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BUILDING AND TRANSFERRING HUMAN CAPITAL VIA MIGRATION[1]

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Abstract

This paper aims to explore how human capital is built and transferred via international migration. The paper is based on data from a large-scale survey with 30,000 participants from nine European countries. The survey examined several skills and competences acquired via international migration: self-confidence, learning to adapt to new cultures, ability to deal with new challenges, learning a language, acquiring formal qualifications and learning new skills. The key research question is how skills and competences are associated with specific types of tacit and explicit knowledge. The survey data are analysed via non-parametric tests and ANOVA procedure. The main finding is that knowledge acquisition and transfer differs among different socio-economic groups. Females, for example, seem to benefit more from embodied knowledge than males. Embrained and embedded knowledge is considered more valuable by tertiary graduates than people with secondary education.

Keywords: International migration, Knowledge transfer, Tacit knowledge.

JEL Classification: E24, J24, O15.

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1. Introduction

The international migration has been on rise in past decades in Europe. Significant part of the total migration in Europe referred to the intra-European migration flows. The average annual stock increased from 9.1 mil-lion in the period 1997 – 2004 to 13.7 million in the period 2005 – 2013 in the EU (Eurostat, 2016). The intra-European movements were assisted by the visa-free travel arrangements for EU nationals, but also by many national and European-wide programmes assisting some special forms of mobility. Young Europeans, for example, benefited from the ERASMUS programme and other measures supporting intra-European mobility by young people. According to the European Commission, over 272 thousand students participated in the ERASMUS programme in 2013/2014. The ERASMUS supported about one third of all student migration within the EU/EEA area in the same year (European Commission, 2015). The intra-European mobility benefited not only from the Bologna process, but also from growth in travel by independent young travellers.

International migration is a transformative experience for young people. The young migrants learn language and culture of their host countries. Students and workers acquire new qualifications. They also accumulate other valuable skills and competences, such as learning new skills and ability to deal with challenges. Many young people have to learn how to arrange their travel and accommodation, and organise their work / study abroad. New skills and competences acquired via migration tend to boost self-confidence.

Literature on knowledge, skills and competences recognises two distinctive types of knowledge (Nonaka and Von Krogh, 2009). The 'explicit knowledge' refers to knowledge, which is easily to express and formulate in speech, writing or drawing. The 'tacit knowledge' refers to knowledge we know we have, but are unable to formulate and record Polanyi (1958). It, for example, is easy to transfer pictures or descriptions of a bicycle. One, however, cannot learn how to ride a bicycle from words or drawings. One can learn to ride a bicycle only via personal experience, i.e. 'learning by doing' (Maskell and Malmberg, 1999). Other examples of tacit knowledge include managerial skills, understanding cultural and social norms, and/or personal competences, such as fluency in foreign language and self-confidence. Key distinctions between explicit and tacit knowledge can be summarised in following way:

- Explicit knowledge is based on knowledge of facts. It is easy to codify and transfer across the people, borders, distances and cultures.
- Tacit knowledge is difficult to codify and transfer. It can be acquitted only via personal experience, such as sensory inputs, and/or observing and intuitive imitating other people (Bandura and Walters, 1977; Howells, 2000). Acquisition of tacit knowledge is often automatic and the learner is not aware of the knowledge gained (Taylor, 2007).

The tacit and explicit knowledge are not completely separated. They rather represent two opposite sides of the 'knowledge continuum' (Blackler, 2002). The literature on tacit knowledge recognises four transitory stages between tacit and explicit knowledge (Inkpen and Dinur, 1998; Bathelt and Henn, 2014):

- The *embrained knowledge* ('know what') refers to acquisition of new skills. It is shaped by cognitive abilities. The embrained knowledge often involves acquisition of formal skills and qualifications, such as courses, certificates and diplomas. The embrained knowledge involves explicit knowledge learn by an individual (explicit element), but also ability to draw conceptual frameworks from facts learned via formal learning (tacit element).
- The *encultured knowledge* ('doing what where') involves learning and understanding social and cultural norms. These norms may refer to foreign cultures and ethnicities, but also to rules established and shared by organisations and social groups.
- The *embedded knowledge* ('know why') represents understanding contextual information. An individual learns procedures and routines governing organisations and societies.
- The *embodied knowledge* ('know how') is learned only via personal experience (often sensorial), via 'learning by doing'. It is stored both in body and mind. The embodied knowledge is related to personal competences in coping with tasks, problems and challenges.

The vast literature on human capital mostly concentrates on acquisition of explicit knowledge. This is understandable, because the explicit knowledge can easily be approximated by formal schooling. There, for example, are abundant data on internationals students, study programmes for foreign students and / or brain drain / brain gain. Much less is known about building and transferring tacit knowledge. The tacit knowledge is acquired and transferred via personal experience and/or informal learning, Information on tacit knowledge cannot be obtained from statistics or official reports on student mobility. Information on tacit knowledge built and transferred via international migrants can be obtained only via personal communication with migrants.

There is limited literature on tacit knowledge acquired and transferred via international migration. Some authors (Hagan, Demonsant and Chávez, 2014; Hagan and Wassink, 2016) based their research on case studies and in-depth interviews. The qualitative studies are limited by low numbers of participants. This paper adopts different approach. It is based on information provided by a large-scale European survey. We use perspective of tacit and explicit knowledge to conceptualise skills and competences acquired by young European migrants. The key research question is: 'how skills and competences are associated with specific types of tacit and explicit knowledge?'. The survey data are analysed via

non-parametric tests and ANOVA procedure. The conclusions summarise major findings and limitations, and point to directions for further research.

2. The European sample

The data were generated in the YMOBILITY project. The large panel survey (30,000+ respondents) was implemented in nine European countries by an international polling agency. The project studied causes and outcomes of intra-European migration by young people. The survey targeted young population in age bracket 16–35 year in each country. Both migrants and non-migrants were members of the sample. The total sample involved 949 current migrants and 3250 returned migrants from nine countries.

The YMOBILITY project studied how the young Europeans asses their experience abroad. Six questions explored acquisition of diverse forms of human capital: 'How important to you has your experience abroad been in terms of the following factors:

(i) acquiring formal qualifications;
(ii) learning new skills;
(iii) ability to deal with new challenges;
(iv) self-confidence;
(v) learning a language;
(vi) learning to adapt to new cultures.

The survey participants answered on the Likert scale from 1= not at all important to 5 = very important.

Our analysis distinguishes between knowledge acquired and transferred by current migrants and returned migrants.

We firstly applied the factor analysis to find whether there were perceived similarities between types of knowledge acquired by migrants and returnees (Table 1).

The factor analysis explained 72.69% of the total variance in the returnees sample, 76.99% in the current migrant sample and 73.44% in the total sample. The formal qualifications and new skills formed one factor, while the ability to deal with challenges, self-confidence, language knowledge and ability to adapt to new cultures formed another one. We further refer to factor one as 'mostly explicit knowledge', while to factor two as 'mostly tacit knowledge'. The factor loadings for 'learning new skills" appeared in both factors. The respondents indicated there was a tacit element in skills learned abroad.

Table 1. Factor analysis

	Returnees		**Current migrants**		**Total**	
Factor	**1:** 46.57%	**2:** 26.12%	**1:** 44.50%	**2:** 32.49%	**1:** 46.55%	**2:** 26.88%
Self-confidence	**0.864**	0.175	**0.827**	0.259	**0.860**	0.198
Learning to adapt to new cultures	**0.846**	0.139	**0.825**	0.324	**0.844**	0.157
Ability to deal with new challenges	**0.763**	0.362	**0.794**	0.119	**0.749**	0.395
Learning a language	**0.694**	0.183	**0.655**	0.565	**0.714**	0.162
Acquiring formal qualifications	0.097	**0.930**	0.114	**0.926**	0.100	**0.930**
Learning new skills	0.511	**0.698**	0.483	**0.766**	0.511	**0.709**

Returnees: KMO Measure of Sampling Adequacy: 0.830; Approx. Chi-Square7782.012; Sig. 0.000**;** Current migrants: KMO Measure of Sampling Adequacy: 0.843; Approx. Chi-Square 2061.962; Sig. 0.000**;** Total sample: KMO Measure of Sampling Adequacy: 0.834; Approx. Chi-Square 9811.815; Sig. 0.000
Source: Authors' research

The non-parametric tests were applied to explore following research questions:

- What knowledge have migrants acquired via migration?
- Does the knowledge acquired differ according to socio-economic variables?
- Do migrants and returnees differ in assessing specific types of acquired knowledge?

The returnees evaluated their experience higher than current migrants for most items of skills and competences (Table 2) [2]. The current migrants evaluated their current experience, while the returnees referred to past one. The current experience was vivid and seemed important for current migrants. When evaluating past experience, returnees could use the post-rationalisation perspective.

The migration experience seems to have had much more lasting impact on female lives than male ones. The female returnees considered their experience abroad more important than (a) male returnees and (b) female current migrants. The differences between male and female returnees were most pronounced for acquisition of the culture and language-related human capital ('learning to adapt to new cultures' and 'learning a language'). Females also claimed to have benefited from personal skills, such as self-confidence and ability to deal with

[2] The population weights were applied to adjust of oversampling for selected sub-populations. The survey weight value for the respondents was computed for gender x age x education x urban-rural sub-population, at the highest spatial level of detail provided. All results for descriptive statistics and ANOVA are based on the weighted data.

new challenges. There is a robust evidence on significant gender gap in self-esteem. Males tend to report higher levels of self-esteem than females do (Bleidorn, Arslan, Denissen, Rentfrow, Gebauer, Potter and Gosling, 2016).

Migrants and returnees with higher education claimed to have benefited from their migration experience more than migrants / returnees with secondary education. The people with primary education claimed lower benefits from migration than people with secondary education. Current migrants with primary education, however, significantly benefited from learning foreign language. Unlike migrants with higher education, migrants with primary education probably had limited knowledge of foreign languages before migration.

The sample was collected in nine European countries. The north of Europe was represented by the Germany (DE), Ireland (IE), Sweden, (SE), and the United Kingdom (UK). The north[3] accounted for the highest living standards and the lowest youth unemployment rates. Spain (ES) and Italy (IT) represented the south of Europe. The south accounted for the high living standards, but had the highest youth unemployment rates in the EU. Latvia (LV), Romania (RO) and Slovakia (SK) represented countries from the EU's eastern enlargement. The east accounted for the medium-high living standards and medium-high youth unemployment rates. The highest shares of the tertiary graduates were found in the south (40.6%) and north (36.0%) samples, while the lowest ones in the east one (20.7%). Some 12.8% migrants from the east reported primary education only. The north and south samples had fairly low shares of migrants with primary education (5.7% and 5.3% respectively). Educational structure of the migrants may explain some regional differences in acquisition of the human capital. The current migrants from the east, for example, highly appreciated opportunity to learn a new language. The university-educated migrants from the north and south likely spoke foreign language before migration. Some regional differences in acquisition of the human capital, however, must have been informed by other factors than education. The current migrants from the south and east, for example, reported the highest gains from migration in terms of increased self-confidence and adaptations to new culture.

[3] The labels 'north', 'south' and 'east' are illustrative for the respective parts of the EU. The survey was representative for young population of nine European countries (representing 58% of total European population aged 16-35). We, however, make no claims to have representative data for the above-mentioned three regions.

Table 2. Self-assessment of human capital acquired via migration by returnees and current migrants, European migrants

	Gender		**Education**			**region of origin**		
	female	*male*	*primary*	*secondary*	*higher*	*North*	*South*	*East*
Returnees								
Acquiring formal qualifications (embrained)	3.30	3.28	2.75	3.11	3.59*	3.29	3.51	3.07*
Learning new skills (embrained/embedded)	4.06	3.92*	3.48	3.88	4.19*	3.96	4.18	3.85*
Ability to deal with new challenges (embodied)	4.36	4.08*	3.77	4.17	4.33*	4.17	4.34	4.16*
Self-confidence (embodied)	4.28	4.06*	3.84	4.11	4.28*	4.08	4.31	4.15*
Learning a language (encultured)	4.13	3.85*	3.84	3.90	4.09*	3.77	4.32	3.97*
Learning to adapt to new cultures (encultured)	4.21	3.90*	3.81	3.93	4.21*	4.06	4.27	3.84*
N	*1606*	*1644*	*223*	*1663*	*1365*	*1428*	*944*	*879*
Current migrants								
Acquiring formal qualifications (embrained)	3.54	3.49	3.70	3.36	3.72*	3.54	3.71	3.38
Learning new skills (embrained/embedded)	3.97	3.89	3.63	3.85	4.14*	3.85	3.98	4.05
Ability to deal with new challenges (embodied)	4.14	3.98	3.88	4.06	4.21*	3.98	4.17	4.18
Self-confidence (embodied)	4.12	3.95	3.80	4.03	4.20*	3.92	4.12	4.22*
Learning a language (encultured)	3.82	3.90	4.00	3.98	3.73*	3.56	3.96	4.21*
Learning to adapt to new cultures (encultured))	4.09	3.94*	3.63	4.00	4.16*	3.90	4.21	4.13*
N	*567*	*382*	*55*	*534*	*360*	*519*	*166*	*263*

*Significant on 0.05 level. Mann-Whitney U-test for gender, Kruskal-Wallis test for education and region of origin.
Source: Authors' research

The ANOVA procedure was applied to examine (i) significant differences between groups (gender, education and region of origin) in their acquisition of human capital, and (ii) effect size. The effect size is measured via the partial eta squared (PES) statistics. The PES values indicate the percentage of variance in the dependent variable attributable to a particular independent variable.

Results of the ANOVA (Table 3) indicate that education had the largest impact on acquisition of human capital by the returnees. Acquisition of new skills,

improved ability to deal with new challenges and increased self-confidence generated the highest PES values (0.034, 0.023 and 0.018 respectively) in the returnee sample and 0.018, 0.011 and 0.020 in the current migrant sample. 'Acquiring formal qualification' also accounted for high PES values (0.025) in the sample of returnees. People with tertiary education claimed the highest improvement in the abovementioned skills.

Gender was significant factor of the competence acquisition. Females considered their experience abroad more important than males. The effect of region of origin seemed important. The learning language generated the highest PES values (0.012 respectively in the returnee sample and 0.029 in the current migrant sample). Current migrant from the East and returnees from the South claimed the highest improvements in language skills.

The interaction terms help to understand combined contribution of independent variables to the total variance in dependent variables. Combined influence of (i) education and region of origin on acquiring formal qualification and learning new skills, and (ii) education and gender on increased self-confidence generated the highest PES values in the sample of returnees. In the current migrant sample, the highest PES values for interaction terms were found for combined influence of (i) gender and region of origin on acquiring formal qualification, and (ii) education and gender on acquisition of total human capital.

The ANOVA results confirm findings reported in Table 2. The results suggest that returnees with tertiary education were able to improve their embrained/embedded knowledge (acquisition of formal qualifications and new skills) more than other subgroups. As for the embodied knowledge (self-confidence and ability to do deal with challenges) female returnees were main beneficiaries. The southern returnees evaluated the encultured knowledge most positively compared to returnees from other regions.

Table 3. The ANOVA model

		Corrected Model	**Intercept**	**Gender**	**Education**	**Region**	**Gender * Education**	**Gender * region**	**Education * region**	**Gender * Education * region**
Returnees										
Acquiring formal qualifications	Sig.	**0.000**	**0.000**	0.811	**0.000**	0.336	0.557	**0.005**	**0.000**	**0.000**
	PES	0.066	0.654	0.000	0.025	0.001	0.000	0.003	0.012	0.007
Learning	Sig.	**0.000**	**0.000**	**0.041**	**0.000**	**0.008**	**0.000**	0.718	**0.000**	0.192

new skills	PES	0.070	0.811	0.001	0.034	0.003	0.005	0.000	0.021	0.002
Ability to deal with new challenges	Sig.	**0.000**	**0.000**	0.794	**0.000**	**0.029**	**0.000**	0.534	**0.000**	0.072
	PES	0.062	0.863	0.000	0.023	0.002	0.009	0.000	0.007	0.002
Learning a language	Sig.	**0.000**	**0.000**	**0.002**	**0.000**	**0.000**	0.221	**0.003**	**0.006**	**0.040**
	PES	0.063	0.787	0.003	0.006	0.012	0.001	0.003	0.004	0.003
Self-confidence	Sig.	**0.000**	**0.000**	**0.023**	**0.000**	**0.001**	**0.000**	0.740	0.565	0.144
	PES	0.054	0.857	0.002	0.018	0.004	0.012	0.000	0.001	0.002
Learning to adapt to new cultures	Sig.	**0.000**	**0.000**	0.826	**0.000**	**0.000**	**0.000**	0.997	0.239	0.155
	PES	0.067	0.829	0.000	0.010	0.005	0.009	0.000	0.002	0.002
N				3251	3251	3251				
Current migrants										
Acquiring formal qualifications	Sig.	**0.000**	**0.000**	0.149	0.087	**0.018**	**0.012**	**0.001**	0.180	0.606
	PES	0.065	0.772	0.003	0.007	0.012	0.013	0.020	0.007	0.003
Learning new skills	Sig.	**0.000**	**0.000**	**0.036**	**0.003**	**0.050**	**0.000**	0.148	0.175	0.294
	PES	0.061	0.839	0.007	0.018	0.009	0.024	0.006	0.008	0.006
Ability to deal with new challenges	Sig.	**0.000**	**0.000**	**0.000**	**0.031**	**0.019**	**0.000**	0.154	0.530	0.595
	PES	0.099	0.874	0.034	0.011	0.012	0.058	0.006	0.003	0.003
Learning a language	Sig.	**0.000**	**0.000**	0.058	0.791	**0.000**	**0.003**	0.825	0.366	0.073
	PES	0.091	0.797	0.006	0.001	0.029	0.017	0.001	0.005	0.011
Self-confidence	Sig.	**0.000**	**0.000**	**0.000**	**0.001**	**0.008**	**0.000**	0.719	0.358	0.208
	PES	0.077	0.864	0.029	0.020	0.015	0.036	0.001	0.005	0.007
Learning to adapt to new cultures	Sig.	**0.002**	**0.000**	**0.005**	**0.038**	**0.000**	**0.031**	0.698	0.065	0.398
	PES	0.053	0.856	0.012	0.010	0.024	0.011	0.001	0.011	0.005
N				949	949	949				

Source: Authors' research

3. Conclusions

The quantitative part of the paper indicates that specific socio-demographic groups appreciate different types of knowledge acquired via migration. Migration seems to boost embrained / embedded knowledge in tertiary graduates and embodied knowledge in females. Life-cycle seems to affect way how the

knowledge acquired via migration is evaluated. Current migrants, for example, tend to value formal qualifications and ability to adapt to new cultures more than returnees. This is understandable given current circumstances of their life. Returnees consider their migration experience in a retrospective. They consider ability to deal with challenges and improved self-confidence the most valuable skills and competences acquired via migration. These skills and competences refer to tacit knowledge and can be built only via personal experience.

We also detected interesting differences in knowledge acquisition by European regions. Participants from the south and east of Europe generally indicated higher gains form international migration in terms tacit knowledge (self-confidence and ability to deal with challenges) than participants from the north. We assume, participants from the south and north had lower income and less experience with international travel and migration than participants from the north. Young people from the south and east of Europe therefore considered their new tacit knowledge more important the people from the north, who travelled more frequently in the past. The participants from the north, on the other hand, considered acquisition of explicit (embrained) knowledge the most valuable part of their migration experience.

Our research had some important limitations. Our sample included large numbers of participants for nine European countries. Our findings, however, cannot be generalised for all European countries. The large-scale survey is an expensive instrument. Financial constraints allowed for limited numbers of survey questions. We included some most important knowledge types into the survey, but the list of knowledge type cannot be comprehensive.

The future research may explore some other forms of tacit knowledge. There is some evidence that knowledge acquisition is impacted by personality type (Matzler, Renzl, Müller, Herting and Mooradian, 2008). There is an interesting opportunity to study, how acquisition of tacit versus explicit knowledge is shaped by diverse personality types.

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