

## The Impact of Syrian Displacement on the Water and Health Sector and Urban Change in Irbid, Jordan

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**Abstract:** The research conducted in Jordan's Irbid governorate focused on the impact of Syrian refugees on various sectors, including urbanization, water, and health services. The study highlighted the significant strain caused by the influx of refugees on basic services like water, health, and housing. Jordan, known for its limited water resources, faced challenges due to the increased demand from both its citizens and refugees. The study aimed to understand how Syrian asylum seekers affected these sectors and urbanization in Irbid.

The findings revealed a substantial impact on basic services, with notable consequences such as increased water consumption, overcrowding in health centers, reduced medical service quality, insufficient healthcare facilities, and a housing crisis. The rise in land and housing prices by 200% posed challenges for both locals and refugees. The burden on the government led to changes in healthcare policies, transitioning from free treatment for Syrians to 80% coverage. Despite challenges, free services like thalassemia and maternal and child health remained available.

The study employed a quantitative approach, distributing questionnaires to 563 randomly selected respondents across different regions in Irbid. The analysis using SPSS software confirmed the significant influence of Syrian refugees on the mentioned sectors. Specifically, the housing crisis in Irbid was exacerbated by soaring real estate prices, making it difficult for married couples to find affordable housing. To cope with rent burdens, refugees resorted to sharing accommodations with other families, leading to housing-related exploitation among citizens.

**Keywords:** Immigration, Asylum, Refugee.

### أثر النزوح السوري على قطاع المياه والصحة والتغير الحضري في إربد، الأردن

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المستخلص: هدفت الدراسة إلى تقييم أثر اللاجئين السوريين على مختلف القطاعات في محافظة إربد بالأردن، بما في ذلك التحضر والمياه وخدمات الصحة. أظهرت الدراسة الضغط الكبير الذي يسببه تدفق اللاجئين على الخدمات الأساسية مثل المياه والصحة والإسكان. واجهت الأردن، المعروفة بمواردها المائية المحدودة، تحديات بسبب الطلب المتزايد من مواطنيها واللاجئين. كانت هدف الدراسة فهم كيف أثر طالبو اللجوء السوريون على هذه القطاعات وعلى التحضر في إربد. كشفت النتائج عن تأثير كبير على الخدمات الأساسية، مع عواقب ملحوظة مثل زيادة استهلاك الماء، ازدحام في مراكز الصحة، تقليل جودة خدمات الرعاية الصحية، نقص في المرافق الصحية، وأزمة في مجال الإسكان. أدى ارتفاع أسعار الأراضي والإسكان بنسبة 200% إلى تحديات للمواطنين واللاجئين على حد سواء. أدى هذا العبء على الحكومة إلى تغييرات في سياسات الرعاية الصحية، حيث انتقلت من تقديم علاج مجاني للسوريين إلى تغطية 80% على الرغم من التحديات، ظلت خدمات مجانية مثل فترات التلاسيما وصحة الأم والطفل متوفرة. استخدمت الدراسة نهجًا كميًا، حيث قامت بتوزيع استبيانات على 563 مستجيبًا تم اختيارهم بشكل عشوائي في مناطق مختلفة في إربد. أكد التحليل باستخدام برنامج SPSS تأثير لافت للاجئين السوريين على هذه القطاعات. خصوصًا، شهدت أزمة في مجال الإسكان في إربد ارتفاعًا في أسعار العقارات، مما جعل من الصعب على الأزواج المتزوجين إيجاد سكن بأسعار معقولة. للتغلب على أعباء التأجير، لجأ طالبو لجوء إلى مشاركة المسكن مع عائلات أخرى، مما أدى إلى نشوء شكل من استغلال يتعلق بالإسكان بين المواطنين.

الكلمات المفتاحية: الهجرة، اللجوء، اللاجئين.

## 1. INTRODUCTION

When the Arab uprisings spread from their initial spark or something similar, Tunisia turned to Syria, where it became an Arab autumn but a hot winter due to the regime's failure to fall, which led large numbers of Syrian citizens to resort to the quietest and safest places. Jordan shares a border with Syria to the south is a place for the forced emigration movement coming from its various governorates.

Since the outbreak of the Syrian revolution and over time, the regime has tightened its grip even more as a result of the international interventions supported by Russia, Iran, and Lebanese Hezbollah, which has made it more complicated and difficult to fall. It made Syria a place of death, destruction, hunger, and disease. The region was famous for its beautiful nature and ancient cultural history, but it became a hot spot, forcing citizens to flee to various parts of the earth through sea and land migration. Because Jordan shares a border with Syria to the north, it was the first destination of displacement of Syrians and their concentration in the closest provinces to the border, as Irbid.

In general, migration has a political burden on the host countries and raises security concerns related to the large numbers of these countries and the issue of organizing, managing, and dealing with them. It is important to consider the economic consequences of the Syrian asylum in Jordan, which are to provide food and health relief, safe shelters, education, and service centers. This will put pressure on Jordan and on the Jordanian in the sharing services sector.

This research relies on the descriptive approach as the main method in its study of the problem and the analytical approach as an auxiliary method for extracting and analyzing the results. We will follow the following objectives to study the problem and analyze it: designing a questionnaire covering all variables to determine the economic and demographic impact on the health and water sectors and the urban expansion and its impact on the study sample.

We can say that the problem of the study was represented by the waves of asylum that came to Jordan over time, which affected, in one way or another, the host country, Jordan. Across the history of Jordan, there have been waves of migration: Palestinian refugees in 1948 and 1967, Iraqi refugees in 2003. And recently, the presence of Syrian refugees persisted from 2011 until the end of 2018. Jordan has 1,053,462 Syrian refugees and 308,939 Syrians in Irbid, 29.3% of the total number in Jordan, and Irbid is the second following the capital Amman in the number of refugees (Department of Statistics, (2016). This constitutes a social and economic burden on the population, in addition to the burden on the infrastructure facilities in the governorate, especially the education and health sectors. According to the 2017 statistics, Irbid has a second place after the capital of the refugee population. In Jordan, 80% of the refugees are outside the camps, and the rest are accommodated in 5 camps (Al Zaatari, Marjib Al Fahud, Cyber City Blue Park) (Department of Statistics, (2017).

Syrian asylum and its impact on the urban sector, water, and health the urban sector the rise in land prices due to the increase in urbanization and the rise in the average rent of housing increased by 200% of the normal rate (Public Institution for Housing, (2021), and 79% of the refugees live in rented accommodation, while the rest live with relatives or in exile (m.p.c., (2021). The additional government expenditure on the Ministry of Housing in 2017 was 320580 million US dollars (m.p.c., (2021). All this is a burden on the government and the citizens that needs to be resolved.

The impact of refugees on the services sector, particularly the health sector, has been significant. In the initial three years of the Syrian revolution, Jordan provided free medical treatment to Syrian refugees. However, due to the burden on the healthcare system, the treatment became 80% subsidized. Nevertheless, certain services such as thalassemia and maternal and child health services continue to be provided for free (M.Health, (2022). This study aims to examine the impact of Syrian asylum on various aspects, including urbanization in Irbid Governorate. The study will explore how refugees have influenced the pattern of urbanization in the governorate. There are two modes of urbanization: horizontal expansion, which involves using the existing space more efficiently, and vertical expansion, which includes the utilization of new areas, including previously unused agricultural lands. The study may identify a combination of both types, leading to increased housing costs, higher land prices, and additional burdens.

The impact of asylum on basic services, such as the water and health sectors, is profound. Jordan faces significant water scarcity and is considered one of the ten poorest countries in the world in terms of water resources (E.S.C., (2014). The influx of refugees further strains the water sector, as their water consumption exceeds the country's water quota. Jordan requires approximately \$376 million annually to cover the operational costs of providing water services to Syrian refugees (Abu Rumman, (2015). In the health sector, the increasing number of refugees has placed additional pressure on hospitals and health centers in the governorate. The workload in

these facilities has reached 100% due to the influx of refugee patients, including those injured in the conflict (Carnegie Centre. ,(2016). The cost of treating Syrian refugees from the beginning of the revolution until 2015 was estimated to be between \$1 billion and \$998 million.

Furthermore, the study will examine the effects of Syrian asylum on the housing sector. It will analyze the supply and demand dynamics in the housing market, the annual increase in housing construction, and changes in housing prices before and after the arrival of Syrian refugees in the governorate. The study also aims to assess the impact of asylum on the water sector. This includes comparing water consumption quantities, water losses, and changes in water supply periods. The study will address the challenges faced by each sector before and after the arrival of refugees, as well as the satisfaction level of local citizens with these service sectors.

2. Methodology

Jordan the Hashemite Kingdom of Jordan is an Arab country located in southwest Asia. Jordan's located in the southern part of the Levant and the northern part of the Arabian Peninsula. It has common borders with Syria from the north, historic Palestine (West Bank and Israel) to the west, Iraq to the east, and Saudi Arabia to the east and south. Irbid lies in the far north of Jordan. The border extends to south and southeast, where the Yarmouk River is located. The eastern parts of the province are part of the Houran Plain (Ramtha) between Syria and Jordan, while the northern parts overlook the Golan Heights, while the west is geographically composed of plateaus, gradually decreasing below sea level in the Jordan Valley. Irbid is located in northern Jordan, about 20 km south of the Syrian border, and shares a border with Syria (the Nasib border).

Jordan is divided into 12 governorates, each of which is further divided into districts. Irbid governorate includes 9 administrative districts and 18 town councils. The total area of Jordan is 88,794 km<sup>2</sup>, and the area of Irbid is 1,572 km<sup>2</sup>, accounting for 1.8% of the total area (General Statistics., (2022). Jordan's population is 11.302million. The population of Irbid is 2.95700million, making it the second most populous city after the capital(General Statistics. ,( 2022).

Irbid is a city located in the northern part of Jordan, between 32° 32' 44.02" N and 35° 51' 25.99" E. It shares a northern border with Syria, where the Yarmouk River is located. The eastern regions of the governorate are part of the Houran Plain, which extends between Syria and Jordan. The northern parts of Irbid overlook the Golan Heights. From the west, the region is characterized by mid-rise plateaux, gradually descending below sea level in the Jordan Valley.

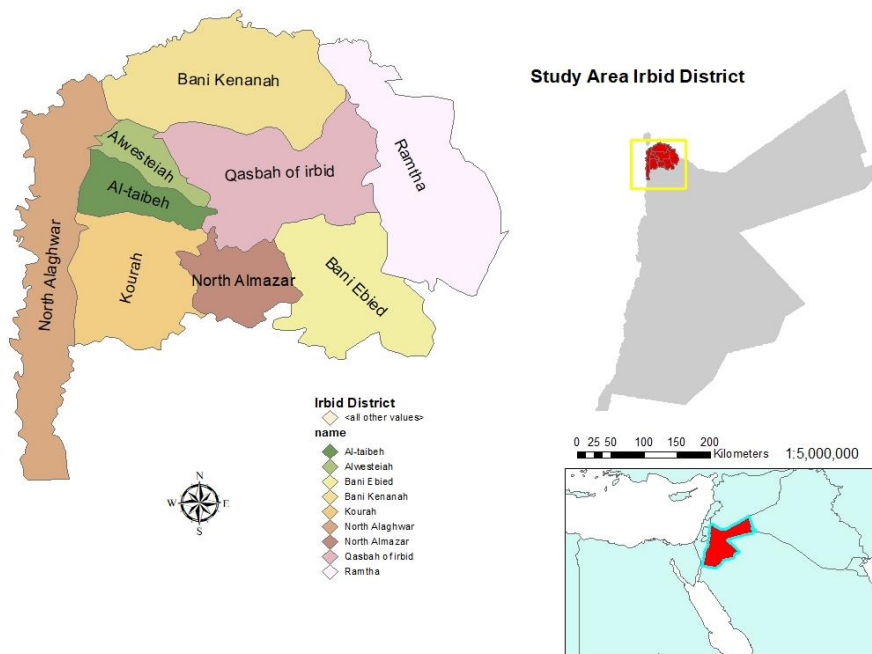


Figure 1: The study area of Irbid Governorate and its administrative divisions

## 2.1 Study design

The research design applied in this study is more specific to quantitative raw data observation techniques. Quantitative research is structured, systematic, organized and clear research from the beginning of the study to the end of the study. In general, quantitative methods relate numerical data and decisions based on positive survey research that uses empirical studies and data obtained are analyzed with statistical tests (Pickering, C & Byrne, J., (2014). This study included a total of 563 participants at the study sites, the process of determining the required number of respondents based on the actual population of the indigenous community at the study site using Krejcie and Morgan (1970) sample size determination. In addition, there are some statistical analyzes used are based on Excel 2010 and (spss) used in this study, namely descriptive analysis (DA), correlation analysis, and regression analysis. Figure (2) shows the design The research format used in this study.

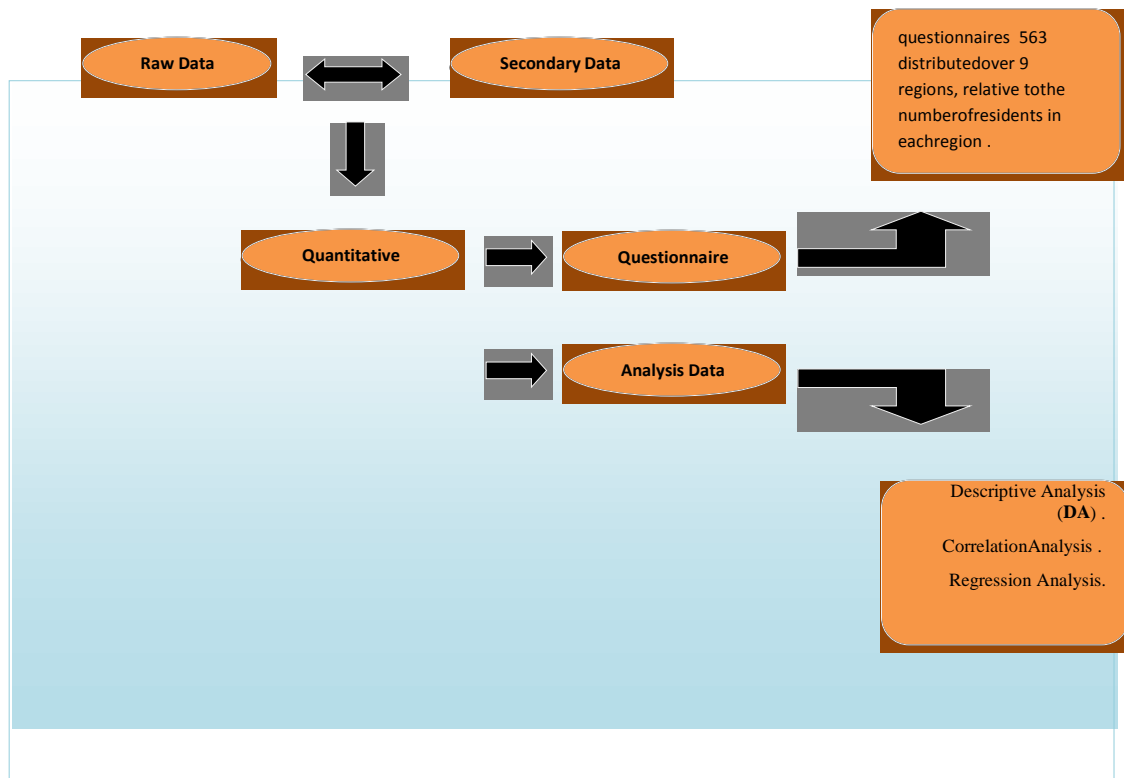


Figure 2: An illustration of the study design

## 2.2 Data Set

In this study, the researcher used the primary source method to obtain primary data. Data were obtained from by designing a questionnaire covering all variables to determine the economic and demographic impact on the health, water, and urban expansion sectors and its impact on the study sample, then distributing questionnaires to the respondents, specifically to the population centers of each of the regions: Qasba Irbid, Taybeh, Al-Wasatiya, Bani-Kenana, Bani-Ubaid, Ramtha, Al-Koura, the Northern Jordan Valley, and North Mazar.

## 2.3 Scale Questionnaire

The questionnaire's final form of 35 questions, where the researcher used a five-point Likerscale to include five degrees, was given. Strongly agree (5), agree (4), neutral (3), disagree (2), strongly disagree (1), and by place a checkmark ( $\checkmark$ ) in front of their chosen answer, which reflects the degree of consent, it has also been relying on the following classification of the rule on the averages as follows:

- Less than the 2.33 Low agreement degree.

- From 2.34 to 3.66 Medium agreement degree.
- More than the 3.67 High agreement degree.

## 2.4 Analyze the Questionnaire Statistically Using SPSS

**Descriptive Statistics (DA)** are just what they sound like—analyses that summarize, describe, and allow for the presentation of data in ways that make them easier to understand. They help us understand and describe the aspects of a specific set of data by providing brief observations and summaries about the sample, which can help identify patterns. The summaries typically involve quantitative data and visuals such as graphs and charts.

Sometimes, descriptive statistics are the only analyses completed in a research or evidence-based practice study. (C & E.,(2017)

- **Correlation Analysis** is a term used to denote the association or relationship between two (or more) quantitative variables. This analysis is fundamentally based on the assumption of a straight-line (linear) relationship between the quantitative variables. Similar to the measures of association for binary variables, it measures the "strength" or "extent" of the association between the variables and also its direction. The end result of a correlation analysis is a correlation coefficient whose values range from -1 to +1. A correlation coefficient of +1 indicates that the two variables are perfectly related in a positive (linear) manner. A correlation coefficient of -1 indicates that the two variables are perfectly related in a negative (linear) manner. A correlation coefficient of zero indicates that there is no linear relationship between the two variables being studied (N&T.,(2017).
- **Regression Analysis** describes the relationship between variables through an equation. Regression analysis measures how much one variable affects another, so it can be used to predict the value of one variable based on another variable. Regression relationships are usually expressed in percentage form (%) and mathematical equations, which can be linear or nonlinear in form. The response variable is often written on the left (y) side of the equation, and the predictor variable is often written on the right (x) side of the equation. In other words, (x) is an independent variable and (y) is a dependent variable (N &T.,(2017).

## 3. RESULTANDDISCUSSION

### 3.1 Results of Descriptive Statistics Analysis

The results of the statistical analysis were consistent with the objectives of the study, which was divided into four sections:

- The impact of Syrian refugees on the water sector in Irbid Governorate
- The impact of Syrian refugees on the health sector in Irbid Governorate
- The impact of Syrian refugees on urban change in Irbid Governorate
- Analysis of the relationship between refugees and urban change in Irbid Governorate

In the results, we will review the analysis of the Irbid Qasabah ofregion regarding the water, health, and urban change sectors as an example for the rest of the nine aforementioned regions.

#### 3.1.1 The Impact of Syrian Refugees on the Water Sector in Irbid Governorate

The results show that the means of the water sector for Live Area (1) Qasabah of Irbid, Live Area (2) Ramtha, Live Area (3) (kourah), Live Area (4) Bani-Kananeh, Live Area (5) (Al-Alghwar North), Live Area (6) (Bani-Ebied), Live Area (7) (North Almazar), Live Area (8) (Al-Taibeh), and Live Area (9) (Alwesteiah) were equal to (3.38, 3.62, 3.59, 3.41, 3.62, 3.60, 3.01, 3.55, 3.47) respectively, and all of these were at medium degree of agreement. This result is attributed to the weakness of the water sector in Jordan, where it suffers from a significant shortage of water resources, coinciding with the increasing demand of the original population and Syrian refugees, which exacerbated the problems related to insufficient water and blockage of sewage lines, and the increase in water losses and the increase in the amount of water consumed in the area, and there is no increase in drilling new artesian wells in my area to cover the demand for water , due to the increased pollution of groundwater sources, and the process of replacing and maintaining damaged public water network lines in the Irbid region is weak, due to the increased costs of providing water through reservoirs, which led to a decrease in the per capita share of water than it was in the past, and despite the existence of water projects implemented by the Ministry of Water to face the consequences of resorting, that there is an increase in complaints of blockage of sewage lines. Since

Jordanian citizens suffer from a shortage of water and its high prices, it is obvious that all these factors played a role in the impact of the Syrian refugees on the water sector. The impact of the Syrian refugee crisis on the water sector in the Kingdom and the pressure and great demand posed by the crisis on water negatively affected the Jordanian citizen and led to a decline in his already low share of water.

These findings are consistent with the study conducted by Ugland (2001), which concluded that most refugee communities are characterized by limited and low-level infrastructure. I also support the findings of the study conducted by UNDP (2014). The study revealed that the Syrian refugees had a significant impact on various economic indicators, leading to increased demand for goods and services and resulting in a higher rate of inflation in the two governorates compared to the overall rate in the Kingdom.

According to Table 1, item No. 5 ("Increasing water wastage and increasing the amount of water consumed in my area") received the highest mean score of 4.18 out of 5, indicating a high level of agreement. In contrast, item No. 6 ("Increasing the drilling of new artesian wells in my area to cover the demand for water") received the lowest mean score of 2.74, indicating a moderate level of agreement. The mean score for the water sector was 3.38, also indicating a moderate level of agreement.

**Table 1 Applying the standard deviation to the Water sector in Qasabah of Irbid District**

No	Item	Mean	Standard. Deviation	Agreement Degree
1	Insufficient water supply from the public network in my area.	3.72	1.27	High
2	The low amount of water I get from the public network.	3.83	1.10	High
3	The water pumping power has decreased and does not rise.	2.75	1.31	Medium
4	Increasing complaints of blockages in sewage lines.	3.23	1.33	Medium
5	Increasing water wastage and increasing the amount of water consumed in my area.	4.18	1.13	High
6	Increasing the drilling of new artesian wells in my area to cover the demand for water.	2.74	1.31	Medium
7	Increased pollution of groundwater sources.	2.99	1.34	Medium
8	Increase the replacement and maintenance of damaged public water network lines in my area.	3.96	1.10	High
9	Increasing the costs of providing water through tanks.	3.09	1.20	Medium
10	Decreasing in the per capita share of water than it was in the past.	3.11	1.24	Medium
11	Increasing the water projects implemented by the Ministry of Water to face the consequences of asylum.	3.18	1.22	Medium
<b>Total Degree</b>		<b>3.38</b>	<b>0.62</b>	

3.1.2 The Impact of Syrian Refugees on the Health Sector in Irbid Governorate

The results indicate that the means of the health sector for the following Live areas: (1) Qasabah of Irbid, (2) Ramtha, (3) Kourah, (4) Bani-Kananeh, (5) Al-Alghwar North, (6) Bani-Ebied, (7) North Almazar, (8) Al-Taibeh, and (9) Alwsteiah were 3.74, 3.83, 3.96, 4.01, 3.91, 4.04, 3.26, 4.02, and 3.89, respectively. Most of these means were in high agreement."

This negative impact is a result of multiple factors, including increased pressure on government health centers due to the higher number of visitors, reduced staff capacity in medical institutions to provide services, the inadequacy of medical facilities in the governorate, shortages of certain medicines in government medical institutions relied upon by Jordanian citizens, longer appointment periods for medical reviews in government medical institutions, and the need for additional medical staff and equipment to address these shortcomings. Moreover, the spread of infectious diseases among refugees, financial deficits in the health sector due to insufficient resources, and the strain on medical equipment and hospital infrastructure have all contributed to this impact. The demand for the health sector has increased due to the Syrian refugee crisis.

These findings align with the study conducted by UNDP (2014), which indicated that all government services in the two governorates were affected to varying degrees. The government's ability to cope with these challenges was hindered by the overwhelming pressure on services exceeding their operational capacity.

Table 2 indicates that the item with the highest average rating (4.26 out of 5) was item No. 9: "Increasing the time periods in the appointments of medical reviews in the government medical institutions that I review," which received a high level of agreement. On the other hand, item No. 2: "Decreased ability of the medical staff to provide medical services to the auditors" received the lowest average rating of 3.01, indicating a medium level of agreement. The health sector as a whole received an average rating of 3.74, indicating a high level of agreement.

**Table 2 Applying the standard deviation to the health sector in Qasabah of Irbid District**

No	Item	Mean	Standard. Deviation	Agreement Degree
1	Increasing pressure on government health centers in terms of the number of visitors.	3.11	1.24	Medium
2	Decreased ability of the medical staff to provide medical services to the auditors.	3.01	1.41	Medium
3	Inadequate medical institutions in the governorate.	3.47	1.20	Medium
4	Reductions in some medications in the government medical institutions I review.	3.50	1.12	Medium
5	Increasing the time periods in the appointments of medical reviews in the government medical institutions that I review.	4.26	0.95	High
6	The medical institutions I review need an increase in medical staff due to shortcomings.	3.84	1.13	High
7	The medical institutions I review need to maintain and purchase new medical devices.	4.11	1.01	High
8	Increasing the spread of communicable diseases among refugees.	3.97	1.09	High
9	The financial deficit in the health sector as a result of the lack of the necessary financial resources.	4.16	0.94	High
10	The great pressure on medical equipment and hospital infrastructure.	4.02	0.99	High
<b>Total degree</b>		<b>3.74</b>	<b>0.61</b>	

### 3.1.3 The Impact of Syrian Refugees on the Urban Change in Irbid Governorate

The results show that the average rates of urban change for Live Area (1) Qasabah of Irbid, Live Area (2) Ramtha, Live Area (3) (kourah), Live Area (4) Bani-Kananeh, Live Area (5) (Al-Alghwar North), Live Area (6) (Bani-Ebied), Live Area (7) (North Almazar), Live Area (8) (Al-Taibeh), and Live Area (9) (Alwesteiah) were 3.81, 3.98, 4.19, 4.15, 3.99, 4.12, 3.17, 3.97, and 3.92, respectively. Furthermore, most of these rates showed a high level of agreement. This outcome is ascribed to the transformation of societal essence and the influx of diverse individuals from various cultures, each harboring distinct perspectives on Jordanian society. The Jordanian society has become more appealing to Syrian tenants due to the involvement of international organizations in covering rental expenses. Additionally, refugees are opting to share accommodation with other families to alleviate the financial burden of rent. The Jordanian tenant hesitates to request your departure from the premises due to the existence of superior alternatives. The Jordanian renter is concerned about his request to increase the rental price. There exists a disparity between the rental rates and the income of the Jordanian populace. An actual housing crisis has emerged in the Irbid region. Specifically, individuals who enter into marriage encounter challenges in locating suitable housing and securing lucrative employment. The region has experienced a substantial surge in land and real estate prices, resulting in exorbitant construction costs for homes in Irbid. To cope with the burden of rent, refugees often share accommodations with other families. Additionally, the individual in question has matured in this environment. Housing

exploitation is a form of abuse that occurs among citizens. This finding corroborated the research conducted by Abees (2008), which indicated that the population in the study area has expanded towards its periphery due to natural population growth and migration. Additionally, the study revealed that 51% of immigrants experience unfavorable economic circumstances, with 23% of these individuals residing in impoverished residential communities characterized by challenging living conditions. This finding is consistent with the study conducted by the United Nations Development Program in 2014. The study revealed that the attributes of family housing in the host regions, coupled with the escalation in rental prices, intensified the difficulties within the home setting. I concur with the findings of the study conducted by Al-Momani and Al-Athamna (2016) that the Syrian refugee crisis primarily impacts the economic and developmental aspects. Subsequently, it affects the environmental, psychological, and social dimensions. Lastly, the media dimension also plays a role in influencing the protection of the Jordanian tenant.

Table (3) shows that the highest means reached (4.05) out of (5) for item No. (5) "The emergence of a real housing crisis in my region in particular and Irbid as a whole" by high agreement degree, but the lowest means were (3.38) for item No. (10) "A kind of exploitation has arisen with regard to the issue of housing among the lessors" by medium agreement degree, and means reached (3.81) for urban change by high agreement degree.

**Table 3 Applying the standard deviation to the urban change sector in Qasabahof Irbid District**

No	Item	Mean	Standard. Deviation	Agreement Degree
1	Preferring the Syrian tenant over the Jordanian one, because international organizations are in the process of paying the rent.	3.99	1.03	High
2	The Jordanian tenant is wary of being asked to leave the house because there are better alternatives.	3.93	1.11	High
3	The Jordanian tenant is worried about being asked to raise the rental price	3.96	1.06	High
4	There is a difference between rental prices and the income of a Jordanian citizen	3.81	1.10	High
5	The emergence of a real housing crisis in my region in particular and Irbid as a whole.	4.05	1.12	High
6	People who come to marry have difficulties finding housing and high wages.	4.04	1.06	High
7	Land and real estate prices have risen significantly	3.58	1.16	High
8	An increase in the price of land, which led to an increase in the cost of building a dwelling.	3.57	1.17	High
9	Refugees share housing with other families in order to bear the burden of rent.	3.78	1.19	High
10	A kind of exploitation has arisen with regard to the issue of housing among the lessors.	3.38	1.17	Medium
<b>Total degree</b>		<b>3.81</b>	<b>0.72</b>	

3.1.4 Analyze the Relationship Between Refugees and Urbanization Change in Irbid Governorate

Table 4 shows the person-to-person correlation between refugees and urban change. The result shows there is a statistically significant high positive relationship between refugees and urban change ( $r = 0.938, P < 0.05$ ).

The prior investigation revealed a positive correlation between refugees and urban change. The researcher explains that the high number of Syrian refugees, who often come as families, has resulted in a greater need for housing that accommodates their needs. As a consequence, there has been a substantial increase in the demand for housing units, leading to a significant rise in housing costs across different regions of the governorate. In some areas, housing costs have tripled compared to pre-Syrian asylum levels. Consequently, the housing problem has become a local issue affecting both Jordanians and non-Jordanians.



What confirms the result of the above is the correlation analysis that showed a high positive relationship between urban change and Syrian asylum, which was the result of  $r = 0.938$ ,  $P < 0.05$ .

**Table 4 Results of Pearson correlation analysis between Syrian refugees and urban change in Irbid**

Variables	Statistics	Refugees
Urban change	Correlation R	.938**
	P.	.000

Table 5 shows the impact of the refugees on urban change. The results of the statistical analysis showed the presence of a statistically significant impact of refugees on urban change, with a correlation coefficient of R (0.938) at the level of significance ( $\alpha \leq 0.05$ ). The coefficient of determination R<sup>2</sup> has reached 0.88, which means that the value of 88% of changes in urban change from changes in refugees confirms this conclusion. The F value was calculated, which amounted to (4116.41), which functions at the level of significance ( $\alpha \leq 0.05$ ). This proves that the regression is statistically significant and that refugees have a statistically significant effect on urban change. The result shows that refugees have a statistically significant positive effect on urban change in the amount of 1.02, which means that when the number of refugees goes up by one level, urban change goes up by 1.02 as well.

**Table 5 Applying simple linear regression analysis to the impact of Syrian refugees on urban change in Irbid**

$\beta_0$	$\beta_i$	T	Sig.T	R	R <sup>2</sup>	F	Sig.F
.023	1.02	64.16	.000	.938	.880	4116.41	.000

### 3.2 CONCLUSION

The Hashemite Kingdom of Jordan has experienced waves of immigration from Syria since 2011 during the outbreak of the Syrian revolution. These migrations have spread throughout the kingdom, but they have been more concentrated in areas close to Syria, particularly in Irbid. Therefore, Irbid was chosen as the study area due to its geographical proximity. It was divided into nine administrative regions, namely Qasabah of Irbid, the northern shrine, the northern valleys, Bani-Obeid, Al-Ramtha, Bani-Kinana, Al-Kora, Al-Wusatia, and Al-Taybah. Migration always has a significant impact on the host country, so we aimed to clarify this impact through a study on the service sectors, specifically the water sector, health sector, and housing sector. The influx of refugees has created immense pressure on the service sector, resulting in various changes that affect the share of Jordanian citizens. Examples of these changes include increased housing prices and wages, decreased per capita water availability, increased strain on sewage networks, and increased pressure on hospitals and medications, as discussed in the earlier chapters. A model has been developed to assist decision-makers in identifying areas with higher service demands and determining the need for additional projects, reinforcements, or services.

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