heads and have elementary education or higher.

The expenditure gap between households in urban and rural areas increases with the share of children under 14 years old, mainly because of the endowment effect. This may have a different explanation; for instance, the higher the number of children in a household, the higher the transfers provided by the government, relatives, or any other sources. Households with a higher share of children may also be more likely to send their children to work, especially in rural areas. Such results require more investigation.

As for the nationality of the head, the results show that the spatial expenditure per capita gap between Jordanians is lower compared to the gap between Egyptians, especially at the lowest expenditure groups. This may be explained by the social programs and services provided to Jordanians. It would be interesting to compare the expenditure gap between Jordanians and refugees or other migrants; however, the available data do not provide information about refugees or any other nationality than Egyptians.

Finally, the results show that the urban/rural expenditure gap is higher in the northern and southern governorates compared to the central ones. This is expected given the centralization of services and income opportunities in central governorates. Though, the returns effect of living in the southern governorates reduces the expenditure gap between urban and rural areas.

Expenditure gap between FHHs and MHHs

The results of the gender expenditure gap show that FHHs tend to have a higher per capita expenditure compared to their male counterparts (Table 3). This positive gender expenditure gap in favor of FHHs is explained by the difference in endowment between the two groups and returns to these endowments (Tables 6 and 7). Nevertheless, the endowment and returns effects of the different socio-economic characteristics differ according to the expenditure deciles. For instance, the return effect of age significantly increases the gender difference in expenditure per capita only at the second, fourth, fifth, and sixth deciles.

As expected, the higher the education level, the lower the gender expenditure gap. In other words, the gender expenditure gap is lower among households whose head has any level of

education compared to the gender gap between households whose head is illiterate. This significant negative effect is valid for all expenditure groups. On the other side, the results show that returns to secondary and higher education increase the gender expenditure gap. However, this negative effect is not significant at all expenditure groups. Additionally, the employment status is another key factor in explaining the gender expenditure gap. Being an employed household head increases the gender expenditure gap compared to the gap between those who are unemployed or out of the labor force.

Access to and use of the Internet significantly decreases the gender expenditure gap at all expenditure deciles. This means that the Internet is an important determinant for income inequality in Jordan, as using the Internet allows both female heads and male heads to access information and/or economic opportunities. This would provide both with higher expenditure compared to households that do not use the Internet. Similarly, being included in the social security or retirement system plays a significant role in decreasing the income gap between FHHs and MHHs. However, this negative effect is not significant at all expenditure deciles.

As found for the geographical gap, the share of children under 14 years old is an endowment that increases the expenditure gap between FHHs and MHHs. As explained above, this may result from the higher transfers provided by the government, relatives, or any other sources, or maybe households with a higher number of children send their children to work.

Finally, the returns to being Jordanian differ according to the expenditure deciles. At the three lowest expenditure deciles, being Jordanian increases the gender expenditure gap compared to Egyptian-headed households. For the highest three deciles, the gap among female Jordanian-headed households and male Jordanian-headed households is lower compared to the gender gap among Egyptian-headed households. This may be the result of the higher access by both Jordanian MHHs and FHHs to services and sources of income, at higher income groups. Finally, living in the southern governorates increases the gender expenditure gap compared to living in the central ones. This positive effect is not significant at the tail of the distribution.

5. Concluding remarks

The present paper investigates the expenditure per capita gap between urban and rural households, and between FHHs and MHHs. Using the unconditional quantile regression approach, the expenditure gap is decomposed into endowment and returns effects in an attempt to understand the main drivers of spatial inequality and gender inequality in Jordan.

Based on the literature and the results found in the present analysis, we can conclude that the geographical expenditure gap is consistent over the years in favor of urban areas. However, with the high population density in the cities and the faster spread of the COVID-19 pandemic in urban areas, this may result in job losses and a decrease in the income and expenditure of urban households.

As found in Ramadan et al. (2018), when expenditure per capita is considered, the gender gap is in favor of FHHs. This is expected as many social protection programs provide income

transfers and services to FHHs. The HEIS data shows that, on average, Jordanian FHHs receive more income from the National Aid Fund, the Zakat Fund, the Royal Court, and other transfers. Therefore, women have access to other income sources than wage income that may explain the higher expenditure per capita. Additionally, FHHs are smaller in size compared to MHHs. Though**,** this is not the same when wage is used, as wage gap is in favor of males. Such results confirm that inequality is a complex and multidimensional phenomenon, so analyzing and addressing a single inequality measure may be misleading.

As found in the literature, the results of the unconditional quantile regression show that the education of household heads and households' geographical location are key determinants of expenditure gaps between urban and rural households and between FHHs and MHHs. These results are relevant from a policy perspective; reducing inequality requires investing in education and ensuring equal access to economic opportunities for all individuals living in all the Jordanian governorates. Additionally, individuals living in central governorates have higher access to the services, infrastructure, and opportunities compared to those living in the southern and northern governorates. Hence, social programs and public investment in infrastructure and services should equally target rural and urban areas in all governorates.

Finally, it is worth noting that the present analysis is limited by data availability. First, the used HEIS (2017) sample does not include any information about the response rates or sampling weights. Therefore, no general conclusions about the income inequality trend or about the whole Jordanian population can be deduced. Second, the sample includes only Jordanian and Egyptian heads; it would be interesting to compare the expenditure gap between Jordanians and refugees or other migrants. Third, more recent data is required to control for the impact of the COVID-19 pandemic on inequality in Jordan.

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Table 2. Overall gap, endowment effect, returns effect of spatial expenditure gap (urban/rural inequality)

	1	2	3	4	5	6	7	8	9
Overlap Gap	0.0987***	0.0745***	0.114***	0.131***	0.137***	0.172***	0.191***	0.255***	0.255***
	-0.0319	*-0.0206*	*-0.0198*	*-0.0201*	*-0.0199*	*-0.02*	*-0.0227*	*-0.0252*	*-0.0363*
Endowment Effect	0.0692***	0.0633***	0.0797***	0.0970***	0.111***	0.134***	0.157***	0.191***	0.207***
	-0.0135	*-0.0128*	*-0.0125*	*-0.0126*	*-0.0129*	*-0.0138*	*-0.0151*	*-0.0168*	*-0.0196*
Returns Effect	0.0295	0.0112	0.0342*	0.0339*	0.0262	0.0378**	0.0335	0.0635**	0.0475
	-0.031	*-0.0199*	*-0.0187*	*-0.0186*	*-0.0186*	*-0.0192*	*-0.0219*	*-0.025*	*-0.0363*
Observations	9,611	9,611	9,611	9,611	9,611	9,611	9,611	9,611	9,611

*** p<0.01, ** p<0.05, * p<0.1
Standard errors in italics

Table 3. Overall gap, endowment effect, returns effect of gender expenditure gap (FHH/MHH inequality)

	1	2	3	4	5	6	7	8	9
Overlap Gap	0.0996***	0.150***	0.218***	0.242***	0.272***	0.285***	0.287***	0.298***	0.321***
	-0.0338	*-0.0286*	*-0.0284*	*-0.0251*	*-0.0243*	*-0.0254*	*-0.0271*	*-0.0284*	*-0.047*
Endowment Effect	0.250***	0.215***	0.236***	0.168***	0.125**	0.0537	-0.0679	-0.134*	-0.119
	-0.0845	*-0.068*	*-0.0688*	*-0.0606*	*-0.0593*	*-0.0619*	*-0.0662*	*-0.0698*	*-0.124*
Returns Effect	-0.151*	-0.0655	-0.0182	0.0737	0.146**	0.231***	0.355***	0.432***	0.440***
	-0.0877	*-0.0699*	*-0.0708*	*-0.0624*	*-0.0613*	*-0.0641*	*-0.0687*	*-0.0731*	*-0.13*
Observations	9,611	9,611	9,611	9,611	9,611	9,611	9,611	9,611	9,611

*** p<0.01, ** p<0.05, * p<0.1
Standard errors in italics

Table 4. Explained effect - urban/rural inequality

Decile	1	2	3	4	5	6	7	8	9
Male Head	0.00376**	0.00332**	0.00336**	0.00373**	0.00404**	0.00401**	0.00336*	0.00341*	0.00369*
	-0.00192	*-0.00167*	*-0.00165*	*-0.00179*	*-0.00191*	*-0.00192*	*-0.00172*	*-0.00182*	*-0.00215*
Age in years	-0.0205	-0.0165	-0.0155	-0.0147	-0.0145	-0.0142	-0.0144	-0.0159	-0.0189
	-0.0133	*-0.0107*	*-0.01*	*-0.00956*	*-0.00942*	*-0.00928*	*-0.0095*	*-0.0106*	*-0.0128*
Age squared	0.0163	0.0115	0.0103	0.00914	0.00917	0.00856	0.00818	0.00926	0.0107
	-0.014	*-0.00996*	*-0.00888*	*-0.00795*	*-0.00798*	*-0.00751*	*-0.00729*	*-0.00829*	*-0.00979*
married	0.000409	0.00129	0.000772	0.0012	0.00135	0.00212*	0.00369**	0.00316*	0.00425*
	-0.00117	*-0.00108*	*-0.000928*	*-0.000954*	*-0.000985*	*-0.00119*	*-0.00167*	*-0.00167*	*-0.00225*
Education (reference=illiterate)									
Read & Write	-0.000385	-0.00064	-0.0004	-0.000527	-0.000323	-0.000631	-0.0012	-0.00103	-0.000467
	-0.000535	*-0.000687*	*-0.000482*	*-0.000575*	*-0.000422*	*-0.000674*	*-0.00118*	*-0.00105*	*-0.000722*
Basic Education	-0.00597**	-0.00499**	-0.00339*	-0.00354**	-0.00366**	-0.00543**	-0.00740**	-0.00899**	-0.0132***
	-0.00266	*-0.00223*	*-0.00176*	*-0.00176*	*-0.00179*	*-0.0023*	*-0.00294*	*-0.00354*	*-0.00508*
Voc. Sec., intermediate	0.0161***	0.0155***	0.0138***	0.0158***	0.0145***	0.0165***	0.0201***	0.0238***	0.0284***
	-0.00394	*-0.00355*	*-0.00318*	*-0.00339*	*-0.00324*	*-0.00361*	*-0.00427*	*-0.00505*	*-0.00634*
Bachelor or higher	0.0161***	0.0194***	0.0213***	0.0245***	0.0264***	0.0322***	0.0392***	0.0479***	0.0576***
	-0.00377	*-0.00395*	*-0.00414*	*-0.00459*	*-0.00491*	*-0.00589*	*-0.0071*	*-0.00864*	*-0.0105*
Employment status (reference= out of labor force)									
Employed	0.000377	0.00036	0.000348	0.00031	0.000354	0.000302	0.000272	0.000186	0.000286
	-0.00181	*-0.00173*	*-0.00167*	*-0.00149*	*-0.0017*	*-0.00145*	*-0.00131*	*-0.000894*	*-0.00137*
Unemployed	0.00222*	-6.39E-05	-0.000698	-0.00043	-0.000189	0.00038	0.000665	0.000711	-0.00119
	-0.00124	*-0.000762*	*-0.000742*	*-0.000688*	*-0.000678*	*-0.000746*	*-0.000864*	*-0.00101*	*-0.00139*
Use Internet	0.0364***	0.0271***	0.0245***	0.0250***	0.0263***	0.0263***	0.0269***	0.0300***	0.0335***
	-0.00509	*-0.004*	*-0.00362*	*-0.0036*	*-0.00372*	*-0.00386*	*-0.00414*	*-0.00476*	*-0.00595*
Social Security	-0.0335***	-0.0369***	-0.0276***	-0.0195***	-0.0135***	-0.0085***	-0.00146	0.000673	0.0047
	-0.00473	*-0.0044*	*-0.0037*	*-0.00327*	*-0.0031*	*-0.00322*	*-0.00356*	*-0.0042*	*-0.0057*

Share of children	0.0237***	0.0270***	0.0286***	0.0295***	0.0308***	0.0318***	0.0330***	0.0341***	0.0339***
	-0.00745	*-0.00845*	*-0.00893*	*-0.00923*	*-0.00963*	*-0.00995*	*-0.0103*	*-0.0107*	*-0.0107*
Share of adults	0.000187	0.00199	0.00259	0.00351	0.00397	0.00509	0.00654	0.0079	0.0101
	-0.000634	*-0.00136*	*-0.0017*	*-0.00226*	*-0.00255*	*-0.00325*	*-0.00417*	*-0.00503*	*-0.00645*
Jordanian	-0.0406***	-0.0379***	-0.0341***	-0.0280***	-0.0227***	-0.0184***	-0.0164***	-0.00830***	0.000577
	-0.0043	*-0.00383*	*-0.00346*	*-0.00306*	*-0.00279*	*-0.00275*	*-0.00294*	*-0.00319*	*-0.00423*
North	0.00913***	0.00681***	0.00659***	0.00603***	0.00506***	0.00653***	0.00717***	0.00845***	0.00870***
	-0.00236	*-0.00186*	*-0.00175*	*-0.00164*	*-0.00152*	*-0.00179*	*-0.00199*	*-0.00235*	*-0.00284*
South	0.0455***	0.0460***	0.0492***	0.0450***	0.0439***	0.0477***	0.0491***	0.0558***	0.0447***
	-0.00748	*-0.00643*	*-0.006*	*-0.00574*	*-0.00575*	*-0.00625*	*-0.00696*	*-0.00816*	*-0.0106*

*** p<0.01, ** p<0.05, * p<0.1
Standard errors in italics

Table 5. Unexplained effect - urban/rural inequality

Decile	1	2	3	4	5	6	7	8	9
Male head	0.047	0.00279	-0.0297	-0.0321	-0.0344	-0.12	0.0352	-0.0592	-0.0557
	-0.144	*-0.0885*	*-0.0836*	*-0.0839*	*-0.0832*	*-0.0848*	*-0.0972*	*-0.109*	*-0.163*
Age in years	-0.882	-0.526	-0.464	-0.383	-0.699*	-0.834**	-1.062**	-1.497***	-1.447**
	-0.64	*-0.401*	*-0.378*	*-0.378*	*-0.375*	*-0.384*	*-0.44*	*-0.496*	*-0.737*
Age squared	0.347	0.211	0.253	0.175	0.331*	0.419**	0.457**	0.731***	0.758*
	-0.337	*-0.211*	*-0.199*	*-0.199*	*-0.198*	*-0.203*	*-0.232*	*-0.262*	*-0.388*
Married	0.0663	0.0476	0.0533	0.0955	0.137*	0.156*	0.0287	0.0893	0.159
	-0.135	*-0.0829*	*-0.0784*	*-0.0786*	*-0.078*	*-0.0794*	*-0.0911*	*-0.102*	*-0.153*
Education (Reference: Illiterate)									
Read & Write	-0.0292***	-0.0185***	-0.0135**	-0.00656	-0.00595	0.00174	-0.00163	-0.00744	-0.0165
	-0.0102	*-0.0064*	*-0.00592*	*-0.0058*	*-0.00576*	*-0.00588*	*-0.00673*	*-0.00763*	*-0.0114*
Basic Education	-0.134**	-0.0831**	-0.0515	-0.0212	-0.0232	0.0199	-0.00972	-0.0156	0.0045
	-0.0582	*-0.0366*	*-0.0344*	*-0.0344*	*-0.0342*	*-0.035*	*-0.0401*	*-0.0453*	*-0.0671*
Voc. Sec. intermediate	-0.0377*	-0.0166	-0.0102	0.000259	-0.00175	0.0113	0.00926	0.0193	0.00784
	-0.0222	*-0.0138*	*-0.013*	*-0.013*	*-0.0129*	*-0.0132*	*-0.0151*	*-0.0171*	*-0.0253*
Bachelor or higher	-0.0261	-0.00894	0.00545	0.0194**	0.0181*	0.0296***	0.0288**	0.0475***	0.0353*
	-0.0164	-0.0101	-0.00955	-0.00965	-0.00958	-0.00994	-0.0113	-0.013	-0.0188
Employment Status (reference: out of labor force)									
Employed	-0.0626	-0.0347	-0.0093	-0.0364	-0.0167	-0.0034	-0.0392	-0.0417	-0.0109
	-0.0582	*-0.0362*	*-0.0342*	*-0.0342*	*-0.034*	*-0.0347*	*-0.0398*	*-0.0448*	*-0.0666*
Unemployed	-0.0089	-6.03E-05	0.00302	0.00289	0.000181	-0.00135	-0.00422	-0.00351	0.00462
	-0.00729	*-0.00455*	*-0.0043*	*-0.00429*	*-0.00425*	*-0.00436*	*-0.00502*	*-0.00565*	*-0.00836*
Use internet	-0.129***	-0.0242	-0.0301	-0.0509*	-0.0438*	-0.00935	-0.00922	-0.00637	-0.0293
	-0.0454	*-0.0282*	*-0.0266*	*-0.0266*	*-0.0264*	*-0.027*	*-0.0309*	*-0.0348*	*-0.0518*
Social Security	-0.004	0.0608*	0.0509	-0.014	-0.0178	-0.0407	-0.045	-0.00957	-0.0383
	-0.0556	*-0.0342*	*-0.0323*	*-0.0324*	*-0.0321*	*-0.0327*	*-0.0375*	*-0.0422*	*-0.063*

Share of children	0.045	-0.0515*	-0.0214	-0.0169	-0.0622**	-0.0937***	-0.0595*	-0.0760**	0.00781
	-0.0448	*-0.0279*	*-0.0263*	*-0.0263*	*-0.0262*	*-0.0268*	*-0.0306*	*-0.0345*	*-0.0513*
Share of adults	-0.0176	0.0028	-0.00184	0.00201	-0.000398	0.000251	0.0116	-0.00215	0.00595
	-0.0149	*-0.00922*	*-0.0087*	*-0.00871*	*-0.00865*	*-0.00883*	*-0.0102*	*-0.0114*	*-0.017*
Jordanian	0.000307	0.0376	0.0571	0.0427	0.0421	0.109	0.123	0.065	0.0698
	-0.115	*-0.0698*	*-0.0661*	*-0.0664*	*-0.0659*	*-0.0669*	*-0.0767*	*-0.086*	*-0.129*
North	-0.019	-0.0179	-0.0111	-0.0085	0.00512	-0.00507	-0.0066	-0.0236	-0.0423
	-0.0283	*-0.0174*	*-0.0164*	*-0.0165*	*-0.0163*	*-0.0166*	*-0.0191*	*-0.0215*	*-0.0321*
South	-0.00607	-0.0538**	-0.0474**	-0.0346*	-0.0364*	-0.0391*	-0.0516**	-0.0575**	-0.0418
	-0.0341	*-0.0214*	*-0.0202*	*-0.0201*	*-0.02*	*-0.0205*	*-0.0235*	*-0.0265*	*-0.0392*

*** p<0.01, ** p<0.05, * p<0.1
Standard errors in italics

Table 6. Explained effect - FHH/MHH inequality

Decile	1	2	3	4	5	6	7	8	9
Age in years	-0.252	0.0745	-0.0577	-0.0039	0.0643	0.079	0.0202	0.114	0.172
	-0.184	*-0.147*	*-0.149*	*-0.131*	*-0.129*	*-0.134*	*-0.144*	*-0.153*	*-0.273*
Age squared	0.296*	-0.0196	0.0478	0.031	-0.0415	-0.0502	0.0205	-0.0242	-0.0445
	-0.164	*-0.131*	*-0.133*	*-0.117*	*-0.115*	*-0.12*	*-0.128*	*-0.136*	*-0.243*
married	-0.00679	0.00927	0.0356	-0.0214	-0.0564	-0.108**	-0.153***	-0.182***	-0.146
	-0.0659	*-0.0525*	*-0.0533*	*-0.0469*	*-0.0461*	*-0.0482*	*-0.0516*	*-0.0548*	*-0.0979*
Education (Reference=illiterate)									
Read & Write	0.0065	0.0034	0.00462	0.00540*	0.00677**	0.00721**	0.00995***	0.00735**	0.00575
	-0.00407	*-0.0031*	*-0.00323*	*-0.00297*	*-0.00308*	*-0.00324*	*-0.00378*	*-0.00358*	*-0.00575*
Basic Education	-0.0494***	-0.0384***	-0.0317***	-0.0379***	-0.0314***	-0.0429***	-0.0502***	-0.0481***	-0.0762***
	-0.0145	*-0.0115*	*-0.0116*	*-0.0104*	*-0.0101*	*-0.0108*	*-0.0117*	*-0.0123*	*-0.0216*
Vocational, Sec. intermediate	-0.0182***	-0.0175***	-0.0172***	-0.0150***	-0.0153***	-0.0181***	-0.0166***	-0.0156***	-0.0274***
	-0.0068	*-0.00608*	*-0.00604*	*-0.00528*	*-0.00532*	*-0.00603*	*-0.00583*	*-0.00576*	*-0.0102*
Bachelor or higher	-0.0575***	-0.0597***	-0.0593***	-0.0601***	-0.0547***	-0.0688***	-0.0778***	-0.0835***	-0.141***
	-0.0142	*-0.0118*	*-0.0119*	*-0.0108*	*-0.0104*	*-0.0114*	*-0.0124*	*-0.0132*	*-0.0232*
Employment status (Reference= out of labor force)									
Employed	0.138**	0.0313	0.0791*	0.0749*	0.0695*	0.0743*	0.0394	0.0229	-0.088
	-0.0563	*-0.0448*	*-0.0455*	*-0.0401*	*-0.0393*	*-0.0411*	*-0.044*	*-0.0467*	*-0.0835*
Unemployed	-0.000345	-0.00114	0.00156	7.64E-05	0.00173	0.00151	0.00245	0.000951	-0.00131
	-0.00192	*-0.00161*	*-0.00171*	*-0.00137*	*-0.00156*	*-0.00156*	*-0.00187*	*-0.00165*	*-0.00291*
Use internet	-0.0642***	-0.0532***	-0.0762***	-0.0521***	-0.0475***	-0.0485***	-0.0511***	-0.0641***	-0.110***
	-0.0225	*-0.018*	*-0.0184*	*-0.0161*	*-0.0158*	*-0.0165*	*-0.0176*	*-0.0188*	*-0.0336*
Social Security	-0.0447	-0.0467	-0.0531	-0.0789**	-0.0801**	-0.0807**	-0.117***	-0.107***	0.0167
	-0.0465	*-0.037*	*-0.0376*	*-0.0331*	*-0.0325*	*-0.034*	*-0.0364*	*-0.0386*	*-0.0689*
Share of children	0.261***	0.270***	0.270***	0.236***	0.207***	0.194***	0.185***	0.145***	0.172***
	-0.0294	*-0.0245*	*-0.0248*	*-0.0218*	*-0.0209*	*-0.0215*	*-0.0227*	*-0.0235*	*-0.0412*

Share of adults	0.0221	0.0496***	0.0813***	0.0801***	0.0959***	0.109***	0.114***	0.0977***	0.152***
	-0.0174	*-0.0142*	*-0.015*	*-0.0134*	*-0.0136*	*-0.0145*	*-0.0155*	*-0.0157*	*-0.0276*
Jordanian	0.0129	0.00978	0.00809	0.0044	0.00279	0.00153	0.000508	-0.000325	-0.00241
	-0.00874	*-0.00663*	*-0.00553*	*-0.0031*	*-0.0021*	*-0.00143*	*-0.00113*	*-0.00116*	*-0.00261*
Urban (reference= rural)	0.00292	0.00116	-6.26E-05	0.000579	0.000735	0.00153	0.000649	0.00103	0.000122
	-0.00242	*-0.00171*	*-0.00166*	*-0.00148*	*-0.00147*	*-0.00164*	*-0.00163*	*-0.00176*	*-0.00305*
North	-0.00129	-0.00211	-0.00178	-0.00119	-0.00164	-0.00252	-0.00297	-0.00277	-0.0059
	-0.00154	*-0.0021*	*-0.00182*	*-0.0013*	*-0.00165*	*-0.00242*	*-0.00284*	*-0.00268*	*-0.00562*
South	0.0051	0.00497*	0.00483*	0.00630**	0.00514**	0.00513*	0.00830**	0.00528*	0.00543
	-0.00321	*-0.00275*	*-0.00275*	*-0.00294*	*-0.00261*	*-0.00266*	*-0.00363*	*-0.00289*	*-0.00436*

*** p<0.01, ** p<0.05, * p<0.1
Standard errors in italics

Table 7. Unexplained effect- FHH/MHH inequality

Decile	1	2	3	4	5	6	7	8	9
Age in years	0.405	1.535**	0.885	1.020*	1.148**	1.144**	0.898	1.426**	1.708
	-0.78	*-0.621*	*-0.626*	*-0.555*	*-0.545*	*-0.572*	*-0.616*	*-0.664*	*-1.152*
Age squared	-0.163	-0.624**	-0.385	-0.356	-0.436*	-0.409	-0.252	-0.39	-0.444
	-0.342	*-0.273*	*-0.274*	*-0.244*	*-0.24*	*-0.252*	*-0.272*	*-0.295*	*-0.505*
married	0.0173	-0.00221	-0.0316	0.0412	0.130*	0.247***	0.379***	0.522***	0.634***
	-0.0952	*-0.0757*	*-0.0751*	*-0.0677*	*-0.0667*	*-0.0705*	*-0.0767*	*-0.0855*	*-0.139*
Education (reference=illiterate)									
Read & Write	-0.00244	-0.00573	0.000335	0.00342	0.00854*	0.00976*	0.00908*	0.00569	0.0105
	-0.00678	*-0.0054*	*-0.00537*	*-0.00482*	*-0.00476*	*-0.00502*	*-0.00545*	*-0.006*	*-0.00995*
Basic Education	0.0177	0.0333	0.0385	0.0690**	0.0538	0.0912***	0.0815**	0.0664	0.129*
	-0.0477	*-0.038*	*-0.0378*	*-0.034*	*-0.0334*	*-0.0352*	*-0.0383*	*-0.0423*	*-0.07*
Vocational, Sec. intermediate	0.0131	0.0306	0.0402*	0.0301	0.0326*	0.0519***	0.0318	0.0142	0.0729*
	-0.0271	*-0.0215*	*-0.0216*	*-0.0193*	*-0.019*	*-0.02*	*-0.0216*	*-0.0236*	*-0.0398*
Bachelor or higher	0.0333	0.0424**	0.0409**	0.0377**	0.0221	0.0347*	0.0288	0.0135	0.0813**
	-0.0252	*-0.0201*	*-0.0202*	*-0.0179*	*-0.0176*	*-0.0185*	*-0.02*	*-0.0217*	*-0.0372*
Employment status (reference=out of labor force)									
Employed	-0.282***	-0.153***	-0.201***	-0.189***	-0.194***	-0.190***	-0.142**	-0.0931	0.0417
	-0.0721	*-0.0574*	*-0.0578*	*-0.0513*	*-0.0504*	*-0.0529*	*-0.057*	*-0.0615*	*-0.106*
Unemployed	0.00348	0.00374	-0.00721	-0.00284	-0.00745	-0.00558	-0.00884*	-0.00213	0.00297
	-0.0066	*-0.00526*	*-0.00531*	*-0.0047*	*-0.00464*	*-0.00485*	*-0.00524*	*-0.00562*	*-0.00975*
Use internet	-0.067	-0.0289	0.0331	-0.0146	-0.0301	-0.0324	-0.0209	-0.0094	0.11
	-0.06	*-0.0477*	*-0.0481*	*-0.0427*	*-0.0419*	*-0.044*	*-0.0474*	*-0.0512*	*-0.0886*
Social Security	-0.0773	-0.0756	-0.0348	0.0152	0.0418	0.0609	0.128***	0.142***	0.0224
	-0.0602	*-0.0479*	*-0.0484*	*-0.0428*	*-0.0421*	*-0.0441*	*-0.0474*	*-0.0508*	*-0.0891*
Share of children	-0.171***	-0.159***	-0.126***	-0.0552	0.0078	0.054	0.0979**	0.202***	0.142*
	-0.0522	*-0.0416*	*-0.0419*	*-0.0372*	*-0.0365*	*-0.0383*	*-0.0412*	*-0.0444*	*-0.0772*

Share of adults	0.00862	0.0114*	0.0157**	0.0101*	0.0135**	0.0154**	0.0120*	-0.00502	0.00627
	-0.00801	*-0.00638*	*-0.0063*	*-0.0057*	*-0.00563*	*-0.00597*	*-0.00651*	*-0.00731*	*-0.0117*
Jordanian	0.420***	0.263***	0.184***	0.0275	-0.0215	-0.062	-0.104*	-0.114*	-0.188*
	-0.0759	*-0.0604*	*-0.0608*	*-0.054*	*-0.0531*	*-0.0557*	*-0.06*	*-0.065*	*-0.112*
Urban (reference= rural)	-0.133	-0.0165	0.0533	0.0349	0.0206	-0.0116	0.0308	0.00595	0.0241
	-0.108	*-0.0856*	*-0.0863*	*-0.0765*	*-0.0752*	*-0.0789*	*-0.085*	*-0.0917*	*-0.159*
North	0.00985	-0.0161	-0.0123	0.00365	-0.0113	-0.0243	-0.0264*	-0.0285	-0.0867***
	-0.0203	*-0.0161*	*-0.0162*	*-0.0144*	*-0.0142*	*-0.0149*	*-0.0161*	*-0.0174*	*-0.03*
South	0.00259	-0.0026	0.00358	-0.00662	-0.00139	-0.00143	-0.0183	0.00351	-0.00461
	-0.0182	*-0.0145*	*-0.0146*	*-0.013*	*-0.0128*	*-0.0134*	*-0.0144*	*-0.0156*	*-0.0269*

*** p<0.01, ** p<0.05, * p<0.1
Standard errors in italics