

## Overcoming Barriers: Transportation and Employment Access for Syrian Refugees in Mafraq City, Jordan

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### Abstract

Studies indicate that having access to employment opportunities is crucial; however, access to the labor market for refugees has been discovered to be significantly hampered by transportation issues. Yet studies have yet to examine refugee travel patterns and their experiences accessing employment opportunities, particularly in the Middle East. Therefore, this study explores the transportation experiences of Syrian refugees in Mafraq City, Jordan. Specifically, this research addresses the following questions: How are transit Syrian refugees overcoming transportation challenges and barriers? How are decision-makers addressing refugee needs in the planning process in Mafraq? The study utilizes an exploratory qualitative methodology that combines semi-structured interviews with Syrian refugees and surveys.

The study's findings show how Syrian refugees in Mafraq, Jordan, overcome transportation barriers to access employment, focusing on two main aspects. First: Community-Led Adaptation: To overcome transportation challenges and increase mobility, refugees turn to unofficial networks, shared resources, and grassroots projects. These strategies demonstrate the ability to use community-based solutions and the tenacity of displaced populations. Second: Approaches to Policy and Planning: Mafraq's decision-makers have had differing degrees of success in addressing the country's transportation issues. To address refugee mobility, the study looks at existing regulations, finds gaps, and investigates how to include transportation demands into greenway and sustainable urban development frameworks.

This study highlighting how mobility, equity, and sustainability connect in urban landscapes. It emphasizes the necessity of integrated planning strategies prioritizing at-risk populations and connecting transportation planning with long-term regional resilience and employment access. The findings also promote the participation of refugees in planning procedures to create fair, accessible, and inclusive greenways that benefit both host and displaced communities.

**Keywords:** Refugee Mobility, Transportation Challenges, Employment Access, Refugees, Sustainable Planning, Inclusive Greenways, Community Resilience, Policy Responses, Urban Equity

### Introduction

The Syrian crisis, ongoing since 2011, has displaced over 6.6 million refugees globally by 2024, with most in neighboring countries. Turkey hosts the largest number, over 3.4 million Syrians. In Jordan, while the government estimates over 1.3 million refugees, only 658,000 are officially registered (UNHCR, 2024). Lebanon and Iraq also host large populations, with 815,000 and

256,000 refugees, respectively. Germany remains the largest host in Europe, with nearly 600,000 refugees, followed by smaller groups in Sweden, Greece, Austria, and the Netherlands. Canada, with UNHCR support, continues resettling refugees, recently receiving individuals from Lebanon (UNHCR, 2024).

Employment and integration into the labor market are two of the most examined aspects of integration (Ager & Strang, 2008). For self-reliance and sustainable livelihood opportunities, access to employment opportunities is essential (Mencutek & Nashwan, 2020). However, transportation has been highlighted as a significant challenge to refugees' access to the labor market. Transportation access to employment opportunities is necessary because it offers economic independence and helps refugees establish new social relations (Cheung & Phillimore, 2014).

Accordingly, this study aims to address the gap in the literature as there are limited studies on the transportation patterns of Syrian refugees in Jordan, about on the relationship between employment access and transportation for Syrian refugees in Jordan. The research methodology employs an exploratory qualitative approach that includes surveys and interviews as the main data collection methods. The goal is to provide a clear understanding of the experiences of Syrian refugees in accessing transportation and employment opportunities.

In this research, Mafraq city, located in northern Jordan, was chosen as the study area ). (Alhusban et al., 2019). Since the start of the Syrian crisis in 2011, Mafraq city has welcomed approximately 158,017 Syrian refugees, inside and outside the Zaatari camp (UNHCR, 2024). Mafraq city is already impoverished and unable to meet the rising demand for essentials services resulting from the population increase of Syrian refugees (Mercy, 2012). Therefore, this study explores the transportation experiences of Syrian refugees in Mafraq City, Jordan. Specifically, this research addresses the following questions: How are transit Syrian refugees overcoming transportation challenges and barriers? And how are decision-makers addressing refugee needs in the planning process in Mafraq?

## **Background and Literature Review**

### ***Transportation and Job Accessibility***

The ability of refugees to access a variety of needs and opportunities will allow them to engage and integrate into new communities. Mobility for refugees is about much more than utility and comfort - the capacity to travel to jobs, educational opportunities, and healthcare inevitably leads to a higher quality of life, a greater sense of independence, and a stronger sense of belonging in their new communities (Bose, 2014). Transportation in particular has a favorable impact on employment since it gives people easier access to job opportunities (Bastiaanssen et al., 2020). Limited transportation options can create significant barriers to securing and maintaining stable employment, particularly for refugees facing legal, financial, and social constraints.

Public transit: Refugees and immigrants often rely on public transportation due to financial limitations and restricted access to private vehicles (Blumenberg, 2009). Data from the 2006 American Community Survey (ACS) indicates that immigrants are 2.8 times more likely to use public transit and 1.8 times more likely to carpool than non-immigrants (Blumenberg, 2009). However, limited and inefficient public transportation services can restrict employment

opportunities, particularly in sectors requiring early or late shifts (Bose, 2013). Many refugees work in industries such as construction, manufacturing, and food services, which often require travel beyond standard public transit hours, creating additional barriers (Alhajahmad et al., 2018)

Carpooling as an Alternative for Employment Access: Carpooling is a common alternative for refugee households, providing cost-effective mobility and access to employment opportunities in areas with poor transit coverage (Galland et al., 2014). Social networks play a critical role in facilitating carpooling arrangements, particularly within ethnic and cultural communities (Liu & Painter, 2012). Gender disparities also influence carpooling patterns, with immigrant women more likely to rely on shared transportation than men due to safety concerns, cultural norms, or financial constraints (Blumenberg, 2009).

Walking and Biking as Last-Resort Employment Access: In the absence of affordable transportation, many refugees rely on walking or biking to reach work (Blumenberg, 2009). According to ACS data, immigrants are 1.4 times more likely to use bicycles or walk compared to native-born residents (Blumenberg, 2009). In Jordan, nearly 49% of Syrian refugees simply walk to work, often because their jobs are located near their residences (Tiltne et al., 2019). However, long travel distances, unsafe walking conditions, and extreme weather can make these options unreliable for sustainable employment.

### ***Transportation Barriers and Employment Limitations***

Financial Challenges: Transportation costs can be a significant burden for refugees, limiting their ability to access employment opportunities beyond their immediate neighborhoods (Heatwole, 2020). Many refugees cannot afford private vehicles or even daily public transportation fares, restricting their job search to locations within walking distance (Bose, 2013).

Limited Public Transportation Infrastructure: Public transit availability and reliability are often inadequate in refugee-hosting regions, exacerbating employment challenges. Many cities, including those in Jordan, lack efficient and extensive transit networks, forcing refugees to take multiple modes of transportation to reach job locations (Morken & Skop, 2017). Delays, overcrowded buses, and infrequent service further hinder consistent employment attendance, especially for those in shift-based jobs (Fumagalli et al., 2021).

Legal and Administrative Barriers: Refugees in many countries face legal restrictions regarding driver's licenses, vehicle ownership, and employment-related mobility. In Jordan, refugees require work permits to be legally employed, yet many are unable to obtain them, further limiting their options (Kattaa, 2015). These restrictions force refugees to rely heavily on public transit or informal transportation networks, often at greater financial and logistical costs (Heatwole, 2020).

Physical and Spatial Constraints: Many refugees live in areas with inadequate transportation infrastructure, forcing them to travel long distances to work. The need to walk to distant bus stops or endure physically demanding commutes presents a significant challenge, particularly for those in physically intensive jobs such as construction or agriculture (Heatwole, 2020). Additionally, long commuting hours reduce the feasibility of working multiple jobs, further limiting income potential.

## ***Refugee Employment and Transportation in Jordan***

Jordan has granted limited labor rights to Syrian refugees, restricting them to sectors such as construction, manufacturing, agriculture, food services, and retail (Alhajahmad et al., 2018). Many of these jobs require travel beyond residential areas, but limited and expensive transportation options make them difficult to access. A study found that 40% of Syrian refugees in Jordan work in construction, 23% in retail, and 12% in food services (Kattaa, 2015). However, only 10% have received official work permits, meaning many work informally, further limiting their access to stable transportation and employment (Kattaa, 2015).

## ***Community Support and Alternative Mobility Strategies***

Social networks and ethnic community ties play a crucial role in mitigating transportation challenges for employment access (Blumenberg, 2009). Refugees rely on relatives, friends, and community organizations to arrange carpools, share transportation costs, and navigate legal barriers to mobility (Portes and Bach, 1985). NGOs and service providers also offer transportation assistance, including shuttle services, driving lessons, and taxi vouchers, which help improve employment accessibility (Bose, 2013b).

## **Method and Data**

### ***Research Area***

In the governorates of Amman, Irbid, and Mafraq, more than 76 percent of Syrian refugees live (Alhusban et al., 2019). Mafraq governorate is located in the northeast of Jordan and has an area of 26,552 km<sup>2</sup>, making it Jordan's second-largest governorate (Alhusban et al., 2019). Through it, Jordan is connected to Iraq in the east, to the frontiers of Al-Karama, and Syria in the north, through the borders of Jaber (Rjoub, 2019). Mafraq Governorate is located 72 km north of the capital Amman, covers the second largest area in the Kingdom with 29.6 percent of the total area (Alhusban et al., 2019), and consists of four districts and thirteen sub-districts with a population of 622,500 (DOS, 2020).

This research focuses on the Mafraq sub-district (see Figure 1), a small city with a special urban character, characterized with a warm architectural typology and social fabric, with scarce resources and a high level of local unemployment (Alhusban et al., 2019). The city received a total of 166,827 Syrian refugees since the crisis started in 2011, with 79,636 inside the Zaatari camp and 87,191 outside the Zaatari camp (UNHCR, 2021), constituting 62 percent of the total local population in Mafraq city, 144,180 people (DOS, 2020).

### ***Data Collection***

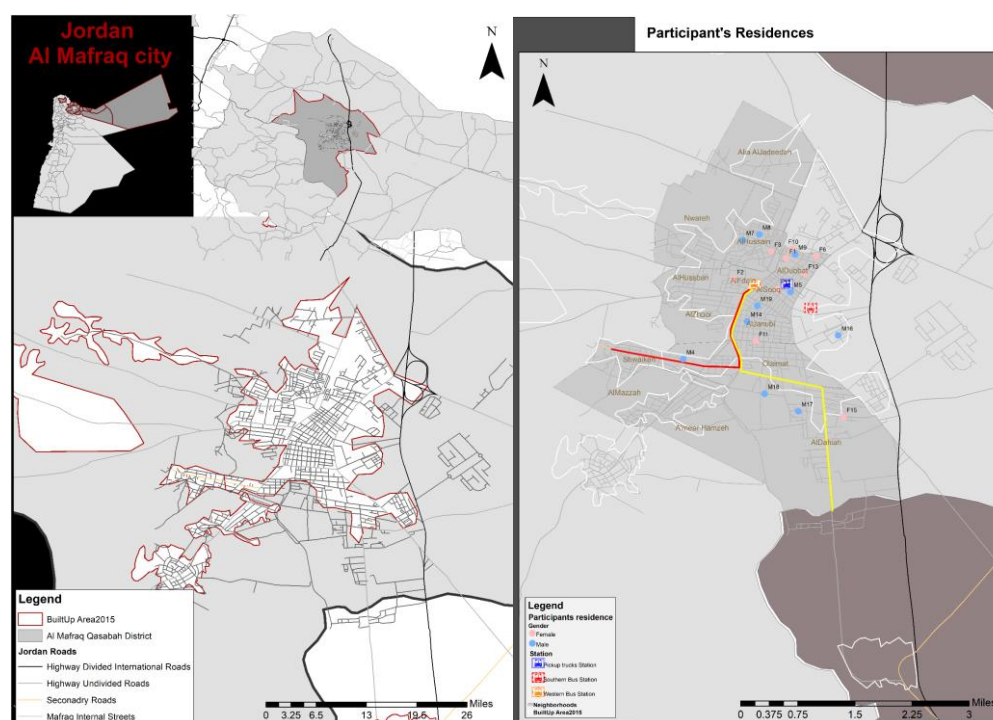
This study used a qualitative approach to examine Syrian refugees' transportation patterns in accessing employment in Mafraq City, utilizing surveys and semi-structured interviews due to the lack of existing data. Participants were recruited through purposive and snowball sampling, with calls for participation shared on social media and facilitated by NGO and community organization gatekeepers. The study targeted Syrian refugees aged 18-60 for males and 18-55 for females, following Jordanian Labor Law (1996).

The survey was conducted over three months (September 19 – December 12, 2021) and was completed by 70 Syrian refugees. In addition, semi-structured interviews were conducted with two groups: 19 face-to-face interviews with employed Syrian refugees, and 7 interviews with decision-makers from Mafrq, including representatives from three governmental institutions (Mafrq Municipality and the Land Transport Regulatory Authority) and NGO collaborators. Interviews were conducted in Arabic, audio-recorded, transcribed, and translated into English.

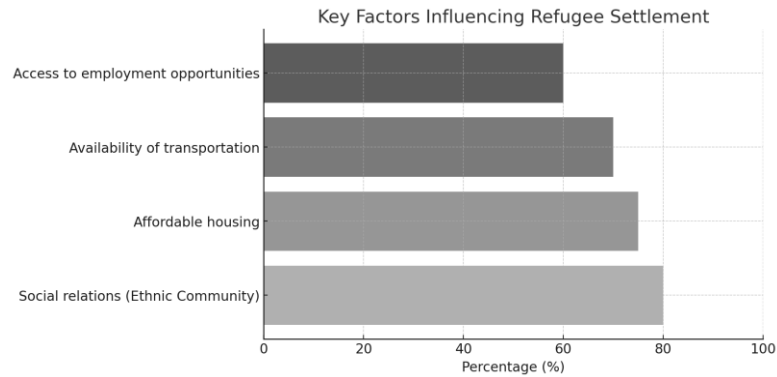
The survey participants were primarily aged 25-45 years old (64.28%), with a majority being male (59%). Most had a secondary education (31.4%) or a bachelor's degree (20%). The largest groups resided in Aldubbat (20%) and Alhussain (18.58%). A significant portion (60%) had lived in other cities before Mafrq, and 62.85% had stayed in Zaatari refugee camp. Additionally, 87.15% had changed housing locations in Mafrq. Most resettled in Jordan between 2012-2013. Employment was diverse, with 27.14% volunteering in NGOs, while others worked in trade, construction, and agriculture.

For semi-structured interview participants, 89.45% were aged 25-55 years old, with nearly equal gender representation (52.63% male, 47.36% female). Education levels varied, with 36.84% having primary education and 31.57% holding a bachelor's degree. The highest number lived in Aldubbat (31.57%). Employment was mainly in NGOs (37%), community organizations (26.31%), and retail or agriculture (10.52%).

To better understand the relationship between residence and employment location, Figure 1 maps the locations of interview participants. This spatial analysis helped identify transit modes used by refugees and how their residential locations influenced employment accessibility.



**Figure 1: Jordan- Al Mafrq Neighbourhoods and Location of residence of interview participants**



**Figure 2: Factors that influence where refugees in Mafraq want to reside (Survey data)**

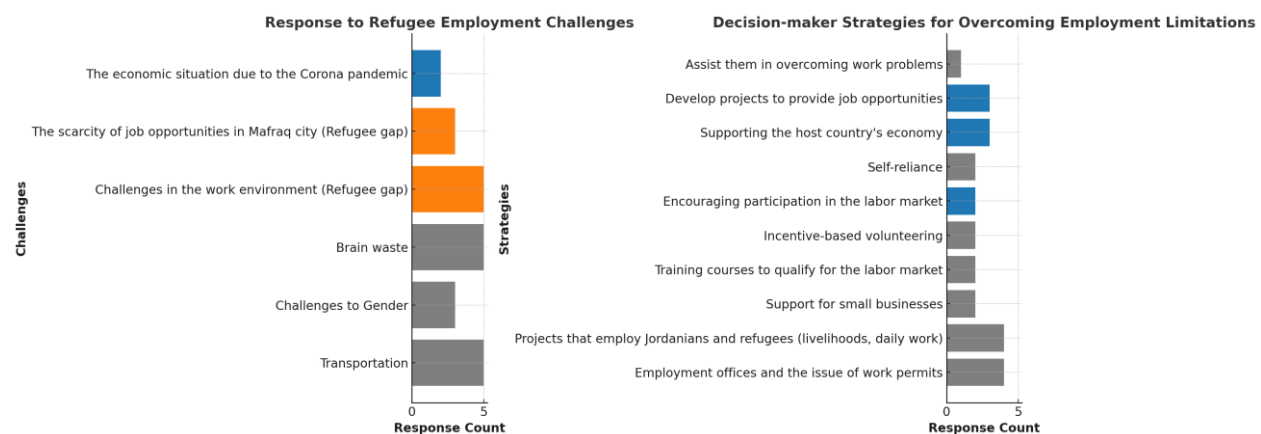
## Results

### *Community Support*

Syrian refugees in Mafraq live across all neighborhoods without restrictions, as the Jordanian government does not designate specific areas for refugee housing. Refugees reported no discrimination or segregation, allowing them the freedom to choose their residence. Social relations significantly influence housing choices, with 73% of survey participants highlighting strong ties to the local community due to shared customs and traditions. Many refugees come from Syrian border towns, and some have Jordanian relatives. Decision-makers emphasized the unique ethnic and family connections between Syrians and Jordanians, fostering positive relationships. Mafraq's hospitality and integration of refugees were highlighted by an NGO official, noting its distinction as the third-largest host city for refugees globally.

Municipal services, employment opportunities, and NGO support are provided equitably, promoting social cohesion and mutual acceptance. Refugees choose neighborhoods near family and friends for moral and psychological support, financial assistance, and practical benefits like employment and transportation. Social ties are crucial, with 11 interviewees citing them as key to securing work. Most participants work in services, agriculture, or construction, with flexible locations and hours. Those working outside Mafraq often live and commute with their families, relying on shared vehicles. Similarly, NGO workers share transport with coworkers and neighbors, addressing mobility challenges collectively.

Gender plays a role in transportation and job access, as Syrian women often use shared cars and rely on social connections with other women, including Jordanian women with vehicles, for support in overcoming transportation barriers to employment. These connections highlight strong community support systems.



**Figure 3: Decision-maker Strategies for Overcoming Employment Limitations (Interview data)**

### ***Response to Refugee Employment Challenges***

Decision-makers perceptions of employment challenges: Decision-makers identified several challenges Syrian refugees face in finding employment. Refugees work in sectors permitted by Jordanian labor law or engage in incentive-based volunteering. Eleven interviewees highlighted the economic difficulties caused by the Corona pandemic, which led to a shortage of jobs and the closure of industries. Mafraq suffers from a significant lack of job opportunities, leading to intense competition, as noted by 86% of decision-makers.

Brain waste is a major issue, with 57% of NGO decision-makers reporting that refugees are unable to work within their skill levels due to sectoral restrictions and a mismatch between qualifications and job requirements. Refugees often need additional training to bridge this gap.

Workplace challenges include a lack of clear labor legislation, leaving refugees without social security or protection from exploitation, such as low wages and long hours. Many refugees, including young people, labor on farms under vulnerable conditions.

Syrian women face unique challenges, as early marriage and family responsibilities limit their ability to work outside the home. They often seek small home-based projects like producing dairy, selling clothes, or sewing.

Transportation is another significant barrier, cited by 57% of decision-makers. The distance between homes and workplaces, combined with limited access to transportation, prevents refugees from working, impacting their self-sufficiency and integration into the Jordanian community.

While refugees focus on infrastructure and regulatory barriers, decision-makers concentrate on broader planning and economic issues. The Land Transport Regulatory Authority plays no role in addressing employment barriers for refugees, as illustrated in Figure 3.

Decision-maker Strategies for the overcoming employment limitation: Governmental institutions and NGOs have implemented strategies to address employment challenges faced by Syrian refugees in Mafraq. Their goal is to make refugees more productive and self-sufficient by

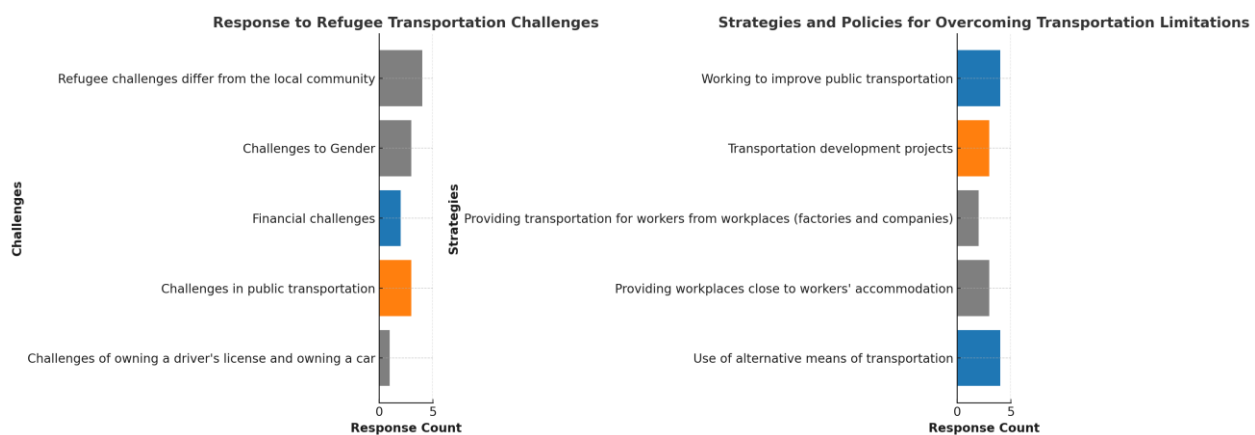
providing diverse job opportunities. According to 86% of decision-makers, various projects have been launched, including employment offices and work permits issued through collaborations with UNHCR and the Ministry of Jordan Labor. These offices help refugees and Jordanians aged 18–40 find jobs in manufacturing, agriculture, and construction.

Mafrqa municipality, in cooperation with the German Agency for International Cooperation (GIZ), offers waste collection jobs every three months, aiming to benefit as many refugees as possible. Livelihood programs funded by NGOs also provide jobs and support small businesses. Forty-three percent of NGO decision-makers reported helping refugees establish home-based projects like food production, sewing, and kitchen projects.

Innovative initiatives include the 2019 social innovation incubator, which financed creative ideas for Syrian and Jordanian citizens. Examples include waste collection vehicles and theft detection devices, with 60% of projects targeting Syrians. NGOs and government institutions also offer training in sewing, housekeeping, agriculture, and technology to prepare refugees for the job market. Fifty-seven percent of decision-makers emphasized these training programs' importance.

Efforts also include job fairs and outreach to companies to raise awareness about refugees seeking work. NGOs address employment issues by monitoring work contracts, handling complaints, and providing legal support through organizations like the Norwegian Council. These efforts ensure refugees' rights are protected, with follow-ups until issues are resolved.

Despite these strategies, 57% of decision-makers acknowledged no policy ensures equal pay or broader job opportunities for refugees. The emphasis remains on encouraging participation in the labor market to foster self-sufficiency and economic contribution, but gaps in equitable access and opportunities persist.



**Figure 4: Decision-maker Strategies for Overcoming Transportation Limitations (Interview data)**

### *Response to Refugee Transportation Challenges*

Decision-Makers' Perceptions of Transportation Challenges: Decision-makers from governmental institutions, NGOs, and the Transportation Regulatory Commission highlighted key



transportation challenges for Syrian refugees in Mafraq. The primary issue is the lack of financial ability to afford public transit, particularly taxis, leading refugees to rely on bicycles and walking.

In addition to transportation challenges, the development of greenways poses sustainability issues in urban planning for both refugees and host communities. Limited budgets and lack of infrastructure for non-motorized transport hinder the creation of these essential paths. Without greenways, refugees continue to rely on bicycles and walking, which can be unsafe and inefficient. Creating greenways would not only improve mobility and safety but also promote environmental sustainability by reducing car dependency and enhancing public health. Addressing these challenges is crucial for fostering inclusive, sustainable cities.

Seventy-one percent of decision-makers noted inadequate public transportation in some districts, with issues such as delays and limited availability. The Land Transport Regulatory Commission strives to provide equal access to public transit for all, including refugees, and has introduced around twelve buses connecting Mafraq to refugee camps. However, the influx of refugees has strained the system, and buses often operate based on seat availability rather than schedules.

Only 14% of NGO decision-makers mentioned challenges in obtaining driver's licenses and owning cars, as refugees face restrictions not applicable to Jordanians. While Jordanian citizens can access bank loans for car purchases, refugees' instability limits these opportunities. Most decision-makers view these policies as unchangeable due to government regulations.

Despite these obstacles, 71% of decision-makers reported that transportation and job challenges are similar for refugees and the local community, with financial constraints being the main barrier. Refugees often resort to bicycles and walking to manage these challenges.

Decision-Maker Strategies for Overcoming Transportation Limitations: Refugees rely on biking, walking, and carpooling to address transportation challenges. However, authorities have not urged municipalities or the Transport Regulatory Commission to develop streets or paths for these purposes, despite increased demand. Municipalities lack plans for such projects due to limited budgets, which are allocated to maintaining streets and managing urban expansion caused by rapid population growth linked to the presence of Syrian refugees.

Moreover, the active participation of refugees in planning processes is essential for creating fair, accessible, and inclusive urban spaces that benefit host and displaced communities, including greenways and transportation infrastructure. Such efforts help bridge the divide between marginalized groups and the broader urban population, leading to more sustainable, just, and resilient cities.

Greenways and sustainable transportation are essential for creating equitable urban spaces for host and displaced communities. They provide safe walking, cycling, and recreation routes, support refugees' well-being, and improve access to jobs and services. By integrating these into urban planning, cities can promote inclusion, reduce inequalities, and build long-term resilience.

Additionally, 57% of NGO decision-makers provide transportation for workers at factories and companies to support employment and self-sufficiency. Service providers are addressing public transportation issues in Mafraq through an urban development plan that integrates individual operators into companies, streamlining operations and improving communication with the

Transport Regulatory Commission. This transition aims to enhance service quality and organize the sector.

### ***Refugees in Decision-Making (The Visible and The Invisible)***

Fifty-seven percent of municipal decision-makers stated that proposed projects, whether services or investments, involve needs guide meetings with committees representing Syrian and Jordanian communities, including both sexes and individuals with special needs. These meetings allow participants to propose projects, share challenges, and document requirements, which are reported to the Municipal Council through the local development agency and approved by the Ministry.

NGOs aim to include refugees in discussions about their needs and services, with community committees comprising Syrian refugees of all categories. These committees help bridge the gap between refugees and decision-makers, ensuring better understanding of refugee aspirations. Despite this involvement, interviews revealed no discussions or projects related to transportation or employment access during guide meetings.

NGO participants noted their role in relaying community needs to decision-makers, including securing free work permits through the Office of the United Nations High Commissioner for Human Rights. However, survey respondents reported not participating in decision-making or community committees, with only 31% having attended an NGO committee to address challenges. While refugees appreciated strategies to improve employment opportunities, they expressed dissatisfaction with the lack of effective strategies to address transportation and employment access issues.

## **Discussion and Conclusion**

### ***To Meet Their Transportation Needs, Refugees Use Community-Based Resources***

In the findings, I discussed the significance of social links in the Syrian refugees' decision to live in Mafrq and the neighborhoods there, as well as how Jordan and Mafrq provide a unique example of the ties between Syrian and Jordanian communities on an ethnic and familial level. The decision-maker also highlighted the strong connection between the Jordanian and Syrian communities. Furthermore, because their current neighborhood is close to their families, friends, and acquaintances, they decided to live there. This is consistent with what Bloomberg has discussed " ethnic community support such as family and social networks and strong kinship between refugees are significant factors for refugees' transportation and access to employment (Blumenberg, 2009). Indeed, the literature has highlighted that immigrants and refugees are more likely to live and work in communities where they have relatives and acquaintances (Blumenberg, 2009).

Studies have found that many migrants find employment through friends and family, in addition to the findings that social ties among refugees helped them access transportation and job opportunities, social relationships are necessary to reach out to various community organizations and provide employment information. Moreover, A growing number of transportation experts are

looking into the social factors that influence transportation choices. Social networks appear to be the foundation for a variety of social processes, including access to opportunities, resource sharing, and social influence (Pike & Lubell, 2016).

Refugees use social networks and community resources to address their transportation needs. The results showed that Syrian refugees are creating networks for information sharing and depending on them to access transportation and employment opportunities. The idea that refugees may overcome transportation challenges by utilizing social networks and relying on neighbors in their own neighborhoods was the most significant explanation to come out of the results.

### ***The Need for Decision-Makers to Address Syrian Refugees' Challenges in Mafraq***

Along with the inadequate representation of Syrian refugees in decision-making processes, decision-makers in governmental and NGOs have ignorance and incomplete perceptions of the transportation challenges faced by Syrian refugees and the difference between those challenges and those faced by the Jordanian local community.

Despite this study's findings and the extensive literature on the difficulties faced by refugees, it appears that discussions of the difficulties faced by refugees in the city of Mafraq in finding employment opportunities are disconnected from reality and the work being done in this area by policymakers in governmental institutions and NGOs.

In addition, decision-makers reports regarding equal access to transportation for Jordanian residents and Syrian refugees' conflict with the testimonies of Syrian refugees, who also speak of their struggles with money, access to public transportation in Mafraq, and the legal requirements for car ownership. Therefore, to resist policies and programs that neglect the difficulties faced by Syrian refugees in host communities, decision-makers, and urban planners must understand the significance of adopting an equality agenda for refugee service delivery.

### **References**

- Ager, A., & Strang, A. (2008). Understanding integration: A conceptual framework. *Journal of Refugee Studies*, 21(2), 166-191.
- Alhajahmad, S., Barker, K., Lockhart, D., & Shore, J. (2018). Syrian refugee employment trends in Jordan and future perspectives. *West Asia-North Africa Institute WANA Institute, Jordan*. [http://wanainstitute.org/sites/default/files/publications/Publication\\_SyrianRefugeeEmploymentTrendsJordan\\_English.pdf](http://wanainstitute.org/sites/default/files/publications/Publication_SyrianRefugeeEmploymentTrendsJordan_English.pdf).
- Alhusban, A. A., Alhusban, S. A., & Al-Betawi, Y. N. (2019). Assessing the impact of urban Syrian refugees on the urban fabric of Al Mafraq city architecturally and socially. *International Journal of Disaster Resilience in the Built Environment*.
- Bastiaanssen, J., Johnson, D., & Lucas, K. (2020). Does transport help people to gain employment? A systematic review and meta-analysis of the empirical evidence. *Transport Reviews*, 1-22.

- Blumenberg, E. (2009). Moving in and moving around: immigrants, travel behavior, and implications for transport policy. *Transportation Letters*, 1(2), 169-180.
- Bose, P. (2013). *Refugees and transportation in Vermont: travel behaviour and critical questions based on gender, age and transportation hierarchies*.
- Bose, P. S. (2014). Refugees in Vermont: mobility and acculturation in a new immigrant destination. *Journal of Transport Geography*, 36, 151-159.
- Cheung, S. Y., & Phillimore, J. (2014). Refugees, social capital, and labour market integration in the UK. *Sociology*, 48(3), 518-536.
- DOS. (2020). *Estimated population of 2020 and some of selected data*.
- Fumagalli, L. A. W., Rezende, D. A., & Guimarães, T. A. J. J. o. U. M. (2021). Challenges for public transportation: Consequences and possible alternatives for the Covid-19 pandemic through strategic digital city application. *10*(2), 97-109.
- Galland, S., Knapen, L., Gaud, N., Janssens, D., Lamotte, O., Koukam, A., & Wets, G. J. T. R. P. C. E. T. (2014). Multi-agent simulation of individual mobility behavior in carpooling. *45*, 83-98.
- Heatwole, K. J. 2020. Transportation disadvantage among refugees in the Research Triangle. Master's thesis. University of North Carolina, Chapel Hill.
- Kattaa, M. (2015). Social protection and employment for Syrian refugees in Jordan. Conference on Networks for Regulating Decent Work, Geneva. Retrieved from [http://www.rdw2015.org/uploads/submission/full\\_paper/20/Social\\_protection\\_and\\_employment\\_the\\_case\\_of\\_Syrian\\_refugees\\_in\\_Jordan.pdf](http://www.rdw2015.org/uploads/submission/full_paper/20/Social_protection_and_employment_the_case_of_Syrian_refugees_in_Jordan.pdf),
- Liu, C. Y., & Painter, G. (2012). Travel behavior among Latino immigrants: The role of ethnic concentration and ethnic employment. *Journal of Planning Education and Research*, 32(1), 62-80.
- Mencutek, Z. S., & Nashwan, A. J. (2020). Perceptions About the Labor Market Integration of Refugees: Evidences from Syrian Refugees in Jordan. *Journal of International Migration and Integration*, 1-19.
- Mercy. (2012). Analysis of host community-refugee tensions in Mafraq, Jordan. *Mercy*
- Morken, A., & Skop, E. (2017). Connecting refugees in a nontraditional resettlement destination: The role of social institutions. *Papers in Applied Geography*, 3(3-4), 322-338.
- Pike, S., & Lubell, M. (2016). Geography and social networks in transportation mode choice. *Journal of transport geography*, 57, 184-193.
- Rjoub, A. (2019). The Types and Locations of Informal Housing in Al-Mafraq City of Jordan.
- Tiltne, Å. A., Zhang, H., & Pedersen, J. (2019). The living conditions of Syrian refugees in

Jordan. *Oslo: Fafo.*

UNHCR. (2021). *Total Persons of Concern by Country of Asylum.*

UNHCR. (2024). *Registered Refugees by Country of Origin.*