Intentions and Influences: Foreigners' Residents Relocation Decisions in Japan

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ABSTRACT

This study examines the factors influencing destination selectivity and relocation intentions, focusing on push-pull dynamics such as economic crises, political instability, job opportunities, and living standards. Emphasis is placed on road infrastructure and accessibility, considering immigrants' life stages and prior experiences regarding accessibility in their home countries. Using discrete choice modeling and survey data from foreigners, the research reveals the significance of these factors in shaping relocation decisions. Findings highlight that while road infrastructure and accessibility attract individuals to specific destinations, these characteristics are perceived more as facilitators rather than primary motivations for relocation.

Keywords: Accessibility, Choice Model, Destination, Intention, Relocation.

1. INTRODUCTION

When an individual decides to relocate, several factors influence their decision-making process when choosing a suitable location. There are some factors influencing people's choices that are related to their personal and environmental characteristics, while external factors can have an indirect but substantial effect on them as well. Making decisions about where to relocate mainly stems from accessible urban planning, and sufficient infrastructure in facilitating or hindering migration and resettlement. According to *Everett S. Lee's* "A Theory of Migration" (1966), migrants select locations for settlement or relocation based on maximizing utility in the destination. Accordingly, revealed preferences are essential for understanding the factors that influence an individual's mobility behavior and location choice. One technique is used to study the attractiveness of distinct areas to people who stay and those who move from an area; the difference is created mainly by different facilities and job markets. Through examination of these differences, researchers look for characteristics of attractiveness either favorably or otherwise, as evaluated in many other studies (Bhat & Guo, 2007; Kim, 2005).

Also, recent studies explore several different dimensions of migration such as education, marital status, forced displacements etc. by focusing on a special group of people. for ex-ample, Rodríguez et.al (2023) studied the relationship between academic performance of students in higher education and the decision to migrate and ideet.al (the existence of negative effects associated with the decision to migrate. Similarly, Vieira et.al (2017) investigates the impact of geographical distance between students' home and university on their academic performance. Findings highlight the spatial dimension of higher education outcomes and have implications for the planning and location of universities. In terms of drivers, Selod and Shilpi (2021) deepen the literature of migrations and revealed that migration decisions are influenced by a multitude of factors, and that both the benefits and costs of migration are substantial. According to Louviere et al. (2000), migrants who are satisfied with public facilities are more likely to remain in a particular area when evaluating location preferences. Moreover, Chen & Rosenthal (2008) argue that families' perceived utility is largely determined by the satisfaction they receive from these

facilities, and access to schools, workplaces, and essential services is often of greater importance than other factors. To answer research's objective, we studied how people perceive accessibility to facilities by considering the relevance of education that reveals hidden reasons behinds movements.

The aim of this study is to investigate whether accessibility is regarded as an influential variable in migration processes, alongside drivers of relocation, and to understand the criteria immigrants use to make decisions about movement based on their prior experiences in their country of origin. Additionally, the study focuses on examining migration at various levels, including individual factors (micro and macro) and destination variables (meso), by implementing utility-based approaches. This enables us to identify which factors influence relocation trends, aligning with the framework proposed by Hagen-Zanker (2008).

A significant research gap exists in that most migration studies target specific groups, such as students or native individuals, typically analyzing movement from origin countries to specific destinations without considering future relocations or the evolving long-term intentions of migrants. For example, temporary migration to various countries is often observed when destinations fail to meet immigrants' needs or provide adequate social connections. While studies like those by Rodríguez (2023) highlight certain hidden factors influencing migration decisions, many dimensions remain unexplored. In this study, we address these gaps by examining multiple dimensions of migration, particularly the indirect relationship between education and facilities, along with common factors such as demographic and contextual elements. Furthermore, we broaden the scope to include all immigrants in Japan—a context that is often overlooked due to the country's restrictive immigration policies and social homogeneity. By focusing on immigrants in Japan, we aim to uncover their evolving intentions over time and how these intentions influence their relocation decisions.

2. METHODOLOGY

The estimation model was built based on data collected from an online survey of immigrants in Japan, where the percentage of foreigners is low. First-hand data adds value to the originality of the research; however, since the data is first-hand, we processed it to match it for binary modeling.

This study explores individual decision-making processes using the Latent Class Multinomial Logit model. This method effectively accounts for unobserved differences in preferences by dividing the population into latent classes based on their socio-demographic and economic characteristics. Furthermore, the nested structure of the choice set reflects the correlations among alternatives that are grouped hierarchically, capturing more realistic substitution patterns. The relocation choice process consists of two stages. The "*mobility stage*" is where individuals assess their situation and plan to stay or move, either domestically or internationally. The "*location choice stage*", for those opting for a move, is where they further refine their preferences for certain locations. These stages outline the decision journeys of future movers through below processing:

To incorporate the variables into the utility estimation, we follow a structured approach where each factor contributes to the individual's utility for a given choice, represented as "$Uijs$" in the equation1:

$$Uijs = \beta 0 + \beta_{Age} f(Age_i) + \beta_{gender}(Gender_i) + \beta_{income}(Income_i) +$$

$$\beta_{Social}(social_i) + \beta Facility(facility_i) + \eta i + \epsilon ij \qquad (1)$$

Individuals will choose between staying or moving based on which option maximizes their utility (U_{ijs}), estimated from observable and latent factors. Therefore, the latent interaction term (η_i) captures the unobserved heterogeneity in preferences (Wen et al., 2012), particularly how education influences facility satisfaction. This heterogeneity is inferred from observed choices, consistent with latent variable modeling(equation2).

$$\eta i = \beta_{facility_{eduGraduate}} * \text{FacilityEduGraduate} +$$
$$\beta_{facility_{eduNongraduate}} * \text{FacilityEduNongraduate} \qquad (2)$$

Besides the latent effects that justify adding a specific component to utilities, we also separate the move or stay utility to identify why individuals stay and to differentiate it from why others leave (Table1). By doing so, the model is ensured to capture multiple dimensions (macro, micro, meso) of choices. Thus, to distinguish between options for movers, the utility for moving to a specific "country i" is modeled within nests as(equation3).

$$V_1(i) = \alpha + \beta'X_i + \gamma'^{Z_i} + \delta_{G(i)} + \epsilon_i \qquad (3)$$

In summary, the study adopts a two-class Latent Class Model to analyze individual preferences and behavior in choosing residential locations and traces two groups with different priorities. The alternatives(countries) are modeled under the logit framework. The model incorporates class probabilities and the likelihood of each class in determining the total probability of choice by an individual. Through the Maximum Likelihood, an intricate pattern that could not be defined via observable parts alone captures the selection process.

Table1. Estimating Utility: Three Common Approaches

Utility	Purpose	Key factors
Movers' Utility (U_{ij})	Evaluate destination attractiveness for movers	Hidden preferences, education levels, satisfaction gradients, interactions between factors
Stayers' Utility (U_{ijs})	Assess satisfaction with staying	Age, gender, income, satisfaction, access to facilities, local social ties
Latent Utility	Capture unobserved/indirect effects influencing choices	Hidden preferences, education levels, satisfaction gradients, interactions between factors

3. RESULTS

Pre-Estimation

Demographic (Fig.1) and economic analyses provide information on relocation preferences. Survey reports depict that 58.89% were male, versus 41.11% female. The highest number of respondents were from Iran, followed by 17.72% and 12.66% from Pakistan and India, respectively. The marital status of participants varied quite equally, with 41.43% being single, 40% married, with the rest (18.57%) in different marital states. Tokyo was by far the most named destination for relocation at 52.68%. While 46.43% expressed a desire to relocate, 53.57% preferred to stay in Japan (Fig.3). This study found that younger respondents, particularly those between 18 and 32 years of age (especially 29-year-olds), tended to want to relocate more than older individuals did (Fig.2).
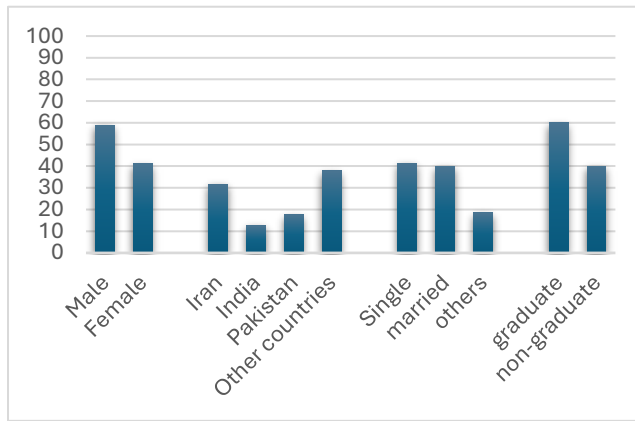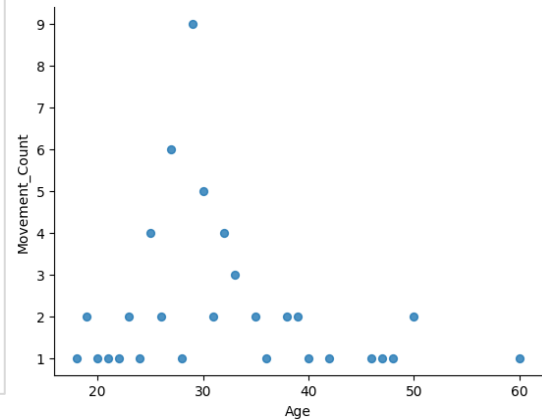
Fig1. Categorical Variable Distributions (%)

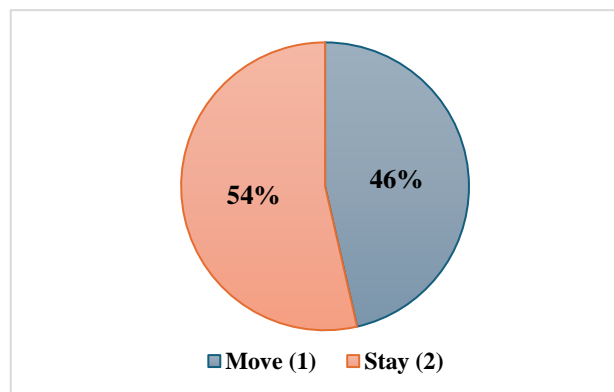
Fig2. Age-Related Variations in Movement

Fig3. Migration Intentions of Survey Respondents

Model estimation Results

The analysis evaluates various factors impacting the likelihood of relocation. Findings (Table.2) suggest that individual characteristics and contextual factors were greatly involved in the way individuals decided to move.

According to the results, Gender does not significantly influence migration decisions (p-values of 0.248 for Class 1 and 0.943 for Class 2). While males slightly outnumber females, the effect is statistically insignificant. Similarly, marital status shows minimal predictive power, with no significant evidence of its impact on migration.

The interaction of education and facility is conducive to relocating, in which educated individuals tend to move more in search of better access that ultimately facilitates quality of life. These criteria work as "pull factors" toward skilled migration (Naylor, 2002). The graduates, particularly Class 1 (Value = 2.54, p-value = 0.0481), appear to be more inclined to move, a trend that is more pronounced with the presence of facilities (facility_Graduate: Value = 2.59, p-value = 0.0433). Thus, non-graduates receive little benefit from the existence of facilities, a contrast that further underscores education as the dominant factor.

in terms of age, showing negative coefficients for individuals below 30 years of age in Class 1 (Value -1.73, p-value < 0.001), while those above 30 years were positively related to migration decisions (Value = 3.29, p-value = 0.00112).

These might relate to career advancement and family concerns. Class 2 yields weak and statistically negligible results for both age classes (p-value = 0.16 for under 30; 0.958 for above 30). Younger adults tend toward schooling and personal development, which can restrict moving due to financial limitations, while seniors care more financially stable and relocate in search of better living standards or jobs. This implies that economic factors are much stronger in attracting adults to relocate.

Additionally, Social network effects, when witnessed with p-values across both Class 1 (2.4, p = 0.455) and Class 2 (0.202, p = 0.887), are insignificant in finding. More impactful are the economic benefits and structural factors that include living costs and education. Weak social ties hardly support relocation, and those group-like professionals and students are less reliant on social ties than family.

Regarding the role of contextual factors such as income, GDP, diaspora, distance, and population. The following findings are concluded, high-GDP regions attract graduates because of better opportunities and a higher quality of life.

Thus, income effects seem statistically insignificant (p-values = 0.659 and 0.114). High GDP apparently presents a positive marginal influence for graduates in Class 1 (Value = 0.374, p-value = 0.0901), while for non-graduates of Class 1, high GDP is shown to correlate negatively to migration (Value = -0.811, p-value = 0.000).

Diaspora networks played a very minimal role, showing insignificant effects for either graduates or non-graduates (p-values of 0.98, 0.777, 0.413, and 0.857). For Class 2, distance is a strong obstacle (Value=-0.261, p-value <0.001), whereas for Class 1 there is weak influence. Also, Population density is critical, as its strong positive correlation for both classes (Class 1: 0.508; Class 2: 0.405) reflects possibilities for jobs and infrastructure, thus making the densely populated places so attractive, though the overcrowding was observed.

Table2. Regression Results for Relocation Choices based on Individuals and contextual characteristics

Variables Name	Class 1				Class 2			
	β	P-Value	Std err	t-test	β	P-Value	Std err	t-test
Gender	2.08	0.24	1.8	1.1	-0.05	0.94	0.80	-0.07
Social Network	2.4	0.45	3.2	0.74	0.2	0.88	1.42	0.14
Marital	-3.07	0.32	3.1	-0.98	0.41	0.82	1.85	0.22
Graduate	*2.54	0.04	1.2	1.98	0.31	0.94	4.8	0.07
Non-Graduate	0.24	0.85	1.3	0.17	0.14	0.99	10.9	0.01
Facility-Graduate	*2.59	0.04	1.2	2.02	0.37	0.89	1.28	0.12
facility_NonGraduate	0.24	0.85	1.3	0.17	0.14	0.99	10.9	0.01
Income	0.28	0.65	0.6	0.44	0.81	0.11	0.51	1.58
GDP_Graduate	0.37	0.09	0.2	1.69	0.09	0.78	0.34	0.27
GDP _ Non-Graduate	*-0.81	(0	0.06	-12.6	*-0.26	0.004	0.09	-2.8
diaspora_Graduate	0.01	0.98	0.46	0.02	0.12	0.77	0.43	0.28
diaspora_NonGraduate	-0.06	0.41	0.07	-0.81	-0.01	0.85	0.09	-0.18
Distance	-0.02	0.72	0.07	-0.35	*-0.26	6.47E-11	0.04	-6.5
Population	0.50	0.001	0.1	3.2	*0.40	0.0007	0.12	3.3
Age (under30)	*-1.73	0.0001	0.46	-3.7	0.43	0.16	0.31	1.4
Age(above30)	*3.29	0.001	1.01	3.2	0.08	0.95	1.55	0.05

Significant results with p<0.05 are Marked by asterisks*.

Comparison of Alternative choices

This section explores how country-specific traits influence migration preferences. "Utility," a key concept in discrete choice studies, reflects a destination's appeal based on factors like social amenities, safety, economic prospects, and quality of life (Table.3).

OECD countries are quite appealing (Value = 1.64, p-value = 5.24E-08) because of the strength of their economy, higher standards of living, and abundant jobs. The low standard error of these estimates (0.302) has enabled one to interpret them reliably and indicates that financial and social aspects critically determine migration decisions. However, in the case of Schengen countries, indeed valued at a marginally negative impact on relocation decisions (Value = -0.414, p-value = 0.414), the high standard deviation means great variability in preferences, perceived cultural or linguistic differences and less attractive economy. At the other hand, English-speaking countries generate significant benefits in relocation decisions (Value = 1.59, p-value = 1.97E-06), with proficiency in the language facilitating smooth integration and opening economic opportunities in English-dominating industries, reducing adjustment costs.

To confirm the model performance and levels of correlation that exist among alternatives within nests, the "gamma" parameter is employed and represents Value = 0.491, p-value = 0 that is quite substantial, with very small uncertainties (Std Err = 0.0486). Statistically, Table 3 describes the likelihood ratio delivered a large statistic (650.38), displaying that the model's performance with additional variables substantially improved. The R-squared value of 0.547 (54.7%) shows that most of the variation in the observed choices is explained by the model. The adjusted R-squared (0.486) gives robust explanatory power while factoring in overfitting.

Table3. Nested Structure of Alternatives (Linguistic Grouping) and Final Report of Model

Nests Name	β	Std err	t-test	p-value
OECD Countries	*1.64	0.30	5.44	5.24E-08
Schengen Countries	-0.41	0.50	-0.81	0.41
English Speaking Countries	*1.59	0.33	4.76	1.97E-06
gamma	*0.49	0.04	10.1	0
Statistical Report of Model				
Init log likelihood	-594.5			
Final log likelihood	-269.3			
Likelihood ratio	650.3			
Rho-square (ρ^2)	0.54			
adjusted R-squared(ρ^2-bar)	0.48			

Significant results with p<0.01 are marked by asterisk*.

4. Conclusion

Current studies mainly explore the characteristics of individuals and destinations by using processed and secondhand data which lead to identical patterns. Also, those studies only target the movements from origin to destination among countries accepting immigrants frequently. We investigate intentions and drivers among immigrants in the second host country (Japan), where the rates of relocation by foreigners are lower than others. Additionally, we conducted a survey and collected firsthand data that needs to be processed before any estimation. Therefore, to meet objectives, we utilize latent variables to reveal hidden interactions between facilities and education that cannot be denoted directly but have crucial impacts on relocation choices.

The findings clearly state that those with higher education can perceive access to facilities more than others and utilize it to improve their life. However, the model estimation determined that this factor is not as influential as others, and people mostly take it into account as a facilitator to reach their maximum benefits in certain locations. Individuals prioritize factors such as age, income, and contextual factors to select the best location, even among educated participants. Furthermore, we found that the age parameter also showed similar results to current studies: younger people are less likely to move because they are not financially stable; however, people over 30 demonstrated better relocation conditions.Yet, it should be noted that some older individuals negatively reject moving since their social bonds and family are strongly tied to their current location.

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