Occupational Mobility of Natives Vs Immigrants in Australia

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Outline

Background

- Occupational mobility is defined as - moving from one occupation to another.
- It can lead to an improved fit of skills and job-specific requirements, and higher wages for a worker (Groes et al., 2015).
- Employers can benefit from it because of improved match quality (Groes et al., 2015).
- It is an important determinant of labor market efficiency and income inequality at an aggregate level (Kwon et al, 2014).
- For immigrants, occupational mobility could be a mechanism for integration in the labor market of the host country.

Background

- Occupational mobility of immigrants is blocked by-
  - Formal barriers: required licenses, credentials, certifications
  - Lack of country-specific capital: linguistic deficiencies, quality of education, cultural and social norms, limited access to effective search channels, and so on (Borjas, 1999).
- Therefore, immigrants tend to accept less desirable jobs or occupations.
- Over time, they acquire new skills and knowledge required by the labor market of the destination country (Chiswick et al 2005).
- Then they search for a job that matches more with their skills and background.
- Does this job matching phenomenon lead migrants to become occupationally more mobile than the natives?

Research Questions

- How does the occupational mobility of immigrants differ from that of natives in Australia?
- What factors can explain-
  - the choice of a worker to move from one occupation to another or stay at the same occupation over time;
  - the direction of occupational mobility (downward or upward);
  - the magnitude/distance of occupational mobility of immigrant and native workers?
- Do the determinants of occupational mobility vary by country of birth and visa classes of the migrant workers?

Contribution to the Literature

- Existing studies discuss about the earnings and employment outcomes for immigrants- Clarke et al. 2013, 2019; Antecol et al., 2006; Breunig et al., 2013.
- The novelty in the measurement of occupational distance
  - existing literature measured in terms of wage and social status (Fleming et al., 2016).
  - this paper uses the importance of certain skills in each occupation.
- Analyzing the determinants of occupational mobility.
- Describing the determinants of occupational mobility of different immigrants' groups based on their country of birth and visa classes.

Data: Source

- Australian Census Longitudinal Data (ACLD) 2006-2011-2016 of Australian Bureau of Statistics (ABS): for individual-level data on employment outcomes and worker characteristics.
- Occupational Information Network (O*NET) Data: to construct the occupational distance using the information on occupation skills.
- Labour Force Survey (LFS): for state-wise unemployment rate.

Data: Sample

- Aged between 24 to 64
- Migrants who were 24 years or older at the time of migration in Australia
- Employees only, not self-employed and not students
- Year of entry to the labor market in Aus: on or after 1991
- For natives:
  Australian labor market experience = Age - 24
  Foreign experience = 0
  Year of entry to the Aus labor market = when they turned 24
- For migrants:
  Australian labor market experience = Age - Age at migration
  Foreign experience = Age at migration - 24
  Year of entry to the Aus labor market = Year of migration

Summary Statistics

	Natives		Migrants	
	Mean	SD	Mean	SD
Observations	129,976		24,175	
Age	34.1	(0.02)	41.9	(7.85)
Age at arrival			33.0	(6.69)
Aus exp	10.1	(5.72)	8.9	(5.16)
For exp			9.0	(6.69)
University degree	30%	(0.46)	50%	(0.50)
Female	49%	(0.50)	46%	(0.50)
English proficiency	100%	(0.07)	79%	(0.41)
Urban	71%	(0.45)	91%	(0.29)
Manager	12.2%	(0.33)	11.3%	(0.32)
Professional	25.9%	(0.44)	33.8%	(0.47)
Technician	13.6%	(0.34)	12.2%	(0.33)
Community	8.7%	(0.28)	7.7%	(0.27)
Clerical	17.5%	(0.38)	14.1%	(0.35)
Sales	8.1%	(0.27)	5.0%	(0.22)
Machinery	6.8%	(0.25)	6.4%	(0.25)
Labourer	7.3%	(0.26)	9.5%	(0.29)

Methodology

- Data from O*NET - the importance level of 35 skills for each 3 digit occupation.
- The value/rating of importance level of each skill indicates the importance of a skill to finish the tasks of each occupation.
- Factor analysis: four major factors- Analytical/cognitive skill, Operation/physical skill, Communication/People management skill, and Resource management skill.
- These four factors have different scores for each occupation.

Methodology

Measuring Occupational Distance:

The distance between two occupations j and k is:

$$Dist_{j,k,t} = \sqrt{(an_{k,t} - an_{j,t-5})^2 + (op_{k,t} - op_{j,t-5})^2 + (co_{k,t} - co_{j,t-5})^2 + (re_{j,t} - re_{k,t-5})^2}$$

where $t = \{2011, 2016\}$.

- an= score of analytical/critical thinking/cognitive skill
- op= score of operational/physical skill
- co= score of communication/interpersonal/people management skill
- re= score of resource management skill

If j=k then there is no change in occupation, hence occupational distance would be zero.

Methodology

The Direction of the Occupational Mobility:

- It is the relative ranking of the previous occupation to the new occupation.
- Upward mobility if:
  $(an_{k,t} - an_{j,t-5}) > 0$ or
  $(op_{k,t} - op_{j,t-5}) > 0$ or
  $(co_{k,t} - co_{j,t-5}) > 0$ or
  $(re_{j,t} - re_{k,t-5}) > 0$ or
  $(an_{k,t} - an_{j,t-5}) + (op_{k,t} - op_{j,t-5}) + (co_{k,t} - co_{j,t-5}) + (re_{j,t} - re_{k,t-5}) > 0$
- Otherwise downward mobility
- If the values are equal to 0, that means no mobility

Methodology

Dependent variables:

- Indicator variable for occupation change: 1 if the individual's 3 digit occupation changed from the previous census, 0 otherwise.
- Indicator variable for the direction of the mobility: 1 if the mobility is upward, 0 if downward.
- Occupational distance: This is a continuous measurement for the distance between two occupations. The value shows the magnitude of the distance i.e- how far or close the occupations are.

	Native		Migrants		t-test
	Mean	SE	Mean	SE	p-value
Mobility	53%	(0.001)	47%	(0.003)	0.00
Direction	55%	(0.002)	53%	(0.005)	0.044
Occ Distance	23.44	(0.049)	22.57	(0.117)	0.00

Methodology

Mover/Stayer: Linear Probability Model.

$$
\begin{aligned}
Y_{ijrt} \quad = \quad & \alpha_1 + \sum_{j=2}^{4} \beta_j C_j + f(yse_{jr,t-5}) + \sum_{j=1}^{4} \delta_j (C_j . yse_{jr,t-5}) + \pi Univ_{ijr} \\
& + M_{ijr} . \left[\sum_{j=1}^{4} \beta_j^m C_j + \sum_{j=1}^{4} \delta_j^m (C_j . yse_{jr,t-5}) + \theta_1 fexp_{jr} + \pi^m Univ_{ijr} \right] \\
& + \gamma X + \alpha_2 ur_{r,t-5} + \alpha_3 es_{k,t-5} + \sum_{k=2}^{94} \lambda_k occ_{k,t-5} + e_{ijr,t-5}
\end{aligned}
$$

where Y_{ijrt} is the dependent variable of individual i from labor market entry cohort j residing in state r and observed in year t.
C_j: four cohort dummies; $f(yse)$: quadratic profile of years since the labor market entry; ur: de-trended regional unemployment rate; occ: previous occupation; es: change in employment share in the previous occupation; M: immigrant dummy; $fexp$: foreign experience; $Univ$: university degree dummy; X is a vector of other control variables; and e is a random error term with a conditional mean of zero.

Methodology

The Direction of Occupational Mobility: Linear Probability Model (No move and downward movement = 0 and upward movement = 1).

$$
\begin{aligned}
Y_{ijrt} \quad = \quad & \alpha_1 + \sum_{j=2}^{4} \beta_j C_j + f(yse_{jr,t-5}) + \sum_{j=1}^{4} \delta_j (C_j . yse_{jr,t-5}) + \pi Univ_{ijr} \\
& + M_{ijr} . \left[\sum_{j=1}^{4} \beta_j^m C_j + \sum_{j=1}^{4} \delta_j^m (C_j . yse_{jr,t-5}) + \theta_1 fexp_{jr} + \pi^m Univ_{ijr} \right] \\
& + \gamma X + \alpha_2 ur_{r,t-5} + \sum_{k=2}^{94} \lambda_k occ_{k,t-5} + e_{ijr,t-5}
\end{aligned}
$$

y_{ijrt} is 1 if individual i switches their occupation in period t from $t-5$ to a higher-ranking occupation and is 0 otherwise.

Methodology

The Distance of Occupational Mobility: Tobit model.

$$E[Y_{ijrt}|Y*_{ijrt} > 0, X]$$

$$= \alpha_1 + \sum_{j=2}^{4} \beta_j C_j + f(yse_{jr,t-5}) + \sum_{j=1}^{4} \delta_j (C_j . yse_{jr,t-5}) + \pi Univ_{ijr}$$

$$+ \mathrm{M}_{ijr} . \left[\sum_{j=1}^{4} \beta_j^m C_j + \sum_{j=1}^{4} \delta_j^m (C_j . yse_{jr,t-5}) + \theta_1 fexp_{jr} + \pi^m Univ_{ijr} \right]$$

$$+ \gamma X + \alpha_2 ur_{r,t-5} + \sum_{k=2}^{94} \lambda_k occ_{k,t-5} + e_{ijr,t-5}$$

where Y_{ijrt} is a continuous variable of the occupational distance between the present occupation in year t and the previous occupation in year $t-5$ of individual i from labor market entry cohort j residing in state r.

Result: Mover/Stayer

Dep var : Move (=1)	(1)	(2)	(3)
Aus exp	-0.01***	-0.01***	-0.02***
	(0.002)	(0.01)	(0.01)
Foreign exp	-0.01***	-0.02***	-0.01***
	(0.002)	(0.002)	(0.002)
Female	0.01*	0.01*	0.002
	(0.007)	(0.007)	(0.008)
MigxUniv	0.06	0.05	0.01
	(0.02)	(0.02)	(0.01)
Eng prof	0.05***	0.05***	0.04***
	(0.02)	(0.02)	(0.02)
Change in vacancy share	-0.01***	-0.01***	-0.01***
	(0.002)	(0.002)	(0.003)
State fixed effect	yes	yes	yes
Cohort fixed effect	no	yes	yes
Occ fixed effect	no	no	yes
Immigrant sample		24,175	
Native sample		129,976	

significant at *** 1% level, ** 5% level, * 10% level

Result: Direction

Direction based on analytical skill (col 1), physical skill (col 2), communication skill (col 3), all skill (col 4)

Dep var : Upward direc (=1)	ana	phy	com	all
Aus exp	-0.02***	-0.1	-0.02***	-0.02***
	(0.02)	(0.06)	(0.01)	
Foreign exp	0.005***	0.003***	0.005***	0.005***
	(0.00)	(0.00)	(0.00)	(0.00)
Female	-0.04***	-0.08***	0.003	-0.08***
	(0.003)	(0.003)	(0.007)	(0.003)
MigxUniv	0.11***	-0.03***	0.06***	0.06***
	(0.01)	(0.01)	(0.01)	(0.01)
Eng prof	0.09***	-0.01***	0.10***	0.06***
	(0.01)	(0.01)	(0.01)	(0.01)
State fixed effect	yes	yes	yes	yes
Cohort fixed effect	yes	yes	yes	yes
Occ fixed effect	yes	yes	yes	yes
Immigrant sample		11,410		
Native sample		68,426		

significant at *** 1% level, ** 5% level, * 10% level

Result: Occupational distance

Dep var : Distance	OLS	Heckman	ME of Tobit
Aus exp	-0.57***	-0.78***	-0.54***
	(0.16)	(0.25)	(0.16)
Foreign exp	-0.24***	-0.37***	-0.24***
	(0.03)	(0.04)	(0.03)
Female	-0.74***	-1.10***	-0.46***
	(0.09)	(0.14)	(0.09)
MigxUniv	-0.06	-0.48	-0.35*
	(0.20)	(0.33)	(0.21)
Eng prof	1.31***	2.1***	1.45***
	(0.23)	(0.39)	(0.26)
State fixed effect	yes	yes	yes
Cohort fixed effect	yes	yes	yes
Occ fixed effect	yes	yes	yes
Immigrant sample		11,410	
Native sample		68,426	

significant at *** 1% level, ** 5% level, * 10% level

Findings

- Natives are more occupationally mobile than immigrants.
- Individuals are more reluctant to change occupation as they gather more experience and occupation specific skills.
- Migrants who arrive at early ages are more mobile than the migrants who arrive in later ages.
- Migrants with University degrees experience the higher probability of upward mobility.
- As the English proficiency increases, the probability of mobility and upward mobility increases.The distance of the mobility is also higher for the migrants who have higher English proficiency.

Findings

- Experience in the Australian market does not have significant impact on the occupational mobility of different migrant groups by their country of birth.
- Age at migration (Foreign experience), English proficiency and change in demand of previous occupations are more significant determinants of occupational mobility of Indian, Chinese, Filipino and English speaking migrants.
- Employer-sponsored migrants become more mobile as their Australian experience increases.
- Females who are on independent skill visas are 25% less mobile than males on the similar visas.

Conclusion

- Recommendations for policymakers: the findings of this study might be useful for policymakers to understand the determinants of occupational mobility of immigrants in Australia. Customized English learning and occupation-specific training programs can be introduced for different demographic groups of immigrants.
- Future studies: the role of English proficiency and age at migration should be further investigated.

Questions?

Appendix A: Occupational Mobility Definitions

The study analyzes the determinants of three outcomes:

- (a) stayer or mover: whether the individual has changed to a different occupation compared to the occupation he/she was employed in the previous observation year, and
- (b) direction: the direction of the change of occupation i.e, upward or downward, conditioning on changing the previous occupation, and
- (c) distance: the distance between the previous occupation and the current occupation of employment, conditioning on changing the previous occupation.

Appendix B: Occupation Classification: Example

1 MANAGERS
- 13 Specialist Managers
  - 133 Construction, Distribution and Production Managers
    - 1331 Construction Managers
    - 1332 Engineering Managers
  - 134 Education, Health and Welfare Services Managers
    - 1341 Child Care Centre Managers
    - 1342 Health and Welfare Services Managers

2 PROFESSIONALS
- 24 Education Professionals
  - 241 School Teachers
    - 2411 Early Childhood (Pre-primary School) Teachers
    - 2412 Primary School Teachers
  - 242 Tertiary Education Teachers
    - 2421 University Lecturers and Tutors
    - 2422 Vocational Education Teachers \Polytechnic Teachers