Inequality of Opportunities in Access to Basic Services Among Children in Host Communities in Jordan and Lebanon: A Comparative Analysis

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INEQUALITY OF OPPORTUNITIES IN ACCESS TO BASIC SERVICES AMONG CHILDREN IN HOST COMMUNITIES IN JORDAN AND LEBANON: A COMPARATIVE ANALYSIS

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Abstract

This paper examines the level of inequality of opportunity among children in host communities in Jordan and Lebanon four years after the beginning of the Syrian crisis. The key focus of the comparative analysis is drawn on estimation of the human opportunity index and measurement of the relative contributions of different circumstances to inequality of opportunity for each country. In comparison with Jordan, Lebanon is found to have made significant progress in terms of access to basic services for children in host communities and how these opportunities are distributed between them. Appreciable improvements have been made, in both countries, in school attendance among 6-18 years old largely attributable to higher access to basic education (up to 81%) and lower inequality levels (less than 3%). However, there are areas of persistent and emerging concerns, including access to water and sanitation services mainly in Jordan. When applying the Shapley decomposition method to examine the question of how much does origin of a child contribute to the inequality in access to critical services we find, as expected, that native-refugee divide, added to other socioeconomic and educational family characteristics are key factors affecting child development outcomes in host communities. Accordingly, a more inclusive approach and direct interventions targeted at the less advantaged refugees' groups in both countries are strongly needed to offer significant potential for improving overall equity in access to core basic housing services and schooling.

1. Introduction

An extensive body of research reveals that risks to human and cognitive development are not consistently distributed over the life-cycle. They are generally much higher in earlier stages of life, with considerable long-term and in some cases irreversible and disastrous effects later in life. In host communities, as elsewhere in conflict zones, many of the critical inputs for early childhood development, such as access to drinkable water, basic sanitation services, electricity and early education are unequally distributed among children. For instance, in Jordan and Lebanon where more than 1.7 million Syrians refugees are settled from them about half are children, over half are female, and 60 percent are single, seven in ten registered refugees living could be considered poor, and a vast majority is either poor today or expected to be poor in the near future according to the UNHCR's cash assistance threshold (Verme et al., 2015). Other statistics from the UNICEF [2] show that about 85 per cent of Syrian children in host communities in Jordan live in poverty, and the gap between refugees and native-born has widened during the past decade. Such gap in welfare in host communities, shown in the recent World Bank's report (Verme et al., 2015), may contribute considerably in turn to inequality in desirable early childhood development outcomes, and, as such, represents an important source of inequality later in life.

It's well known in the literature that family socioeconomic status has an important impact on children's access to essential basic services (Ersado and Aran, 2014; Jemmali and Amara, 2015, 2018; Jemmali, 2019). The higher the family's socioeconomic status, the higher the qualities of children's educational opportunities attend and the better are the living conditions in term of access to services. Such access to core basic services or lack thereof will substantially determine education, health and labor market outcomes of Children, and thus their income-earning potential later in life. Longitudinal studies reveal that vicious cycle of poverty could be broken by multiplying investment in children from poor and vulnerable families which may translate into higher earnings in adulthood. Indeed, more equitable access to essential services earlier in life could lead to more human capital accumulation and higher economic growth (see Galor and Zeira, 1993 for theoretical evidence; Birdsall and Londono 1997 for empirical evidence). While the acceptable level of inequality of outcomes (such as income and employment) in a society have long been the subject of debates between scholars, policies to maintain a somewhat equality of opportunity among all children, regardless of their socioeconomic background, are embraced across the political spectrum. As stated by Heckman and Masterov (2007), early childhood development interventions are then generally considered as some of the few policy areas where no existence of the traditional equity-efficiency trade-off could be found. It is worth thus to understand how children's opportunities develop and identify policy interventions that contribute to narrowing the impact of predetermined circumstances.

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[2] https://www.unicef.org/press-releases/syrian-children-jordan-poverty-unicef

The main objective of this paper is two-fold: (*i*) to analyze the extent of inequality of opportunity in access to core basic services (i.e., access to public water, piped sewerage, public electricity and school attendance) among children in host communities in both countries Jordan and Lebanon; and (*ii*) to identify for each country the most important circumstances that are beyond the children's ability and affecting their development outcomes. Specifically, we aim in this paper to address a key question: what are the chances that a child in host communities in Jordan and Lebanon will have adequate access to core basic services regardless of his or her circumstances at birth, such as gender, number of siblings, place of birth, and socioeconomic family background?

We draw our analysis on the conceptualization of inequality of opportunity developed in the two World Development Reports (Word Bank, 2006, 2007) and the methodology developed in the recent and growing literature to assess and decompose such inequality of opportunity (see works from Roemer, 1998; de Barros et al., 2009 to Jemmali, 2019). We use the widely known Human Opportunity Index's (HOI) methodology (see Newman (2012) for more details about this method) and micro data extracted from two Syrian Refugees and Host Communities (SRHC) surveys conducted by the World Bank in 2015/16 in Jordan and Lebanon. In addition, we employ the Shapley decomposition method to decompose the observed inequalities into components that are attributable to circumstances a child was born into (e.g., gender, parents' education, migration status, etc.). We attempt to conduct additional exercises with this method, which examine: (*i*) comparisons of the level and extend of the inequalities between the two host communities; (*ii*) the extent to which the same variables explain the level of inequality against children refugees between the two countries.

The paper is structured as follows. Section 2 presents a data and some summary statistics. Section 3 presents the empirical methodology. Sections 4 presents the main results and discussions, while Section 5 concludes.

2. Data and descriptive statistics

2.1. Data and variables

This paper derives its data from the two Syrian Refugees and Host Communities Surveys (SRHCS) which were implemented over 2015-16 in Lebanon and Jordan. [3] These surveys, conducted by the World Bank, were designed to generate comparable findings on the lives and livelihoods of representative samples of the Syrian refugees and host community populations in Jordan and

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[3] These datasets are made available under the World Bank Micro-data Research License:

The SRHCS conducted in Jordan could be obtained from: https://datacatalog.worldbank.org/dataset/jordan-survey-syrian-refugees-and-host-communities-2015-2016

The SRHCS conducted in Lebanon could be obtained from: https://datacatalog.worldbank.org/dataset/lebanon-survey-syrian-refugees-and-host-communities-2015-2016

Lebanon. Furthermore, the other goals of conducting these surveys originally were: *(i)*. to comprehend the implications in terms of social and economic conditions on the host communities. and *(ii)*. to identify the set of strategies to support Syrian refugees and host communities in the immediate and longer term.

As stated by Krishnan and al. (2018), the survey instrument was administered across three countries Lebanon, Jordan, and Kurdish Region of Iraq (KRI), with minor modifications depending on the structure of refugee living conditions. Each survey consists of a predetermined set of questions on demographics, employment, access to public services, health, migration, and perceptions before and after the forced displacement. The results obtained from these surveys may be useful for comparisons between *a)* the refugees before and after displacement, *b)* host communities before and after the refugees' influx, and *c)* the host communities and the displaced. These findings allow us mainly to recognize the direct effect of displacement on the forcibly displaced; and investigate how the local influx of the forcibly displaced has shaped host community outcomes (Krishnan and al., 2018).

Table 1a: Number of surveyed households and individuals in SRHCS by nationality in Jordan

	Jordanian	Syrian	Other Nationalities	Total
Households	899 (38.88%)	1368 (59.17%)	45 (1.95%)	2312 (100%)
Individuals	4741 (37.02%)	7850 (61.30%)	215 (1.68%)	12806 (100%)

Source: Author's calculations from the SRHCS in Jordan.

Table 1b: Number of surveyed households and individuals in SRHCS by nationality in Lebanon

	Lebanese	Syrian	Other Nationalities	Total
Households	1633 (57.00%)	1168 (40.77%)	64 (2.23%)	2865 (100%)
Individuals	6712 (53.60%)	5458 (43.58%)	353 (2.82%)	12523 (100%)

Source: Author's calculations from the SRHCS in Lebanon

The samples in the two SRHCSs (in Jordan and Lebanon) are nationally representative and include interviews with 2312 and 2865 households' heads, from them 59.17% and 40.77%, are Syrians, respectively. A total of 12806 and 12523 individuals are surveyed, from them 61.30% and 43.58% are Syrian, respectively (see Tables 1a and 1b for more details about the considered samples). The strategy implemented in the two 2015-16 surveys is based mainly on generating known ex-ante selection probabilities through a set of data sources and using geospatial segmenting to generate

enumeration areas where they did not exist. Furthermore, some data collected by humanitarian agencies are used to generate sample frames for Syrian displaced populations (Krishnan and al., 2018).

The results, we'll expose below, will be made based on a range of key circumstances and outcome variables derived for all children in the two samples aged under 18 years living in surveyed households. The set of circumstantial variables comprise parents' education and employment, place of residence, and some demographic and economic characteristics, while the outcome variables are articulated around the access to core basic services (water, sanitation, electricity, and education). Specifically, the current application will include, on one hand, four outcome variables and seventy circumstantial covariates on the other (See Annexes).

In the subsequent subsection, we present some stylized facts concerning the aforementioned variables to have a preliminary idea concerning the disparities that may exist between natives and Syrian refugees in Jordan and Lebanon.

2.2. Descriptive statistics

Before delving into the empirical analysis of inequality of opportunity in the two host communities, here we provide a descriptive analysis of the considered outcome variables and the circumstance variables described in the previous sub-section.

Table 2: Summary statistics by group

	Jordan					Lebanon				
	Natives		Syr. Refugees		Normalized Difference	Natives		Syr. Refugees		Normalized Difference
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Outcome variables										
Access to Water	0.31	0.46	0.14	0.35	0.30	0.52	0.50	0.53	0.50	0.00
Access to Sanitation	0.47	0.50	0.30	0.46	0.25	0.87	0.33	0.60	0.49	0.46
Access to Electricity	0.99	0.12	0.48	0.50	0.99	1.00	0.00	0.96	0.19	0.20
Access to Education	0.97	0.18	0.91	0.29	0.17	0.99	0.12	0.83	0.38	0.40
Circumstancial variables										
Gender	0.50	0.50	0.49	0.50	0.01	0.49	0.50	0.50	0.50	-0.01
Age	25.83	19.04	24.67	15.98	0.05	30.93	19.82	24.78	15.43	0.24
Literacy status	0.83	0.37	0.88	0.32	-0.10	0.90	0.30	0.83	0.38	0.15
Education levels										
None	0.06	0.25	0.14	0.35	-0.18	0.04	0.18	0.03	0.17	0.03
Primary	0.38	0.49	0.70	0.46	-0.47	0.26	0.44	0.49	0.50	-0.35
Intermediate	0.21	0.41	0.08	0.27	0.26	0.33	0.47	0.32	0.47	0.00
Secondary	0.20	0.40	0.05	0.23	0.32	0.21	0.41	0.12	0.32	0.17
Diploma	0.13	0.34	0.02	0.16	0.29	0.16	0.36	0.04	0.19	0.30
Higher Diploma	0.01	0.11	0.00	0.04	0.09	0.01	0.10	0.00	0.03	0.09
Scholarisation	0.87	0.33	0.64	0.48	0.40	0.90	0.30	0.57	0.50	0.57
Employment Status										
Not employed	0.76	0.43	0.85	0.36	-0.17	0.66	0.48	0.71	0.45	-0.09
Paid employee	0.22	0.41	0.15	0.35	0.13	0.22	0.42	0.27	0.44	-0.07
Self employed	0.02	0.12	0.00	0.06	0.08	0.08	0.28	0.02	0.12	0.22
Employer	0.01	0.11	0.00	0.05	0.08	0.04	0.19	0.00	0.05	0.18
Child (under 18)	0.44	0.50	0.46	0.50	-0.03	0.33	0.47	0.42	0.49	-0.13
Number of Childreen in Household	2.25	1.82	4.02	2.21	-0.62	1.78	1.47	3.20	2.07	-0.56
Gender of the HH	0.86	0.35	0.84	0.36	0.03	0.93	0.26	0.90	0.29	0.06

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Age of the HH	48.22	14.00	42.33	11.49	0.33	48.33	12.39	41.00	11.38	0.44
Literacy status of the HH	0.91	0.28	0.88	0.33	0.08	0.92	0.26	0.82	0.38	0.22
Education levels of the HH										
None	0.04	0.20	0.07	0.26	-0.09	0.00	0.01	0.00	0.00	0.01
Primary	0.28	0.45	0.71	0.46	-0.66	0.35	0.48	0.42	0.49	-0.11
Intermediate	0.21	0.41	0.08	0.27	0.26	0.35	0.48	0.43	0.49	-0.12
Secondary	0.25	0.43	0.09	0.28	0.31	0.18	0.39	0.11	0.31	0.15
Diploma	0.19	0.39	0.05	0.22	0.31	0.11	0.32	0.04	0.20	0.19
Higher Diploma	0.03	0.17	0.00	0.06	0.15	0.01	0.11	0.00	0.06	0.08
Employment Status of the HH										
Not employed	0.24	0.43	0.59	0.49	-0.53	0.08	0.27	0.18	0.39	-0.22
Paid employee	0.65	0.48	0.39	0.49	0.37	0.47	0.50	0.76	0.43	-0.44
Self employed	0.06	0.24	0.01	0.12	0.18	0.30	0.46	0.05	0.22	0.50
Employer	0.05	0.22	0.01	0.07	0.19	0.15	0.36	0.01	0.10	0.38
Income range of the HH										
1st Range (very poor)	0.04	0.19	0.16	0.37	-0.30	0.01	0.09	0.12	0.32	-0.33
2nd Range (poor)	0.30	0.46	0.57	0.50	-0.39	0.19	0.39	0.75	0.44	-0.94
3rd Range (less poor)	0.60	0.49	0.26	0.44	0.51	0.69	0.46	0.13	0.34	0.98
4th Range (rich)	0.05	0.22	0.00	0.03	0.23	0.08	0.28	0.00	0.04	0.29
5th Range (very rich)	0.00	0.06	0.00	0.04	0.03	0.02	0.15	0.00	0.03	0.15

The descriptive statistics of variables are reported separately by nationality (Natives and Syrian Refugees) in Table 2. In order to compare the two countries, we devote the left part of the table to summary statistics in Jordan and the right one to Lebanon. In term of access to basic services, the table shows large disparity between natives-born and Syrian refugees in both Jordan and Lebanon except in access to water in Lebanon. Jordan has the highest disparity in access to electricity, while disparities in access to sanitation and education in Lebanon are the highest.

Among the two countries, natives-born residents are found to be slightly older, mainly in Jordan, with more years of education. 14% and 17%, respectively, of the surveyed natives in Jordan and Lebanon have at least a diploma, while only 2% and 4%, respectively, of Syrian refugees in the two host countries have been graduated at least once. Schooling is a dummy variable showing whether the respondent has attended school in the past. As expected, the proportion of natives having attended school is higher than that of Syrian refugees in the two countries. Regarding the employment status, summary statistics show that the highest disparity in number between natives and Syrian refugees is among paid employees in Jordan and self-employed in Lebanon.

The summary statistics dealing with households and head of households, showing in the bottom of Table 2, reveal some interesting findings. First, the average number of Children per household is found to be larger among Syrian refugees' families than those of Jordanian and Lebanese ones. Second, when looking at the gender of household heads (HH), the statistics show that the majority of households are headed by males among different groups in the two countries. Such HHs are found to be slightly older, educated, and more graduated among natives-born residents than their Syrian refugees' counterparts. Finally, household's wealth statistics show that poor families are more frequent among Syrian refugees than among native residents. The highest disparities are found among less poor families as 60% and about 70% of households are considered as less poor in Jordan and Lebanon, respectively, while 26% and 13% of the Syrian families are less poor in the two countries, respectively. In the same line, we find that somewhat *rich* families are more frequent among natives in both countries.

3. Empirical methodology

The key assumption in inequality of opportunity theory, as stated initially by Roemer (1998), is that outcome differences arise from differences due to morally irrelevant predetermined circumstances, such as race, gender, place of birth, and family background, over which an individual has no control. Following this assumption, we may distinguish between inequality of opportunity and inequality engendered by differences in adulthood outcomes, such as educational attainment and income. The latter inequality may not only be explained by individual efforts and choices but also depend on a set of primary endowments, knowing as circumstances. One of the suggested methods to dissociate the impact of circumstances, such as those listed above, from individual efforts is to look at inequality in outcomes across circumstance groups. As explained by Bourguignon et al., (2007), distribution of outcome indicators among circumstance groups should

be relatively uniform in value, and all variations in outcomes should be attributed to differences in individual efforts within predefined circumstance groups. To deal only with inequality of opportunity, which is the aim of the current study, we restrict sampled population to children, aged under 18 years, assuming that is not appropriate to speak about inequality in *efforts* since children are too young to exert relevant effort to influence outcomes. Accordingly, inequality of opportunity could be associated to all differences across childhood outcomes in term of access to basic services which can be attributed entirely to differences in circumstances out of their control.

From the current techniques of measuring inequality of opportunity, we follow the well-known Human Opportunity Index's (HOI) approach once the outcomes of interest and the exogenous circumstances are identified (see de Barros et al., 2009; Molinas et al., 2011). Such approach enables us to measure, firstly, how successful a country is in equitably supplying basic services or opportunities (i.e., access to adequate clean water, sanitation, electricity and basic education) to its children. Second, we draw on the Shapley value decomposition method to estimate the relative contributions of each individual circumstance such as gender, location and parental characteristics to total inequality of opportunity in access to critical services.

As initially developed by de Barro et al. (2009), the HOI is defined as a measure of the average availability of basic services, adjusted by how equitably these available services are distributed among circumstances groups. The calculation of the HOI values involves, then, aggregating circumstance-specific coverage rates in a unique scalar measure that rises with overall coverage and declines with the inequalities in coverage among groups with considered sets of circumstances. For illustrating the principle of the index construction, we take the following example: two countries that have the same coverage or average access rate of a certain service may haven't the same HOI values if the access to that service on one country is more concentrated among children of a particular set of circumstances.

Empirically and following de Barros et al. (2009), Son (2013), Jemmali and Amara (2015, 2017), and Jemmali (2019) a dichotomous variable z_i is created from the two SRHCS surveys taking a value of 1 if the ith child of the considered sample has access to the specific opportunity (i.e., access to water, sanitation, electricity and education) and takes a value of 0 otherwise. It can be easily proven that $E(z_i) = p_i = P(z_i)$, where p_i is the probability that this i^{th} child has access to the considered opportunity. As explained above, this depends on a set of exogenous circumstances variables linked to individual and households' characteristics out of the child's control (e.g., gender, parental education and wealth, and migration status).

Considering k circumstances variables $x_{i1}, x_{i2}, \ldots, x_{ik}$, the probability p_i of access to one of the aforementioned services for the ith child could be estimated by means of a logit model as follows:

$$p_i = \frac{e^{(\beta_0 + \Sigma_{j=1}^{k} \beta_j x_{ij})}}{1 + e^{(\beta_0 + \Sigma_{j=1}^{k} \beta_j x_{ij})}} \tag{1}$$

The set of coefficients (β_j) are estimated using the maximum likelihood method. We obtain, then, maximum likelihood estimate, $\hat{p}_i$, of the probability of access to a basic service depending on the aforementioned circumstances. As explained above, any difference in the estimated probability between circumstances groups can be interpreted as an inequality of opportunities among the surveyed children. After estimating such probabilities, a dissimilarity index is estimated as follows:

$$\hat{D} = \frac{1}{2\bar{p}} \Sigma_{i=1}^{n} w_i |\hat{p}_i - \bar{p}| \tag{2}$$

Where $\hat{D}$ is the estimated relative mean deviation that measures the inequality in access rates to a given basic service for groups defined by circumstances, compared with the average access rate to the same service for the population as a whole (de Barros et al. 2009), w_i is the population weight which is equal to $1/n$ with n is the size of the selected sample, and $\bar{p}$ is the average prevalence of access to a service computed as:

$$\bar{p} = \Sigma_{i=1}^{n} w_i \hat{p}_i \tag{3}$$

Accordingly, the D-index can be interpreted, subsequently, as the share of the total number of opportunities that should be redistributed among circumstances groups to guarantee equal access to services. $(E = 1 - D)$ is, then, interpreted, as a measure of equity of opportunity that will be equal to 1 if access is independent of the circumstances and 0 otherwise.

Finally, at the last stage, the HOI of a given basic service or opportunity is computed as the coverage rate $(\bar{p})$, adjusted for difference in its access as:

$$HOI = \bar{p}(1 - D) \tag{4}$$

Since $0 \le D \le 1$, the value of the HOI will be necessarily bounded by 0 and the level of mean coverage $(\bar{p})$. In extreme case, HOI can be equal to 100% only when access is universal (i.e. $\bar{p}$ is 100 and D is 0) Defined as an inequality-adjusted coverage rate, an improvement in the HOI values should be accompanied by an improvement of the total opportunity coverage and/or raising equity in access to those opportunities.

To measure the marginal contributions of different circumstance variables to inequality in access to critical services, we use the Shapley decomposition procedure[4] proposed by Shorrocks (2013).

It consists simply on estimating the marginal effect on the inequality index, for the two countries, of adding or removing each contributing circumstance in a considered sequence of elimination (Betti and Lemmi, 2008; Shorrocks, 2013). As aforementioned, HOI index is negatively dependent on the dissimilarity index (D) (see Eq. 4 above) which depends on the considered set of circumstances. Note further that for the reasons outlined above, HOI and D decreases and increases, respectively, when more circumstances are taken into account. The impact of adding a circumstance A that doesn't overlap with other circumstances can be estimated, then, as:

$$D_A = \sum_{S \subseteq N \setminus \{A\}} \frac{|s|!(m-|s|-1)!}{m!} [D(S \cup \{A\}) - D(S)] \qquad (5)$$

Where N is the set of the total m circumstances; and S is the subset of N circumstances obtained after eliminating the circumstance A (i.e. S does not contain the circumstance A). $D(S)$ is the dissimilarity index estimated with the set of circumstances S and $D(S \cup \{A\})$ is the dissimilarity index estimated with set of circumstances S and circumstance A. Then, using the Shapely procedure, the contribution of the omitted circumstance A to the dissimilarity index can be estimated as:

$$M_A = \frac{D_A}{D(N)}$$

Where $\sum_{i \in N} M_i = 1$, which means that the sum of contributions of all circumstances to the dissimilarity index D adds up to 100 %.

4. Empirical results

Access to core basic services: public network water, piped sewerage, and electricity, as well as children's access to basic education (primary), all show higher human opportunity indexes in Lebanon in comparison with Jordan (Figure 1). As shown in the figure above, these indicators in Lebanon are associated with quite high coverage levels ranging from 50.43% to 97.17% and low dissimilarity indexes ranging from 1.53% to 12.58%. While in Jordan, coverage levels vary between 21.06% to 80.97% and dissimilarity indexes are between 3.04% and 21.05%.

In addition, the figure shows that the highest disparities in inequality of opportunities between the two countries is in access to basic housing services (i.e., water, sanitation, and electricity). In

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[4] this method is drawn principally on the concept of Shapley value in cooperative games.

Jordan, for instance, only 16.62% of the total number of opportunities in term of access to piped water are reallocated equitably between circumstance groups, while in Lebanon about 47% of these opportunities are allocated in equitable shares among the surveyed children. This may be due to differences in infrastructure endowments and housing between host communities in the two countries. However, disparities in school attendance among 6-18-year-old across circumstance groups are generally showing higher levels of HOI and coverage rates and low dissimilarity indexes in both countries. Figure 1 shows that only about less than 3% of the total educational opportunities in both countries would need to be reallocated from circumstance groups with higher-than-average coverage rate to those with lower-than-average coverage rate to achieve equality of opportunities.

Fig. 1 Inequality of opportunity in access to housing services and education in Jordan and Lebanon in 2015/16
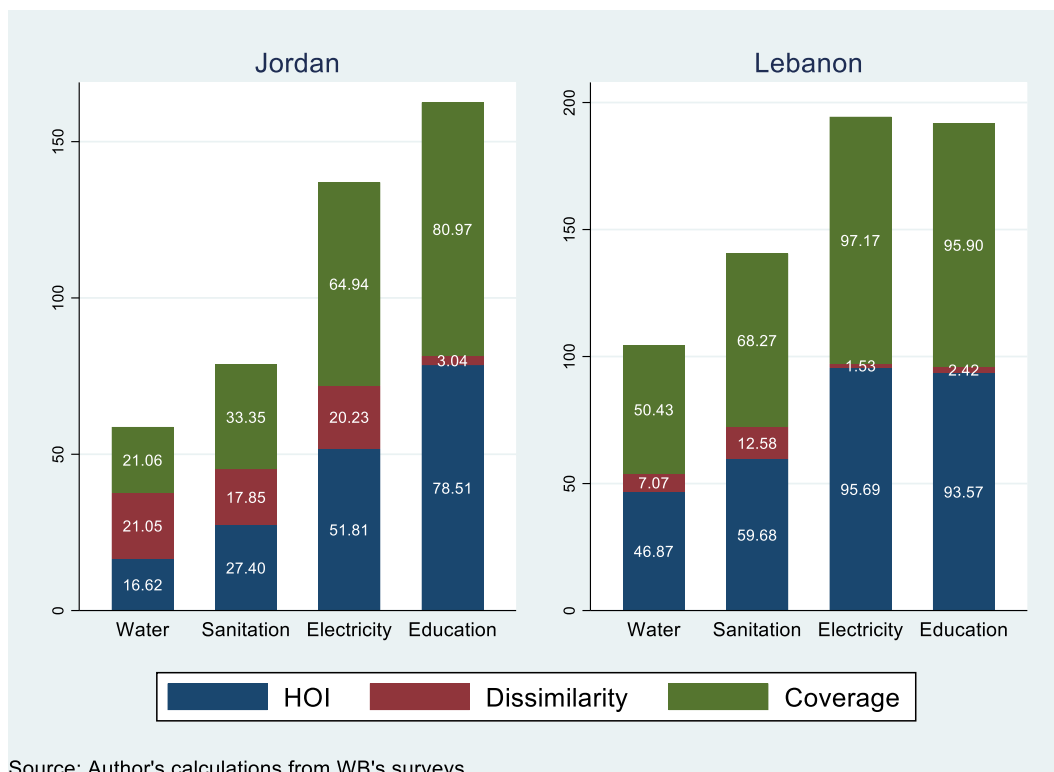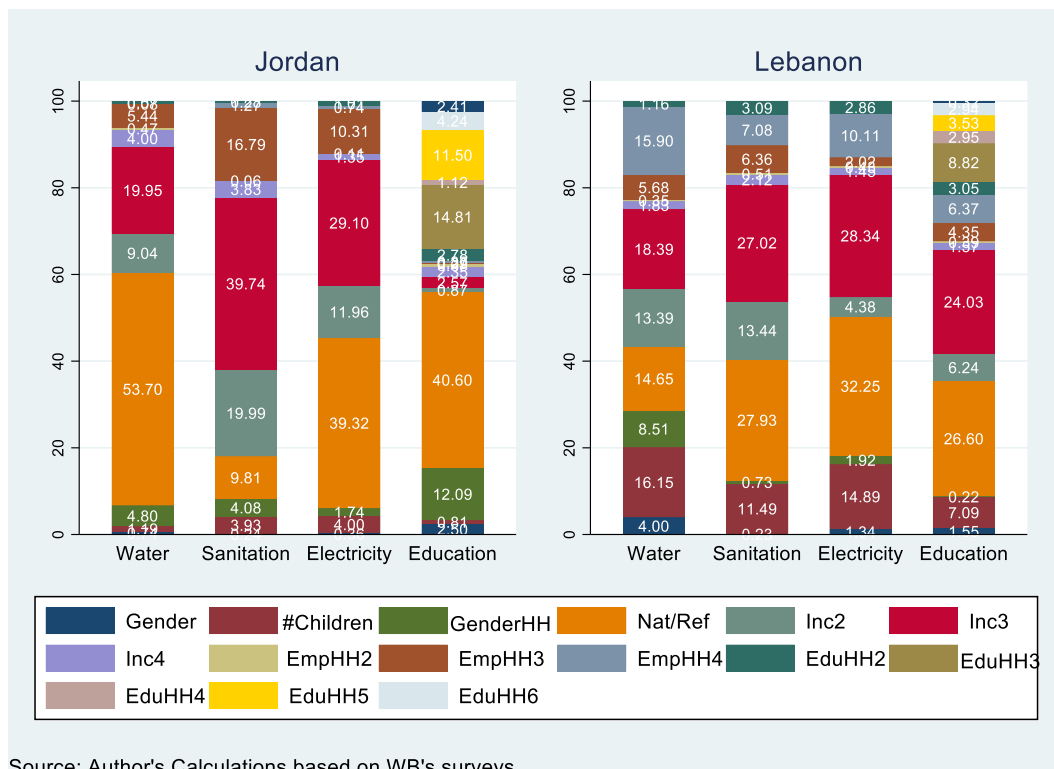

Source: Author's calculations from WB's surveys

Figure 2 summarize the Shapley decomposition results, showing clearly the contribution of different circumstances to inequality of opportunity. For each country, it shows the contributions of gender of the child and household head, migration status (native or refugee), wealth and education level of parents (mainly the father) and other circumstances (employment status of household head and number of siblings) to the D-index, where the contributions of all circumstances add up to 100 percent.

Looking across the two countries and different circumstances, the second figure show some similarities and differences. It reveals that Native/Refugee dummy, which takes 1 if the child is native-born resident and 0 otherwise, explain the largest share of the variations in access to three core services (i.e., access to improved water, electricity, and education) in Jordan. More than half of the inequality in access to public water in this country are explained by the aforementioned variable. In Lebanon the situation is bit different where the Native/Refugee variable is found to be the main contributor in variations in access to sanitation, electricity, and education. In fact, Native/Refugee variable alone explains about one-third of the variation in access to electricity public network in Lebanon. This may confirm, as shown in descriptive analysis, that refugee children tended to be at a disadvantage in access to core basic services in both countries. We may conclude, then, that belonging to a refugee family could be an important source of inequality of opportunity in childhood and later in life.

Fig. 2 Shapley decomposition of inequality of housing and educational opportunities in Jordan and Lebanon in 2015/16

Source: Author's Calculations based on WB's surveys

Furthermore, decomposition results reveal that household wealth, representing by the two dummies *Inc2* and *Inc3* which take 1 if the child belongs to non-rich classes, explains the second largest portion of the variation in access to core housing services in both countries. For instance, in Jordan about 60% of the observed inequality in access to sanitation is explained by the two wealth variables. In Lebanon, more than 40% of this inequality is explained by the two wealth variables. Large part of the observed inequality of opportunities, mainly in Jordan, could be

explained, then, by access gap between children from poor socioeconomic families relative and those of their peers born to more advantaged families.

In contrast with housing opportunities, when looking at the educational opportunity, we find, as expected, that parental education variables *EduHH2* (intermediate level) and *EduHH5* (Higher graduated), following Native-Refugee divide, contribute considerably to the variation in enrollment rates in both countries, explaining about 26% and 13% of the total variation, respectively. Additionally, demographic characteristics such as gender of household head and number of children are found to contribute significantly to inequality in educational opportunities. In Jordan, for instance, 12.09% of the variation is explained by gender of the household head, and about 7.09% is explained by the number of siblings in Lebanon.

5. Conclusion

The study shows some similarities and differences between the two host countries Jordan and Lebanon with regards to the availability of and access to some basic services for children and contributions of some circumstances to inequality of opportunity. In particular, somewhat similarities can be observed in connection with school attendance opportunity among 6-18-year-old. However, when looking at all the opportunities, we find that children living in Lebanon are in better situation than their peers in Jordan in terms of access coverage and inequality of opportunity. We may conclude in this context that there are some areas of persistent and emerging concerns where further efforts are required in the former country to ensure a more equitable access to core basic services among children mainly those from Syrian refugee families.

One of the main objectives of the study was to check if there is a discrimination in access to core basic services against children refugees. The findings confirm that, in both countries, wide differences in access to basic housing services and school attendance among children under 18 years are mostly based on the native-refugee divide and in less extend on family's socioeconomic and educational background. More than half of the large disparities in access to piped water in Jordan is explained by being a refugee or native-born. While in Lebanon, about one-third of the disparities in access to public electricity network is explained by this circumstance. Accordingly, it's worth to conclude based on the current findings that segregation against those least advantaged children emerges as a key area where policy interventions are needed. Particular efforts and targeted interventions aimed at enhancing access for these groups exposed to multiple risk factors would be required and offer significant potential to enhance overall and relative access to the set of core basic services. With no resolution of the Syrian conflict in sight, the situation of Syrian refugees is worsening and the percentage of children who haven't access to needed services may increase in the coming years and reached high levels in refugee camps.

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List of variables:

- Outcome variables:
    - Access to public network water
    - Access to piped sewerage
    - access to public electricity network
    - access to basic education

- Circumstantial variables:
    - Gender of the child: 0 if female and 1 if male. (2 categories)
    - Number of siblings aged under 18 years. (Discrete variable)
    - Gender of the Household head: 0 if female and 1 if male. (2 categories)
    - Native or Syrian refugee: 1 if native and 0 if refugee. (2 categories)
    - Being from a poor family: 1 if yes and otherwise, 0. (2 categories)
    - Being from a less poor family: 1 if yes and otherwise, 0. (2 categories)
    - Being from a modest family: 1 if yes and otherwise, 0. (2 categories)
    - Being from a rich family: 1 if yes and otherwise, 0. (2 categories)
    - Household head being paid employee: 1 if yes and otherwise, 0. (2 categories)
    - Household head being self-employed: 1 if yes and otherwise, 0. (2 categories)
    - Household head being employer: 1 if yes and otherwise, 0. (2 categories)
    - Household head being paid employee: 1 if yes and otherwise, 0. (2 categories)
    - Household head having a primary level of education: 1 if yes and otherwise, 0. (2 categories)
    - Household head having an intermediate level of education: 1 if yes and otherwise, 0. (2 categories)
    - Household head having a secondary level of education: 1 if yes and otherwise, 0. (2 categories)
    - Household head having a diploma: 1 if yes and otherwise, 0. (2 categories)
    - Household head having a higher diploma: 1 if yes and otherwise, 0. (2 categories)