## Institutional Quality & Ph.D. holders' migration

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## **Extended Abstract**

High-skilled migration has always attracted the attention of scholars, particularly due to the recognized relevance of human capital for socio-economic growth in the knowledge society (Basile et al., 2019; Faggian et al, 2019; 2014). Thus, migration of high-skilled individuals had been studied from a variety of perspectives, e.g. the determinants of migration (see, for example, Mara and Landesmann, 2023; Galos, 2022; Impicciatore and Tosi, 2019; Caragliu et al., 2013; Faggian et al., 2007), the effect of migrants in the destination places, at the regional or country level (e.g. Bratti and Conti, 2018; Faggian et al., 2017; Faggian and McCann, 2009) and the pull factors of destinations (Galos, 2022; Columbu et al., 2021; Ermini et al., 2019; Di Cintio and Grassi, 2017).

In this extensive literature, two gaps emerge.

First, when studying the attractiveness of destinations, extant studies mainly focus on economic and labour market factors (e.g. economic structure, income and future earnings, employment rate, costs of living), while other social and cultural aspects have been scantly addressed, even though the role played by amenities and by a favourable socio-cultural environment is important, particularly when selective migration is concerned (Nifo and Vecchione, 2014).

Second, much has been said about graduates, while little attention has been paid to PhD holders. This, we claim, is a relevant gap. Having held the highest level of education, PhD holders potentially represent a powerful source of knowledge and innovation for the places where they decide to live. Analysing their migration behaviour is, in fact, fundamental to understand the knowledge flow which potentially affect the future socio-economic development of the destination places (Di Cintio and Grassi, 2017; Ermini et al, 2017; Fratesi and Percoco, 2014; Marinelli, 2013).

Starting from these premises, this research investigates the relationship between PhD holders' internal migration in Italy and Institutional Quality (IQ), whose role is fundamental to ensure quality of services and effective governance. Specifically, two research questions are addressed: i) does IQ represent a pull factor for PhD holders' mobility? ii) which specific IQ factors affect their migration behaviour.

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<sup>&</sup>lt;sup>1</sup> Following Kaufmann et al. (2010) and Nifo and Vecchione (2014), IQ is articulated in: "voice and accountability", "Political stability and absence of violence and terrorism", "government effectiveness", "regulatory quality", "rule of law" and "corruption".

The research setting is Italy, which is an interesting case for migration studies given the historical divide between the North and the South (Biagi et al., 2023; Bratti and Conti, 2018; Iammarino and Marinelli, 2015; Fratesi and Percoco, 2014;), increased by the (selective) migration of human capital (Parenti et al., 2022; Basile et al., 2019; Di Berardino et al., 2019).

Our investigation is based on two data sources: the most recent available survey on the employability of PhD holders carried out by ISTAT in 2018 and referring to PhD who hold degree in 2012 and 2014 and the Italian IQ index at the provincial level. Concerning the econometric strategy, we follow Nifo and Vecchione (2014) and we perform a probit Model to overcome possible self-selection problems. We control for individual characteristics (gender, age, faculty, degree grade, family income, parents' education), and for macroeconomic variables both in origin and destination provinces. Results will contribute to the literature on high-skilled migration and its determinants, taking an emerging perspective, that of PhD holders' mobility and IQ, which potentially lead to relevant policy implications. Second, understanding the spatial distribution of PhD holders gives relevant insight on the future economic development, given the role knowledge now lays for the development of regions and territories. Third, understanding the role of IQ as potential pull factor favoring high-skilled migration provide important implications for regional, provincial and local policy makers which, in turn, could become a policy tool too reduce the traditional and historical North-South divide.

## References

Basile, R., Girardi, A., Mantuano, M., Russo, G. 2019. Interregional migration of human capital and unemployment dynamics: evidence from Italian provinces. *German Economic Review*. 20, 4, e385-e414.

Biagi, B., Detotto, C. and Faggian, A. 2023. Evidence of self-selection and spatial mismatch in interregional migration: the case of Italy. *Oxford Economic Papers*, 75(3): 858–872, <a href="https://doi.org/10.1093/oep/gpac043">https://doi.org/10.1093/oep/gpac043</a>.

Bratti, M., Conti, C., 2018. The effect of immigration on innovation in Italy. *Regional Studies* 52, 934–947. https://doi.org/10.1080/00343404.2017.1360483.

Di Cintio, M. and Grassi, E., (2017), "International mobility and wages: an analysis of Italian Ph.D. graduates", *The Annals of Regional Science*, 59:759-791.

Ermini, B., Papi, L. and Scaturro, F., (2017), "An Analysis of the determinants of over-education among Italian Ph.D. graduates", *Italian Economic Journal*, 3: 167-207.

Caragliu, A., Del Bo, C., de Groot, H.L.F. and Linders, G.J.M. 2013. "Cultural determinants of migration", *The Annals of Regional Science*, 51: 7-32.

Fratesi, U., Percoco, M., 2014. Selective Migration, Regional Growth and Convergence: Evidence from Italy. *Reg. Stud.* 48, 1650–1668. https://doi.org/10.1080/00343404.2013.843162.

Columbu, S., Porcu, M., Primerano, I., Sulis, I. and Vitale, M.P., 2021. Analysing the determinants of Italian university student mobility pathways, *Genus*, <a href="https://doi.org/10.1186/s41118-021-00146-2">https://doi.org/10.1186/s41118-021-00146-2</a>.

Di Berardino, C., D'Ingiullo, D., Quaglione, D., Sarra, A., 2019. Migration and institutional quality across Italian provinces: The role of human capital. *Papers in Regional Science* 98, 843–860. <a href="https://doi.org/10.1111/pirs.12371">https://doi.org/10.1111/pirs.12371</a>.

Di Cintio, M. and Grassi, E. 2017. International mobility and wages: an analysis of Italian Ph.D. graduates", *The Annals of Regional Science*, 59:759-791.

Ermini, B., Papi, L. and Scaturro, F. 2017. An Analysis of the determinants of over-education among Italian Ph.D. graduates, *Italian Economic Journal*, 3: 167-207.

Faggian, A, McCann, P. and Sheppard, S., 2007. Human capital, Higher Education and graduate migration: an analysis of Scottish and Welsh students, *Urban Studies*, 44(13): 2511-2528.

Faggian, A, Modrego, F., McCann, P. 2019. Human capital and regional development, in Capello, R. and Nijkamp, P. (eds), *Handbook of regional growth and development theories*, doi <a href="https://doi.org/10.4337/9781788970020">https://doi.org/10.4337/9781788970020</a>.

Faggian, A. and McCann, P. 2009. Human capital, graduate migration and innovation in British regions, *Cambridge Journal of Economics*, 33(2): 317-333.

Faggian, A., Comunian, R. Li, Q.C. 2014. Interregional migration of human creative capital: the case of "Bohemian graduates". *Geoforum*. 55, 33-42.

Faggian, A., Rajbhandari, I. and Dotzel, K.R., 2017). The interregional migration of human capital and its regional consequences: a review, *Regional Studies*, 51(1): 128-143.

Fratesi, U., Percoco, M., 2014. Selective Migration, Regional Growth and Convergence: Evidence from Italy. *Regional Studies* 48, 1650–1668. <a href="https://doi.org/10.1080/00343404.2013.843162">https://doi.org/10.1080/00343404.2013.843162</a>.

Galos, D. R. 2022. Privilege travels: migration and labour market outcomes of Southern Italian graduates. *Genus*, <a href="https://doi.org/10.1186/s41118-022-00157-7">https://doi.org/10.1186/s41118-022-00157-7</a>.

Iammarino, S., Marinelli, E., 2015. Education—Job (Mis)Match and Interregional Migration: Italian University Graduates' Transition to Work. *Regional Studies*, https://doi.org/10.1080/00343404.2014.965135.

Impicciatore, R., & Tosi, F. 2019. Student mobility in Italy: the increasing role of family background during the expansion of higher education supply, *Research in Social Stratification and Mobility*, <a href="https://doi.org/10.1016/j.rssm.2019.100409">https://doi.org/10.1016/j.rssm.2019.100409</a>.

Kaufmann D., Kraay A. and Mastruzzi M. 2010. The Worldwide Governance Indicators: Methodology and Analytical Issues. Policy Research Working Paper Series Number 5430. The World Bank, Washington, DC.

Mara, I. and Landesmann, M. 2023. Basic relationships between human capital, migration and labour markets in the Western Balkans: An econometric investigation. *International Migration*, https://doi.org/10.1111/imig.13025.

Marinelli, E. 2013. Sub-National Graduate Mobility and Knowledge Flows: An Exploratory Analysis of Onward- and Return-Migrants in Italy, *Regional Studies* 47 (10): 1618–1633.

Nifo, A. and Vecchione, G., 2014. Do Institutions Play a Role in Skilled Migration? The Case of Italy. *Regional Studies*, 48 (10).

Parenti, B., Pinto, M. and Sarno, D. 2022. Job Satisfaction Among Ph.D. Holders: How much do Regional Divides and Employment Sectors matter?, *Higher Education Policy*, 35: 318-374.