A multi-criteria decision analysis on the distribution of migrants' accommodation facilities in Greece.

Anastasia Blouchoutzi, University of Macedonia, Thessaloniki, Greece
Dimitra Manou, Aristotle University of Thessaloniki, Thessaloniki Greece
Jason Papathanasiou, University of Macedonia, Thessaloniki, Greece

- One out of the two million people who entered the European Union since 2014 used the Eastern Mediterranean sea route (UNHCR, 2019).

- In fact, in 2016, Greece became the first European country with the highest number of asylum applications compared to its population (Lodovici et al., 2017).

- Today in Greece, there are more than 115.600 new migrants and refugees (UNHCR, 2020).

- There are currently 28 mainland long term accommodation sites, one transit site and 1 site with 9 hotels (IOM, 2020).

- The organizational complexity of the current governance of reception, the multi-actor involvement, the centralized decision-making model, the increased competition over the same jobs, the degradation of the environment, the escalation of crime and the demographic changes raised local concerns.

- As a result, in Greece, there is an ongoing political debate on the appropriate placement policy of the immigrant population arriving in the country so as to strengthen their integration outcomes and serve the crucial goal of social inclusion.

Migration in Greece

This paper:

- focuses on the evaluation of the internal redistribution policy of immigrants and refugees in Greece as described by the current reception and accommodation scheme implemented in the country,

- extends the literature on the immigrants' and refugees' integration in their host countries as well as the governance of migration,

- unveils the effectiveness of the implemented immigrants' and refugees' allocation policies in Greece,

- compares it with other European countries' immigrants' and refugees' placement practices,

- illuminates the reasoning for the current settlement,

- provides the decision makers with policy suggestions on alternative allocation policies.

Research Questions-Contribution

- The geographical context, the personal characteristics and the synergies between the two play a critical role in the refugees' integration outcomes (Bansak et al., 2018).

- The settlement and integration nexus involves the satisfaction of migrants' personal needs like housing, their access to employment and their civic participation (Murphy, 2010).

- The labor market integration of immigrants is an economically rational response towards migration and plays a crucial role to the successful settlement of the migrant population.

- The allocation mechanism for the immigrants and refugees is one of the first measures of the integration policy (Askim and Hernes, 2017).

- Whether governments face the option of a fair spatial dispersion between the regions or an optimal cost minimizing allocation process, it is also highly significant to take into account the integration outcomes of the migrants which are relevant to the housing conditions (OECD, 2018).

The Value of Integration

Preferences	2010 to 2019				
	Employment rate	**Unemployment rate**	**Activity rate**	**Less than primary, primary and lower secondary education**	**Population**
min/max	max	min	max	min	max
Weight	1	1	1	1	1
Preferences function	Usual	Usual	Usual	Usual	Linear
thresholds	absolute	absolute	absolute	absolute	absolute
Q: Indifference	n/a	n/a	n/a	n/a	5
P: Preference	n/a	n/a	n/a	n/a	20

The Model (scenario 1)

Scenario 1

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	Attiki	Attiki	Peloponnisos	Attiki	Attiki	Attiki	Attiki	Kriti	Voreio Aigaio	Kriti
2	Peloponnisos	Sterea Ellada	Sterea Ellada	Kriti	Notio Aigaio	Peloponnisos	Kentriki Makedonia	Attiki	Attiki	Attiki
3	Kriti	Peloponnisos	Attiki	Peloponnisos	Kriti	Kentriki Makedonia	Voreio Aigaio	Dytiki Ellada	Kriti	Notio Aigaio
4	Anatoliki Makedonia, Thraki	Kriti	Kriti	Thessalia	Dytiki Ellada	Kriti	Anatoliki Makedonia, Thraki	Voreio Aigaio	Notio Aigaio	Voreio Aigaio
5	Voreio Aigaio	Voreio Aigaio	Ionia Nisia	Notio Aigaio	Peloponnisos	Anatoliki Makedonia, Thraki	Kriti	Peloponnisos	Peloponnisos	Anatoliki Makedonia, Thraki
6	Sterea Ellada	Kentriki Makedonia	Notio Aigaio	Kentriki Makedonia	Ionia Nisia	Ionia Nisia	Dytiki Ellada	Sterea Ellada	Sterea Ellada	Peloponnisos
7	Kentriki Makedonia	Thessalia	Kentriki Makedonia	Sterea Ellada	Kentriki Makedonia	Sterea Ellada	Ionia Nisia	Kentriki Makedonia	Kentriki Makedonia	Kentriki Makedonia
8	Dytiki Ellada	Anatoliki Makedonia, Thraki	Ipeiros	Ionia Nisia	Thessalia	Notio Aigaio	Sterea Ellada	Ionia Nisia	Anatoliki Makedonia, Thraki	Sterea Ellada
9	Ionia Nisia	Ionia Nisia	Voreio Aigaio	Voreio Aigaio	Anatoliki Makedonia, Thraki	Dytiki Ellada	Peloponnisos	Notio Aigaio	Dytiki Ellada	Dytiki Ellada
10	Notio Aigaio	Notio Aigaio	Anatoliki Makedonia, Thraki	Dytiki Ellada	Sterea Ellada	Voreio Aigaio	Notio Aigaio	Thessalia	Ionia Nisia	Ionia Nisia
11	Thessalia	Dytiki Ellada	Thessalia	Anatoliki Makedonia, Thraki	Voreio Aigaio	Thessalia	Ipeiros	Anatoliki Makedonia, Thraki	Ipeiros	Thessalia
12	Ipeiros	Dytiki Makedonia	Dytiki Ellada	Ipeiros	Dytiki Makedonia	Ipeiros	Thessalia	Ipeiros	Thessalia	Dytiki Makedonia
13	Dytiki Makedonia	Ipeiros	Dytiki Makedonia	Dytiki Makedonia	Ipeiros	Dytiki Makedonia	Dytiki Makedonia	Dytiki Makedonia	Dytiki Makedonia	Ipeiros

PROMETHEE Ranking (scenario 1)

e-PROMETHEE Days 2020

Preferences	2010 to 2019				
	Employment rate	**Unemployment rate**	**Activity rate**	**Less than primary, primary and lower secondary education**	**Population**
min/max	max	min	max	min	max
Weight	1	1	1	1	1
Preferences function	Linear	Linear	Linear	Linear	Linear
thresholds	absolute	absolute	absolute	absolute	absolute
Q: Indifference	2	2	2	5	5
P: Preference	4	4	4	10	20

The Model (scenario 2)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	Attiki	Attiki	Attiki	Attiki	Attiki	Attiki	Attiki	Attiki	Voreio Aigaio	Attiki
2	Peloponnisos	Peloponnisos	Peloponnisos	Kriti	Kriti	Peloponnisos	Kentriki Makedonia	Kriti	Attiki	Kriti
3	Kriti	Sterea Ellada	Sterea Ellada	Peloponnisos	Notio Aigaio	Kriti	Voreio Aigaio	Voreio Aigaio	Kriti	Notio Aigaio
4	Sterea Ellada	Kriti	Kriti	Thessalia	Dytiki Ellada	Kentriki Makedonia	Anatoliki Makedonia, Thraki	Dytiki Ellada	Notio Aigaio	Voreio Aigaio
5	Voreio Aigaio	Voreio Aigaio	Notio Aigaio	Kentriki Makedonia	Peloponnisos	Ionia Nisia	Kriti	Peloponnisos	Peloponnisos	Anatoliki Makedonia, Thraki
6	Anatoliki Makedonia, Thraki	Kentriki Makedonia	Ionia Nisia	Ionia Nisia	Ionia Nisia	Sterea Ellada	Dytiki Ellada	Notio Aigaio	Kentriki Makedonia	Peloponnisos
7	Kentriki Makedonia	Anatoliki Makedonia, Thraki	Kentriki Makedonia	Voreio Aigaio	Kentriki Makedonia	Anatoliki Makedonia, Thraki	Peloponnisos	Kentriki Makedonia	Anatoliki Makedonia, Thraki	Sterea Ellada
8	Dytiki Ellada	Ionia Nisia	Ipeiros	Sterea Ellada	Thessalia	Notio Aigaio	Notio Aigaio	Sterea Ellada	Sterea Ellada	Kentriki Makedonia
9	Ionia Nisia	Thessalia	Voreio Aigaio	Notio Aigaio	Sterea Ellada	Dytiki Ellada	Sterea Ellada	Ionia Nisia	Ionia Nisia	Ionia Nisia
10	Notio Aigaio	Dytiki Ellada	Anatoliki Makedonia, Thraki	Dytiki Ellada	Anatoliki Makedonia, Thraki	Voreio Aigaio	Thessalia	Anatoliki Makedonia, Thraki	Ipeiros	Dytiki Ellada
11	Thessalia	Notio Aigaio	Thessalia	Anatoliki Makedonia, Thraki	Voreio Aigaio	Thessalia	Ionia Nisia	Thessalia	Dytiki Ellada	Dytiki Makedonia
12	Ipeiros	Dytiki Makedonia	Dytiki Ellada	Ipeiros	Ipeiros	Ipeiros	Ipeiros	Ipeiros	Thessalia	Thessalia
13	Dytiki Makedonia	Ipeiros	Dytiki Makedonia	Dytiki Makedonia	Dytiki Makedonia	Dytiki Makedonia	Dytiki Makedonia	Dytiki Makedonia	Dytiki Makedonia	Ipeiros

PROMETHEE Ranking (scenario 2)

Stability Intervals in %										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Employment rate	19,73-21,16	16,29-23,83	18,26-23,95	17,56-22,15	16,80-20,12	17,38-22,33	13,72-20,21	19,11-21,21	18,70-25,23	19,03-20,07
Unemployment rate	19,64-21,56	14,16-23,09	17,53-21,74	19,31-23,97	19,00-20,37	17,40-25,58	19,14-25,00	18,92-20,44	18,86-25,76	18,83-20,15
Activity rate	19,73-20,81	17,55-25,59	17,42-22,88	18,42-21,98	15,95-20,37	17,92-21,73	17,13-20,42	19,11-20,17	17,10-21,75	19,93-25,37
Less than primary, primary and lower secondary education	17,94-20,15	17,08-22,03	17,42-21,54	18,08-20,38	18,78-20,37	18,64-20,84	18,26-23,67	19,69-20,87	15,13-22,18	19,61-21,14
Population	18,33-20,27	15,12-22,75	14,89-22,05	18,01-25,08	19,94-23,43	15,96-26,86	19,81-24,41	19,60-21,95	15,26-21,32	19,62-21,22

Sensitivity Analysis (scenario 1)

Stability Intervals in %										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Employment rate	19,92-24,87	18,37-24,22	14,25-23,30	13,40-20,06	19,58-21,42	16,99-22,40	18,63-20,21	17,92-21,38	18,05-22,16	19,64-21,98
Unemployment rate	19,84-26,68	16,54-23,40	17,68-22,32	19,20-20,08	18,85-21,11	17,58-20,30	19,42-21,20	18,71-20,84	15,64-21,65	19,67-22,07
Activity rate	19,94-21,97	19,16-22,22	16,65-21,59	15,74-21,65	19,09-22,45	17,55-21,75	19,51-22,39	18,47-20,76	17,54-22,29	18,06-21,06
Less than primary, primary and lower secondary education	17,33-20,05	16,81-21,59	17,02-24,45	19,92-20,65	19,05-20,41	19,82-22,16	17,74-21,07	18,77-22,02	18,50-22,79	18,95-20,34
Population	17,71-20,07	16,89-21,13	17,51-25,50	19,94-26,73	18,57-20,44	18,05-20,32	19,50-25,85	18,37-22,62	16,79-21,11	16,33-20,54

Sensitivity Analysis (scenario 2)

Selected References

- Askim, J., and Hernes, V. (2017). Bosetting av flyktninger: Hvem bør få siste ord, kommunene, staten eller flyktningen selv? In Askim, J., Kolltveit, K. and Røe G. P. (Eds.), Smartere styring. Oslo: Universitetsforlaget. Bansak, K., Ferwerda, J., Hainmueller.

- Bansak, K., Ferwerda, J., Hainmueller, J., Dillon, A., Hangartner, D., Lawrence, D., Weinstein, J. (2018 January 19). Improving refugee integration through data-driven algorithmic assignment. *Science* 359, pp. 325-329. Available in http://science.sciencemag.org/ (Accessed on 19/3/2020).

- Brans, J. P., and Mareschal, B. (1994). The PROMETHEE GAIA decision support system for multicriteria investigations. *Investigation Operative,* 4(2), pp. 107-117.

- Brans, J., and Mareschal, B. (2005). PROMETHEE methods. In Figueira, J. Greco, S. and Ehrgott, M. *Multiple Criteria Decision Analysis: State of the Art Surveys* (pp. 163-186). Springer Science Business Media, Inc.

- Eurostat (2019). *Migrant Integration Statistics - labour market indicators*. Available in https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Migrant_integration_statistics_%E2%80%93_labour_market_indicators (Accessed on 17/3/2020)

- IOM (2020). Improving the Greek Reception System through Site Management Support and Targeted Interventions in Long-Term Accommodation Sites, Funded by the Asylum, Migration and Integration Fund of the European Union. https://greece.iom.int/sites/default/files/FINAL_21_2-min.pdf Accessed on 30/3/2020

- Lodovici, S. M., Drufuca, M. S., Orlando, N., Crepaldi, C., Pesce, F., Koulocheris, S. and Borbely, S. (2017). Integration of Refugees in Greece, Hungary and Italy: Comparative Analysis- Study for the EMPL Committee. Brussels: The European Union.

- Murphy, J. (2010). The Settlement and Integration Needs of Immigrants: A Literature Review. The Ottawa Local Immigration Partnership. Available online: http://olip-plio.ca/knowledge-base/wp-content/uploads/2013/03/Olip-Review-of-Literature-Final-EN.pdf (Accessed on 30/3/2020).

- OECD (2018). *Working Together for Local Integration of Migrants and Refugees*. Paris: OECD Publishing. Available in http://dx.doi.org/10.1787/9789264085350-en (Accessed on 30/2/2020).

- UNHCR (2019). Mediterranean Situation. Operational Data Portal. Available in https://data2.unhcr.org/en/situations/mediterranean (Accessed 30 April 2019).

- UNHCR (2020). Newsletter 1-31 January. Available in https://data2.unhcr.org/en/documents/download/74391 (Accessed on 30/3/2020).