

## **Educational Profile of Refugee Scientists Trapped in Waiting Asylum Demanding Procedures in Greece**

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**Abstract.** This study explores the educational level of migrants arriving in Europe since 2015 and makes suggestions to improve their integration into the labor market. The research methodology is based on qualitative (ethnographic research) and quantitative analysis using questionnaires distributed in four languages to the refugee scientists living in Moria camp, Lesvos, Greece. Only 53% of migrants hold their certificates and half of them speak two languages. The priority topics for further education are Humanities, Science, Economics and Computer Sciences. Key aspects were considered to help the refugee's social integration such as information exchange, intercultural education and to stop gender inequalities.

**Keywords:** *refugee scientists, Moria camp, refugee camp, Lesvos, training, skills, educational profile*

### **Introduction**

In the last few years, Europe accepts the entry of thousands of migrants (refugees and asylum seekers) in its geographical territories, never experienced before (the number of asylum requests in 2016 was double than that of 1992, after Yugoslavian war). This migrants pathway has followed two main routes – Central Mediterranean (towards Italy) and Eastern Mediterranean (towards Greece) – with almost 2 million arrivals in four years (2014-2018). During this period, the Eastern Mediterranean route registered about 1.2 million arrivals, with a peak of 885 thousand in 2015. The high numbers of immigrants from the Eastern Mediterranean route started to decrease in March 2016, following the European Union (EU) statement with Turkey and the implementation of the action plan to secure the Turkish sea borders and accept the return of irregular migrants from EU. As a result, the number of arrivals on the Greek islands decreased to 182 thousand in 2016 and to 42 thousand in 2017, while it reached 56 thousand in 2018. Considering arrivals by sea, Lesvos was the island which registered most arrivals (58% of total sea

arrivals), followed by Samos (FRONTEX 2018). During the first months of 2018, the immigrants on the Eastern Mediterranean route consisted predominantly of Syrians (41%), followed by Iraqis (23%) and Afghans (11%) (European Commission 2018).

Following the mass refugee influx in 2015, Greece as one of the main reception country had to find a coping mechanism to respond to the new needs raised immediately. Six Reception and Identification Centers (RICs) are created on the islands of Lesbos, Chios, Samos, Leros and Kos, and deal with arrivals from the sea. The one mainland northeastern the Fylakio city handles the overland arrivals. These “hotspots”, as they are commonly known, are the official sites where people can request asylum once they arrive in the country (Hermans et al. 2017). The overcrowded conditions in the hotspots and the strong reaction of the local societies shortly resulted to the opening and operation of 30 temporary refugee camps (temporary accommodation centers) side to side across the country, hosting more than 109,000 refugees and migrants (Stamatoukou 2020).

The chronicity of migrant’s influx boosts the actions for education social integration, entertainment and culture of the migrants. The European Commission published a report called “Working together for the local integration of migrants”, that identifies the main challenges to the integration of migrants and sets out concrete policy recommendations in response OECD (OECD 2018). This report gathers the best practices examples from large European cities, including Amsterdam, Athens, Berlin, Paris and Rome, and gives recommendations to improve migrant’s integration in the labour market. According to the report it is important to (a) monitor the refugees integration process using surveys (such as those carried out in the city of Amsterdam) or via statistical data (such as those collected by the Sweden statistics agency) and (b) better align refugees skills and qualifications with local job offers (OECD 2018).

Today’s European labour market is challenged by changes in work complexities and processes, as well as by skill demands due to several factors, such as demographic changes (including migration), technological advancement, globalization, and international competition (Stier 2015; Cedefop 2016; Hoftijzer and Gortazar 2018). A shift from manual to knowledge-based work, as well as a growth of high-skilled occupations that usually demand academic education, are observed. The general trend is that demand for skills that compete with machines (i.e. “manual” skills, “perception” skills) is reduced, whereas requirement for skills that complement machines or for skills computers cannot yet perform (i.e.

“interpersonal” skills, “analytical” skills, “organizational” skills) is increased (MacCrory et al. 2014; Hoftijzer and Gortazar 2018).

Studies examines the role of the Emergency Support to Integration and Accommodation (ESTIA) programme, as the policy initiative for the provision of (a) housing and (b) social integration for asylum seekers over the last few years in Greece (Kourachanis 2018). The study showed that ESTIA failed in the second part of its role, since the focus was restricted to enroll refugees to state services to acquire visa or asylum and almost no work has been done towards the social integration and help refugees to acquire new skills and live independently. It is missing a strategic plan for refugee social integration and the necessary links and networks.

More than 7% of the refugee incomers into Greece, graduates from tertiary education (called in the current study “refugee scientists”), wait for months or years in hotspots for demanding asylum procedures without any essential help to align their skills with the local society and local labour market. Intermittent initiatives in the camps provide job consulting and training and limited business financing options for refugees appear without any formal evaluation of their effectiveness. Additionally, some initiatives for e-learning material production arise in diverse geographical areas that rarely interfere and collaborate with each other and their continuation and sustainability is restricted to the project duration (Emma Wagner 2017). However, these initiatives affect a very small number of beneficiaries without joining a general integration strategic plan. One of the major disadvantage of the abovementioned initiatives it the ignorance of the existing skills, knowledge and competence acquired (including formal qualifications) of their beneficiaries in order to construct life-long learning programs and “tailor made seminars” to enhance the learning outcomes.

In this framework, the objectives of the current study is investigate a) the educational profiles of the asylum seekers and refugee scientists (refugees with educational qualifications of bachelor’s degree graduate diploma or higher level) arriving in Europe via the Eastern Mediterranean Route and b) their perception about their competency to join the labour market. Competency according the Unesco is “the proven or demonstrated individual capacity to use know-how, skills, qualifications or knowledge to meet usual and changing occupation situations and requirements” (Unesco, n.d.). The refugee scientists living in Moria camp (Lesvos, Greece) constitute the target population for fulfilling the objectives of our research.

## **Data and methods**

### ***Camp Description:***

Refugee camps are organized as “temporary space[s] in which refugees may receive humanitarian relief and protection until a durable solution can be found to their situation” (Ramadan 2013). The selection of the Moria camp as a RIC and refugee camp and its development has generally been made by top-down decisions in an abandoned military field, in a place almost invisible by the city of Mytilene, but in a close proximity to the roads and the port. The Moria camp was initially used as a temporary solution to serve some hundreds of people and has thereafter been developed, section by section, into a settlement with long-term focus. Although its capacity does not exceed 2,500 people, the number of refugees varies according the season from 5,000-10,000 and surpassed 20,000 in January 2020 (The TOC Team 2020). Most of these people live in squalor settlements outside the fences of the camp and it is questionable whether they can they can benefit from existing education and medical services that are provided inside the camp. The mass media often criticizes the difficult living conditions in Moria camp (Guardian 2020; Godin 2020).

### ***Surveys:***

The survey was conducted from April to June 2018 in the Aegean island of Lesbos. Among the incomers around 7% have a university/college degree (personal communication with the Moria identification center director). Our survey focused on those refugees with some educational qualifications (~420) at the time of survey and not on the general population of refugees (~6,000) residing in the Moria camp. RAOSOFT sample size calculator (webpage) implemented for the definition of the representative sample. Camp’s population is approximately 6,000 in the examined period (Tzoraki 2019) with 420 (~7%) of them with some educational qualifications, so the requisite sample size was 105 with 90% confidence level, 6.93% margin error and 15% response distribution.

The research methodology is based on a sample survey, enriched with daily conversations with refugees in lieu of an ethnographic approach. Figure 1 shows the location of Moria camp and a snapshot of the interviews. This approach, particularly interesting for the study of a culture or a specific community, is based on observing what happens, listening to what is said, asking questions through formal and

informal interviews, collecting documents and data and all those products that can provide information about usual behavior and culture. In this case, project constraints do not allow researchers to spend so much time with refugees observing their behavior, also considering that they are already out of their original social context. Considering that the target population is consisted of refugees and asylum seekers, researchers of the project conducted a sample survey in order to collect the largest possible amount of information. The sample size was 100 individuals (5.13% margin of error) selected in order to reflect as much as possible the characteristics of the population of asylum seekers and refugees. An important barrier at the beginning of our research was to find and contact the refugee scientists. Given that the reception and identification services do not provide public records and information about refugee and asylum seekers, we used our personal networks, social media, and snowballing techniques to identify and reach informants.

A factor that contributed towards the completion of our survey was the activity of community leaders. The community leaders are settlement supervisors, decision – makers and represent their expatriates. The community meetings (which take place every Friday in Moria camp) are accessible for information dissemination and increase awareness about the current research. Not all community leaders were equally eager to communicate the information to their ethnic group. Applicants from Cameroon, for example, are over-represented, relative to their presence in the island of Lesvos, because of the eagerness of their community leader to spread the information about the current study and to get us in contact with Cameroonese people. On the contrary, applicants from Syria are under-represented, owing, to some extent, to the reticence of their community leader to cooperate for the objectives of the current research. In any case, the sample is a non-probability sample, while it is sufficient for qualitative research purposes.

The purpose of the questionnaire (distributed in four (4) languages: English, French, Farsi, Arabic) (Supporting Information 1) was to reflect the educational level, qualifications and professional experience of the respondents. The questionnaire was accompanied by a consent form in order to ensure that respondents were informed for the project goals and were willing to participate voluntarily. This was a very important part of the research since the questionnaire contained personal information such as: forename, family name, phone number, address and other personal data. The questionnaire had twelve questions concerning the educational qualifications that refugees obtained in their country of origin or before they came

to Lesbos, while it included questions concerning their language skills. It also contained a section intended for those that had attended a university course, gathering information related to the name of university, title of studies, faculty etc. Finally, questions concerning their intention to continue their studies and if so in which academic field are included.

**Figure 1. Location of the study site and snapshot of the interviews.**



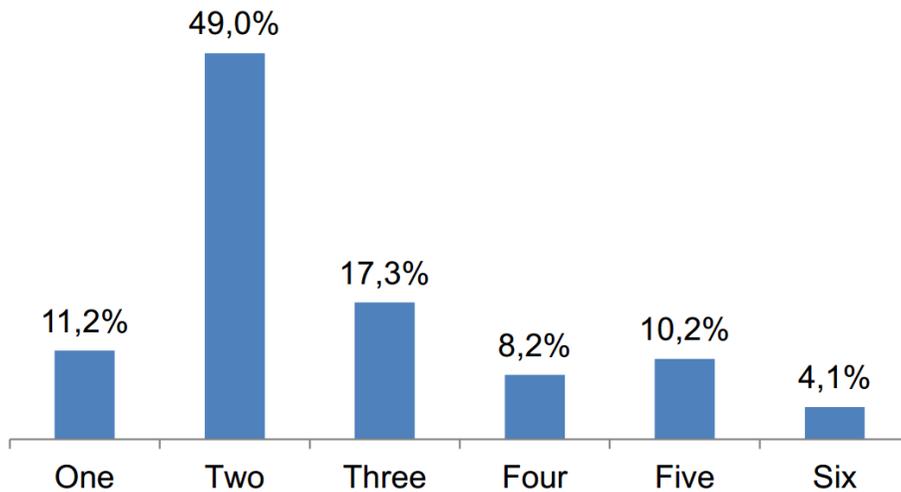
## Results

In this section, the results of the questionnaire survey conducted in the refugee center of Moria are presented and analyzed. The first country of origin is Afghanistan (27 respondents), followed by Cameroon (23), Syria (11) and Iran (9) (Table 1). Generally, 56.4% of the participants come from Asian and Middle Eastern Countries, while the 43.6% from sub-Saharan Africa (mainly Western Africa). At this point, it should be noted that four refugees did not answer the question regarding their country of origin, and, therefore, the aforementioned percentages (valid percent) correspond to a sample of 96 individuals.

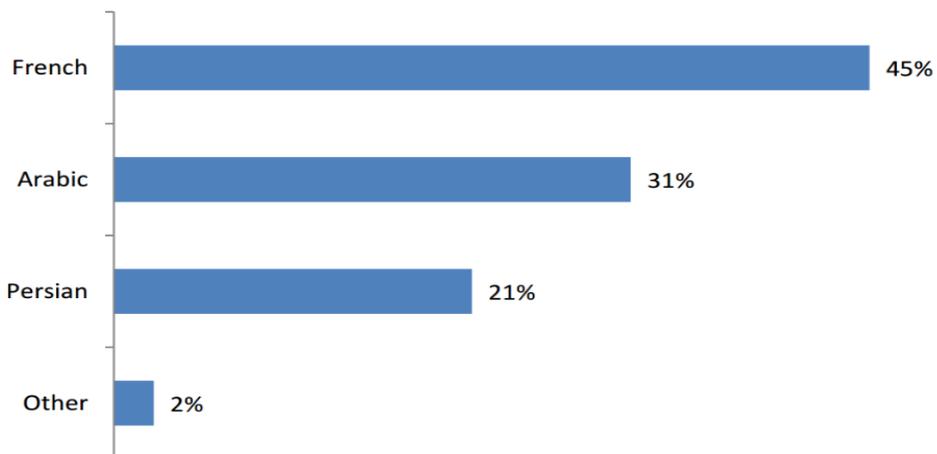
The vast majority of the participants are men (90.4%). Table 3 shows the participants' composition by age (using 1/10/2018 as a reference date). Taking into consideration those who participated in the survey (49 individuals), most of them (17 refugees or 34.7%) are between 25 and 29 years old, followed by those (14

refugees or 28.6%) being from 30 to 34 years old. The results concerning the language skills of the participants are presented in Figures 2 and 3. The large majority of the sample speak more than one language (89%), while half of the respondents speak two languages (49%) and almost 17% of them know at least three languages. Almost the 90% of the respondents have at least a basic knowledge of English, but only a 56% speak excellent English. Finally, among non-English-speaking people, the most common language is French (45%), followed by Arabic (31%) and Persian (Farsi) (21%) (Figure 3).

**Figure 2: Number of spoken languages by each participant (n=100)**



**Figure 3: Main languages spoken by non-English-speaking participants (n=100)**



In the following tables, key information with regard to the educational level, training experiences and expectations of the refugees about re-integration in the academia is provided. Table 3 illustrates the educational level of the participants (i.e. the highest level of education completed), who are actually 99 in total (there is one missing value). As it is obvious, one third of the participants have completed tertiary level studies, 30 participants (30.3%) have completed secondary education only, while 28 participants (28.3%) have received further education (i.e. college). According to the results, it is concluded that, in general, the 67.7% of the participants have continued their studies after the secondary school. Considering that during the escaping process from their country, it is very difficult for them to carry the original documents, only 53% of the interviewed refugees hold their certifications (documents) with them. Table 4 shows the percentage of the participants willing to continue (and complete) their training path. Again, not all the interviewed refugees responded, so the sample was reduced to 93 individuals (there are 7 missing values). According to the results, it is apparent that the large majority of the respondents expressed the will to continue their training or academic path (88%).

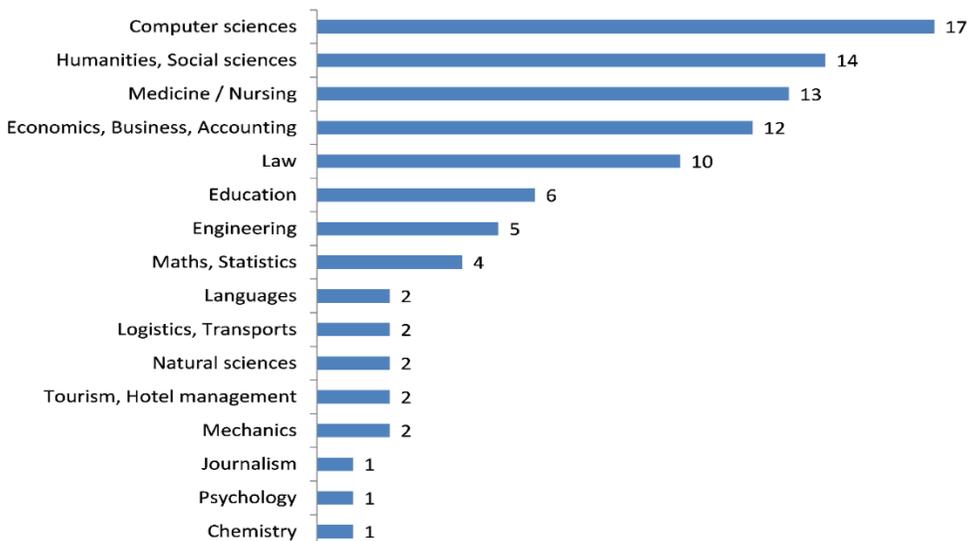
As for the subject of study, as illustrated in Table 5, the first topic is “Humanities” (30.5%), followed by the category “Science” (19.5%). “Economics” and “Computer Sciences” were voted by the same percentage of participants (17.1%), while “Health Sciences” was voted by the fewest respondents (15.9%). Once again, a considerable number of refugees (18) did not participated, thus resulting to a sample of 82 individuals. Finally, with regard to the question “In which language would you like to study?”, the vast majority of the participants responded that they would like to study in English (56.4%), followed by those who desire to study in French (16.0%). This time the sample was reduced to 94 individuals due to 6 missing values (Table 6).

Table 7 tries to investigate if there is any relationship between country of origin (ethnicity) and the discipline of studies. The category “Science” includes all kinds of Engineering (civil engineers, petroleum and chemical engineers), Math/Statistics and Natural Sciences. The category “Humanities” includes Education, Law, Social sciences and Art. The category “Economics” includes Business, Economics, Logistics and transport, Tourism. The category “Health Sciences” includes Medicine and Nursing. Only four countries of origin are shown in the table, and these are the countries that most of the respondents in our sample come from. The category “Other” includes people coming from Iraq, Pakistan and from Sub-

Saharan Africa. By classifying the “country of origin” in two categories only, namely “Middle-East” and “Sub-Saharan Africa”, then the greater preference of Africans is towards “Science” in contrast with migrants coming from Middle East, which who show a distinct inclination towards “Humanities”.

However, there is no statistically significant relationship between the ethnicity of the respondent and the faculty she/he would like to study. There are differences between the different ethnicities but in general almost every ethnic group shows a tendency towards “Humanities”, which include law studies, educational studies, social sciences and Art. People from Cameroon constitute an exception as they prefer to study “Economics” (Business, Economics, Logistics and Transport, Tourism) rather than Humanities. For all ethnic groups “Science” comes second in preference after “Humanities”, while “Economics” and “Computer sciences” are their third preference. It is noteworthy however that people from sub-Saharan Africa show a greater preference towards science compared to people from the Middle East (a relationship that is not shown in Table 7). As for the topic of further education, a broad variety of faculties was registered. This choice allowed a multiple answer, so many participants selected more than one option. In absolute terms, the first topic is Humanities, followed by Sciences, Economics and Computer Sciences (Figure 4).

**Figure 4: Preferences for education pathways (n=100)**



**Table 1: Participants' composition by Country of origin (all Countries)**

Value label	Frequency
Afghanistan	27
Cameroon	23
Syria	11
Iran	9
D.R.Congo	5
Irak	4
Eritrea	3
Somalia	3
BurkinaFaso	2
Pakistan	2
Togo	2
Guinea (Conakry)	1
Mali	1
Rwanda	1
Uganda	1
Yemen	1
No answer	4
<b>Total</b>	<b>100</b>

**Table 2: Participants' composition by gender**

Value label	Frequency	Valid Percent (%)
Male	85	90.4
Female	9	9.6
No answer	6	
<b>Total</b>	<b>100</b>	<b>100,0</b>

**Table 3: Participants' composition by age (on 1/10/2018)**

Age-group	Frequency	Cumulative Percent (%)
18-24	28	28%
25-29	40	68%
30-39	28	96%
40-49	2	98%

Age-group	Frequency	Cumulative Percent (%)
50+	2	100%
Total	100	

**Table 4: Participants' education level**

Value label	Frequency	Valid Percent (%)	Cumulative percent (on valid answers) (%)
None	2	2.0	2.0
Secondary	30	30.3	32.3
Furthereducation (college)	28	28.3	60.6
University (Graduate)	33	33.3	93.9
University (Post-graduate)	6	6.1	100.0
No answer	1	missing	
<b>Total</b>	<b>100</b>	<b>100.0</b>	

**Table 5: Participants' preferences regarding the subject of study**

Section	Frequency	Valid percent (%)
Science	16	19.5
Economics	14	17.1
Humanities	25	30.5
Computer Sciences	14	17.1
Health Sciences	13	15.9
Noanswer	18	
Total	100	100.0

**Table 6: In which language participants like to study**

Language	Frequency	Valid percent (%)
English	53	56.4
French	15	16.0
English&Farsi	7	7.4
English&French	6	6.4
Arabic	5	5.3
Farsi, Urdu	3	3.2
English&Arabic	2	2.1
English& Greek	2	2.1

Language	Frequency	Valid percent (%)
Greek	1	1.1
No answer	6	
Total	100	100.0

**Table 7: Relationship between ethnicity and preference of studies discipline**

Faculty to study	Country of origin					Total
	Afghanistan	Cameroon	Syria	Iran	Other	
Science	3 12.5%	5 23.8%	2 25.0%	2 25.0%	4 19.1%	16 19.5%
Economics	4 16.7%	6 28.6%	1 12.5%	0 0.0%	3 14.3%	14 17.1%
Humanities	9 37.5%	5 23.8%	2 25.0%	3 37.5%	6 28.6%	25 30.5%
Computer Sciences	4 16.7%	4 19.1%	1 12.5%	2 25.0%	3 14.3%	14 17.1%
Health Sciences	4 16.7%	1 4.8%	2 25.0%	1 12.5%	5 23.8%	13 15.9%
Total	24 100%	21 100%	8 100%	8 100%	21 100%	82 100%

Source: Sample survey conducted from April to June 2018 in the island of Lesbos.

**Table 8: Chi-square test for independence**

Statistic	Value	df	p-value (two-sided)
Pearson's chi square	8.66	16	0.927
Valid N	82		

Cramer' V=0.16

### The refugees' scientists perception about their qualification competency to re-integrate into the labor market

One of the biggest obstacles scientists think to overcome concerning their integration into the labour market is the limited knowledge of the host language (Eggenhofer-Rehart et al. 2018). Excellent knowledge of the language in the destination country makes it easy to find work and especially in professions that have to do with direct contact with people, by providing services such as legal advisers

(Stone 2020). Even though in more specialized technical professions, such as technician in a chemical laboratory, the insufficient knowledge of the Greek language appears as an obstacle. Scientists have accumulated a lot of working experience from their countries and believe that they can transfer this experience in the host country if they have this opportunity. The main obstacle they see is the difficulty with the local language, because they can't speak fluently, as in the case of Tamim from Egypt:

“I have worked as Chemist in Gold mining and in water analysis laboratory. In Greece, I could do the same work that I did in my country if there was opportunity too. The skills that I need more to be fluent in Greek language, I have the basics.”

However, the possibility of internships or even short-term contracts is suggested to improve language skills and gain more work experience in the host country. The working experience is considered by respondents to be the best way, because they gain practical knowledge and experience that will help them cope in Europe's highly competitive environment. For example Anita from Ghana mentions:

“I'm 70% fit to work in my host country. What I think I need in addition to the above mentioned skills to fit perfectly in my host country is language skills ( I have taken some Greek lessons already) and internship programs or jobs to help me integrate into the European system of work. To have knowledge of the host countries working/labour system (practical knowledge) in other to be able to joint the competitive labour market.”

Many of the respondents have already worked voluntarily or with a small salary with the NGOs operating in Lesvos or with NGOs in a previous transit country. Influenced by their experience in NGOs, they suggest that it is important to meet the soft skills that are usually considered necessary by NGOs, such as understanding complaints, interacting with people from other cultures, speaking politely, understanding the principles of safeguarding.

Most believe that many of the qualifications required at work are almost the same in all countries, especially those related to project management and data processing. They give the examples of Management, Leadership, Computer Knowledge, Internet package, Engineering programs and language Skills. Some of them are oriented to work in Germany and believe that in order to find a job in Germany, they need the knowledge of the German language, the combination of university credits with internships and a driving license. In contrast others believe that the familiarity with the modern technologies like data management and visualization software and algorithms are important in job finding process. Also some reported that they have studied more conventional studies (agricultural sciences)

and believe that they have to attend a more technical school like the computer and engineering school in order to increase their chance to find a job. This is the case of Abdulai from Ghana:

“I like to be enrolled into computer and engineering school to be able get job and also learn something new.”

Many of the refugees have interrupted their studies and hasn't any credits with them. They think preferable if Masters or PhD degrees is accomplished before reaching the host country and the knowledge of more than one language is high priority. Others recognize not only the linguistic skills but also they assume that is important to know the labour market conditions of the host country. For instance Ebrahim from Afganistan mentions:

“I think the language of the host country and its rules and culture are very important to know.”

Finally, the knowledge attitude of the host country culture and the people behavior but also the existence of supportive networks is assumed to be important to get adapted in the new environment (Eggenhofer-Rehart et al. 2018). The network role in qualification process is recognized by Samer from Syria:

“..Supportive networks not only regarding the job search, but also regarding the education opportunities.”

Finally some of them especially highly skilled health professionals believe that it is impossible to find a similar job in the Greek health sector. They have access only to low qualifications work and Greek institutes prefers to hire Europeans instead of refugees in various highly skilled jobs giving to them more credit and trust to their skills and education.

## **Discussion**

Displaced women are exposed to intersecting factors such as vulnerability to gender-based violence, restricting cultural norms and discrimination (Bjørneseth, Smidt, and Stachowski 2019). The difficult living conditions in Moria camp due to inadequate sanitation and hygiene and severe overcrowding (Hermans et al. 2017) as well as hunger, insecurity and violence (Moreira et al. 2020; Köpping Athanasopoulos 2020) results in the isolation of refugee women in specific sections inside the camp (ie, section C). This isolation brings difficulties to access necessary information and creates obstacles to the effective communication. Also the number

of the adult women in the camp is much less than the men (<30% are women). Therefore, due to the above mentioned reasons it was impossible during the current survey to have access to more scientist women and the majority of the respondents were men.

Almost half of the incomers (47%) in Moria camp do not have any certificates with them to qualify their existing training in their homeland, revealing the high need for alternative recognitions procedures managed by an accredited authority or organisation: the legitimacy of the awarding authority determines the value of a certificate or qualification acquired in this way. Unfortunately, existing national recognition, validation and/or guidance/counselling systems have not been designed to deal with the incomers, neither in terms of number of individuals to be 'processed' nor in term of the particular problems arised by language, cultural background and (in some cases) lack of written, formal documentation (Cedefop 2016). Previous studies show that a combination of a secure residence title with the participation in language/integration classes lead to a higher likelihood of applying for the recognition of degrees (Jacobsen 2019).

In the 1<sup>st</sup> semester of 2018 about 7% of the refugees in Moria camp already had some experience in higher education, a very low ratio in comparison to the 27.8% of males and 23.8% of females of Syrian arrivals in Germany in early 2016 (Streitwieser et al. 2017). However, in the current study 88% of the participants are willing to continue their studies in the tertiary education, either to complete the interrupted studies or to continue by joining a postgraduate program. Therefore, it is necessary to explore the best routes and methodologies to the refugee's entrance into the tertiary education. The initiatives undertaken at local, national and European level to integrate migrants into the training systems are sparse, slow and unevenly distributed between and within countries. However, there has been no systematic sharing of experiences and solutions in this area. This means that developments take place in isolation from one another, potentially causing loss of time and money and preventing synergies to develop.

The majority of the respondents (90%) speak English at least at basic level respondents and most of them speak many languages. It is observed that after migration the good or very good knowledge of a foreign language is increased from 1% to 33% (Brücker, Kosyakova, and Vallizadeh 2020).

The respondents recognize the knowledge of the language and the culture of the hosting country as a prerequisite for the effective integration. Refugees reach

their destination country without any knowledge of the hosting country values of the capital forms (cultural, social and economic) (Iosifides et al. 2007). The ignorance of the new culture and their persistence to use their cultural capital creates severe problems in their integration and personal development. Proactivity is suggested as an important integration process (contact with locals, learn the local language, adaptation of local norms and practices, recognize training opportunities) (Eggenhofer-Rehart et al. 2018).

Some respondents have already participated in various seminars or worked in a voluntary basis in the hosting country and other recognize the need for more advanced skills such as programming and data analysis. Structured seminars represent a crucial point for the whole initiative of social integration, because they are the first concrete approach of beneficiaries with the academic environment after the forced migration from the country of origin. In other words, this is the “business card” of Europe and Greece, with a great expectation by the side of beneficiaries. Special attention should be given to the specific needs of women, in order to allow them full access to education, training and labour market (Tahir 2020). Educated female refugees, although a small minority of the total refugee population, show an inclination towards obtaining new skills through training. They actively participate in the courses and exhibit a strong will for integration in the receiving countries.

## **Conclusions**

The recent refugee movements in the EU have generated the urgent demand of the social integration of refugees with qualifications in various scientific fields. Among the newcomers in Moria camp there is a significant number of scientists with skills and qualifications that could join the labour force of Greece and Europe. The majority of them are willing to improve their qualifications by attending an English curriculum, and to improve their skills with the use of modern electronic tools. This is consistent with the shift in EU labour market from manual to knowledge-based work and high-skilled occupations due to the recent technological developments.

Identifying, documenting, assessing and certifying skills and competences is not exclusively linked to the education and training sector but requires the involvement of public employment services, labour market authorities, employers, guidance and counselling as well as social services. Coordination among stakeholders

at local, regional, national and European level is also required for this to succeed. In addition, it is important to understand how the process of validation can be integrated and interacts with the asylum application.

The structured seminars are the first significant step in the integration of refugee scientists in the incoming countries and their design should cover the strong willingness of the refugee scientists to find their pathway in the labour market. Any course designed for refugees should take into account the different cultural and religious background of the refugees and treated this background with respect. Vice versa, educational programs for refugees should also make clear to the them that they are abide by the laws and morals of the hosting country, the culture of which they have to respect should they want to integrate to the European societies.

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## References

- Bjørneseth, F, M Smidt, and J Stachowski. 2019. “Gender, Parenthood and Feelings of Safety in Greek Refugee Centres.” *Journal of Refugee Studies* 32 (Special\_Issue\_1): 163–79. <https://doi.org/10.1093/jrs/fez039>.
- Brücker, Herbert, Yuliya Kosyakova, and Ehsan Vallizadeh. 2020. “Has There Been a ‘Refugee Crisis’? New Insights on the Recent Refugee Arrivals in Germany and Their Integration Prospects.” *SozW Soziale Welt* 71 (1–2): 24–53. <https://doi.org/10.5771/0038-6073-2020-1-2-24>.
- Cedefop. 2016. “How to Make Visible and Value Skills and Competence of Refugees: Exchanging National Approaches and Experiences.”
- Eggenhofer-Rehart, Petra M., Markus Latzke, Katharina Pernkopf, Dominik Zellhofer, Wolfgang Mayrhofer, and Johannes Steyrer. 2018. “Refugees’ Career Capital Welcome? Afghan and Syrian Refugee Job Seekers in Austria.” *Journal of Vocational Behavior*. <https://doi.org/10.1016/j.jvb.2018.01.004>.
- Emma Wagner. 2017. “REFUGEE EDUCATION: Is Technology the Solution?” [https://static1.squarespace.com/static/583af1fb414fb5b3977b6f89/t/59d6b90a6f4ca3f9b427d2e4/1507244300889/18\\_PromisingPractices\\_TECH+COMPILATION\\_WEB.pdf](https://static1.squarespace.com/static/583af1fb414fb5b3977b6f89/t/59d6b90a6f4ca3f9b427d2e4/1507244300889/18_PromisingPractices_TECH+COMPILATION_WEB.pdf).
- European Commission, COM. 2018. “COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL AND THE COUNCIL Progress Report on the Implementation of the European Agenda on Migration.” [https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/european-agenda-migration/20180516\\_progress-report-european-agenda-migration\\_en.pdf](https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/european-agenda-migration/20180516_progress-report-european-agenda-migration_en.pdf).
- FRONTEX. 2018. “Migratory Routes.” 2018. <https://frontex.europa.eu/along-eu-borders/migratory-routes/eastern-mediterranean-route/>.

- Godin, Melissa. 2020. "UN Calls For 'Emergency Measures' to Improve Conditions in Greek Refugee Camps, Amid Overcrowding and Risk of Disease Outbreaks." *TIME*. 2020.
- Guardian. 2020. "Moria Is a Hell': New Arrivals Describe Life in a Greek Refugee Camp," 2020. <https://www.theguardian.com/global-development/2020/jan/17/moria-is-a-hell-new-arrivals-describe-life-in-a-greek-refugee-camp>.
- Hermans, M P J, J Kooistra, S C Cannegieter, F R Rosendaal, D O Mook-Kanamori, and B Nemeth. 2017. "Healthcare and Disease Burden among Refugees in Long-Stay Refugee Camps at Lesbos, Greece." *European Journal of Epidemiology* 32 (9): 851–54. <https://doi.org/10.1007/s10654-017-0269-4>.
- Hoftijzer, Margo, and Lucas; Gortazar. 2018. "Skills and Europe's Labor Market : How Technological Change and Other Drivers of Skill Demand and Supply Are Shaping Europe's Labor Market."
- Iosifides, T, M Lavrentiadou, E Petracou, and A Kontis. 2007. "Forms of Social Capital and the Incorporation of Albanian Immigrants in Greece." *Journal of Ethnic and Migration Studies* 33 (8): 1343–61. <https://doi.org/10.1080/13691830701614247>.
- Jacobsen, Jannes. 2019. "An Investment in the Future: Institutional Aspects of Credential Recognition of Refugees in Germany." *Journal of Refugee Studies*, November. <https://doi.org/10.1093/jrs/fez094>.
- Köpping Athanasopoulos, Harald. 2020. "Being Spillover – Undocumented Migrants' Experience of European Integration BT - EU Migration Management and the Social Purpose of European Integration: The Spillover of Misery." In , edited by Harald Köpping Athanasopoulos, 117–43. Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-030-42040-6\\_7](https://doi.org/10.1007/978-3-030-42040-6_7).
- Kourachanis, Nikos. 2018. "From Camps to Social Integration? Social Housing Interventions for Asylum Seekers in Greece." *International Journal of Sociology and Social Policy*, December, IJSSP-08-2018-0130. <https://doi.org/10.1108/IJSSP-08-2018-0130>.
- MacCrory, Frank, George Westerman, Yousef AlHammadi, and Erik Brynjolfsson. 2014. "Racing With and Against the Machine: Changes in Occupational Skill Composition in an Era of Rapid Technological Advance." In *ICIS 2014 Proceedings: Thirty Fifth International Conference on Information Systems*. Atlanta: Association for Information Systems. <https://www.semanticscholar.org/paper/Racing-With-and-Against-the-Machine%3A-Changes-in-in-MacCrory-Westerman/164e93f0d99852a2b8474c9c0c902eb00807a379>.
- Moreira, A L, M Barbosa, M Maia, E Veiga, F Martins, and M Santos. 2020. "Lives on Hold: The Experiences of Asylum Seekers in Moria Refugee Camp." *Community Psychology in Global Perspective*. 6 (1): 92–107. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85084612495&partnerID=40&md5=941522da638fcc52e38731a5d1fe6edb>.
- OECD. 2018. "Factsheet: Working Together for Local Integration of Migrants and Refugees." [https://ec.europa.eu/regional\\_policy/en/information/publications/reports/2018/working-together-for-the-local-integration-of-migrants](https://ec.europa.eu/regional_policy/en/information/publications/reports/2018/working-together-for-the-local-integration-of-migrants).
- Ramadan, A. 2013. "Spatializing the Refugee Camp." *Transactions of the Institute of British Geographers* 38 (1): 65–77.
- Stamatoukou, Eleni. 2020. "Greece: Crowded and Isolated Refugee Camps." 2020. <https://www.balkanicaucaso.org/aree/Grecia/Grecia-campi-profughi-affollati-e-isolati-198714>.
- Stier, Haya. 2015. "The Skill-Divide in Job Quality: A Cross-National Analysis of 28 Countries." *Social Science Research*. <https://doi.org/10.1016/j.ssresearch.2014.07.008>.
- Stone, Nicholas. 2020. "Learning to Belong? An Analysis of Germany's Migrant Orientation Programme from an HRE Perspective." *Human Rights Education Review* 3 (1 SE-Research articles). <https://doi.org/10.7577/hrer.3694>.
- Streitwieser, B., L. Brueck, R. Moody, and M. Taylor. 2017. "The Potential and Reality of New Refugees Entering German Higher Education: The Case of Berlin Institutions." *European Education* 49 (4): 231–52. <https://doi.org/10.1080/10564934.2017.1344864>.

- Tahir, Muhammad Wajid. 2020. "Transition in Gender Ideology and Women Migrant's Empowerment in Germany and Sweden: Inclusion of 'Gender' and 'Integration' Needs in Relevant Policies/Legislation." *Gender Issues* 37 (3): 261–89. <https://doi.org/10.1007/s12147-019-09247-x>.
- The TOC Team. 2020. "Moria Is out of Control with 20.000 Migrants [in Greek]." 2020, 2020.
- Tzoraki, O. 2019. "A Descriptive Study of the Schooling and Higher Education Reforms in Response to the Refugees' Influx into Greece." *Social Sciences* 8 (3). <https://doi.org/10.3390/socsci8030072>.
- Unesco. n.d. "Competency." TVET Glossary: [www.unevoc.unesco.org/tvetipedia.html?Tx\\_drwiki\\_Pi1%5Bkeyword%5D=glossary](http://www.unevoc.unesco.org/tvetipedia.html?Tx_drwiki_Pi1%5Bkeyword%5D=glossary)).