International Labour Organization

Statistics Korea

Case studies in international labour migration statistics

▶ **Measuring international labour migration in the Republic of Korea**

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▶ Contents

▶ Contents

▶ Acknowledgement

▶ Introduction

The purpose of this case study is to assess the suitability of existing national data sources to generate core statistics on international labour migration in the Republic of Korea, aligned with the *ICLS Guidelines Concerning Statistics of International Labour Migration* (2018).

The Guidelines were endorsed by the 20th International Conference of Labour Statisticians (ICLS) in 2018. As the very first set of internationally agreed statistical recommendations on the topic, the main aim of the Guidelines is to provide a basis for the development of appropriate statistical methodologies to capture and collect data on different aspects of international labour migration.

Since the adoption of the 20th ICLS Guidelines, important developments have taken place in closely related international statistical standards, particularly the revision of the 1998 *UN International Recommendations on Statistics on International Migration, Revision 1*, which provided the reference statistical definition of an international migrant. As part of the revision process, in 2021, the United Nations Statistics Commission endorsed a new *Conceptual frameworks and concepts and definitions on international migration,* with the full set of updated UN recommendations expected to become available in 2025. Following these developments, to promote coherence across international statistical standards, in 2023, the ILO prepared draft updated Guidelines for consideration by the 21st ICLS, which called on the ILO to finalize the revision process in consultation with countries and other relevant stakeholders, with a view to publish updated Guidelines by 2025.[1]

Taking as reference these international statistical standards, this case study lists all available official data sources related to international labour migration in Korea and examines which data sources are suitable for measuring the main attributes of international labour migration. The review considers in particular, the types of data sources, responsible authorities, target populations, collected variables, periodicity of data collection, and public accessibility of the statistics.

By applying the main recommendations contained in the revised draft ICLS Guidelines to a wide range of data sources, this study sheds light on the relevance and applicability of the ICLS Guidelines to generate statistics on stocks, flows, and essential labour market characteristics of international migrants and provides comments and recommendations for their future applications in Korea.

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[1] The draft text of the updated Guidelines was submitted by the ILO to the 21st ICLS in October 2023 and can be found in the Annex I of Room Document 17.

▶ International labour migration trends and policies in Korea

Before assessing the different national sources of international labour migration data, this study briefly outlines the main international labour migration trends and policies in Korea. In recent history, Korea has had favourable labour market conditions with relatively low levels of unemployment rate at under 5%. However, the country has undergone profound population aging which is impacting its workforce. Since most Korean youth cohorts are highly educated, Korea have been recently experiencing scarcity in the supply of less-skilled younger workers (OECD, 2019).

In the mid-2000, Korea established a formal labour migration policy for temporary foreign employment under the name of the Employment Permit System. It includes an admission quota system which the supply limit sets below the market demand for foreign workers. Foreign workers under the EPS program come from the 16 eligible countries who can stay for three years (extendable to maximum ten years) in Korea to work in elementary and manual occupations.[2] Under this program, the share of temporary foreign workers have grown, up to 10% of total manufacturing jobs (OECD, 2019).

Traditionally, before 2000, Korea was a country of out migration (Oh et al. 2011), but it has changed and now has become a net migrant receiving country. Between 2000 and 2019, Korea's foreign population grew from less than 1% to about 3.3% of the total population. The COVID-19 pandemic temporarily decreased the total number of migrants and their share of the population in 2020 and 2021. However, by 2022, net migration had rebounded to pre-pandemic levels. In 2023, the record number of registered foreigners, which corresponded to 3.6% of the total population, was reached. The current foreign population mainly consists of migrants on temporary work contracts and those arriving for marriage and family reasons.

▶ **Figure1. Long-term foreigners and percentage of total population in Korea, 1998- 2023**
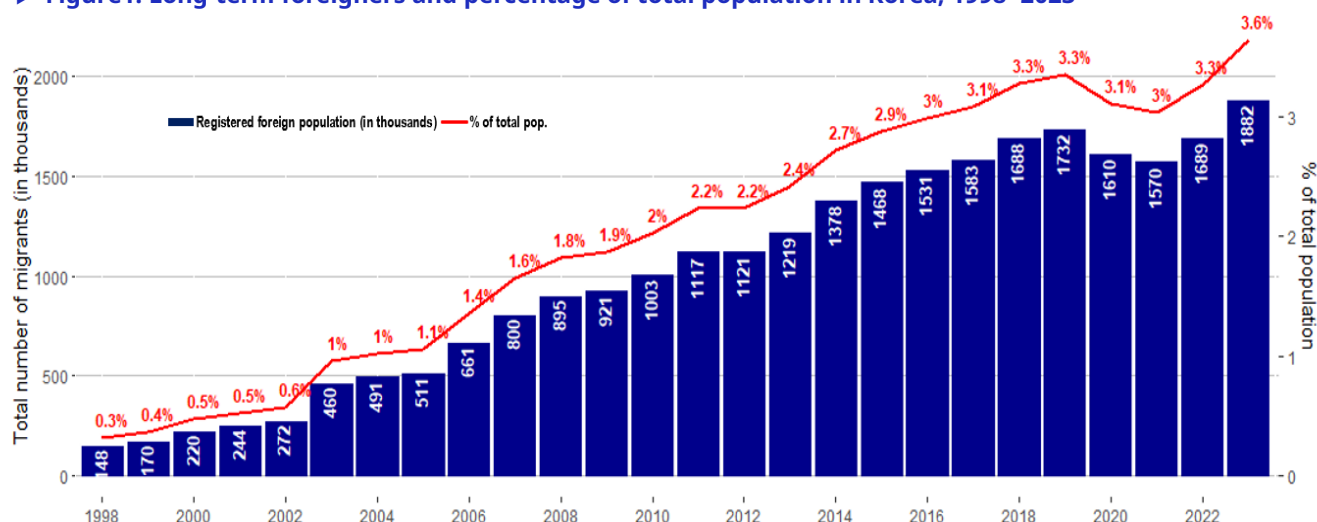
Source: KIS. Korea Immigration Service Statistics, KOSTAT. Population Projections, https://www.index.go.kr/

The information presented in Figure I is derived from data gathered using various sources. For this study, data from the period before the onset of the Covid-19 pandemic (2018) is used to examine the extent to which statistics on international labour migration produced in the Republic of Korea align with the ICLS Guidelines on the topic.

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[2] The EPS is managed and operated by the Korean government without any payments by employers or employees. Candidates for the EPS must pass basic Korean language, physical and capacity tests. After successful completion, the government authorities prepare a list of suitable candidates for work and provide job matching services between the employer and the candidates of EPS worker (OECD, 2019).

▶ Data sources for international labour migration in Korea

Key traditional sources for international migration data

In Korea, key traditional sources for international migration data are the population censuses and administrative records of border-crossing entries and exits (See Table 1). This is also commonly found in other countries. According to the ILO survey on national data sources on international labour migration (Ozel, Popova, and Mehran, 2020), the major data used to estimate the stocks of international migrants by country of birth or citizenship were obtained from population censuses (95% of all 128 responding countries) in most countries, which was followed by administration data (56% of all countries).

Population censuses conducted by Statistics Korea (KOSTAT) have been the most comprehensive source providing continuously updated information for the size, structure, and geographical distribution of international migrants in Korea since 1966. For measuring international migration, many experts agreed that three basic questions should be included in the population censuses: country of citizenship, country of birth, and country of previous residence, either one or five years prior to entry (Thomas, Summers, and Clemens, 2009).

▶ **Table1. International labour migration data sources in Korea**

Title of Statistics	Authority	Data source	Target population	Periodicity	Time coverage
Population Census	Statistics Korea (KOSTAT)	Census	All domestic and foreign residents residing (more than 3 months) in Korean territory as of the time of census	Quin-quennial	1966 -
Statistics of Foreign Residents	Korea Immigration Service (KIS)	Administrative records	Foreigners intending to stay in Korea for more than 90 days after entry.	Monthly	1993 -
Statistics of Arrivals and Departures (SAD)	Korea Immigration Service	Administrative records	All persons arriving and departing Korean territory	Monthly	1960 -
International Migration Statistics (IMS)	Statistics Korea	Administrative records	All migrants entering and leaving Korea more than 90 days	Monthly	2000 -
Foreigners Employment Trend under the EPS (EPS)	Ministry of Employment and Labor (MOEL)	Administrative records	Foreign workers entering Korea through the EPS	Semi-annually	2004 -
Statistics on Foreign Residents by the Local Governments (SFRLG)	Ministry of Public Administration and Security (MOSPA)	Administrative records	Foreign residents, naturalized residents and children with immigrant background	Annual	2006 -

A Survey on the Actual Conditions of Multicultural Families (SACMF)	Ministry of Gender Equality and Family (MOGEF)	Survey	Marriage immigrants and naturalized persons, households and household members	Triennial	2009 -
Survey on Immigrant's Living Conditions and Labor Force (SILCLF)	Statistics Korea & Korea Immigration Service	Survey	Foreigners who are 15 years of age or older who are permanently residing in Korea (more than 90 days) as of the survey reference date	Annual	2012 -

The first two questions are to distinguish international migrants from non-migrants. The last question about the year of arrival is to distinguish characteristics of international migrants in terms of duration of stay (UN Expert Group on Migration Statistics, 2018).

The population censuses in Korea had included these three basic questions for more than several decades, but it was still challenging to clearly paint an overall picture of the foreign population. Until 2005, the Korean census used two different forms of questionnaires for Korean nationals and foreigners. For Korean nationals, 10% of the total population was surveyed using a long-form census questionnaire asking the place of birth and the previous residence, both one year and five years prior to that. For foreigners, on the other hand, the census collected information about their country of citizenship, but asked a relatively limited number of questions compared with those asked to Korean nationals (Yang, 2009).

Because of the use of different census forms according to the respondent's citizenship status, it was not easy to figure out the total number of foreign-citizen population nor the foreign-born population for all residents. Using limited questions made it difficult to calculate headline labour market indicators such as the employment rates of the foreign resident population (Chung and Kim, 2015).

Since 2010, the census has adopted the same form of questionnaire to collect data for both Koreans and foreigners. The questionnaires covered a broad range of items including the person's citizenship at the time of birth, current citizenship, country of birth, first entry time to Korea for residency (if a foreigner), employment status, educational level and so on. After that, KOSTAT has adopted the citizenship classification rather than the place of birth classification as the basis for identifying foreign population (Chung and Kim, 2015).

However, the census still had limitations in terms of the coverage of foreign population. There was a broad difference in the size of the foreign population between census and foreign register of the Korean Immigration Service Statistics. In 2005, only 46.5% of foreigners on the foreign population register were enumerated in the census which increased to 60.3% in 2010 (KOSTAT, 2018a).

Since 2015, KOSTAT has used several administrative sources to broaden the coverage of the foreign population by using data linking techniques. This includes the Statistics of Foreign Residents (known as the foreigner register, the Korea Immigration Service under the Ministry of Justice: KIS), the Statistics of Arrivals and Departures (KIS), and the Population Statistics Based on Resident Registration (known as the Resident Register, the Ministry of Security and Public Administration: MOSPA).

Through data linking, the coverage of census for both Korean nationals and foreigners increased dramatically and KOSTAT could acquire more information that was not available in each separate administrative source (KOSTAT, 2018a).[3] Since KOSTAT secured the right to use data from the administrative system for statistical purposes through revisions of the Statistical Acts in 2007 and 2013, data linking techniques could be applied to improve quality of census data.

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[3] These sources alone are not enough to identify entire international migrants. The foreigner register does not cover naturalized citizens. The Statistics of Arrivals and Departures data are based on the entry and exit events rather than on the individual migrants. The Resident Register does not include undocumented foreigner residents who overstay their visas and does not exclude Korean nationals who reside out of country (for further details, see Table 3).

▶ **Box1. A Combined Census in Korea**

Each year since 2015, KOSTAT has conducted the register-based census to collect data for the short-form questionnaire items (e.g. age, gender, household and housing), which uses 25 sets of administrative data from 14 government agencies, such as resident register, foreign register, building register, family relations register, international arrival and departure records.

For every five years, KOSTAT has conducted a field enumeration for 20 percent of total population to collect long-form questionnaire items, such as educational attainment, commuting time and actual place of work, as it is difficult to obtain these data from administrative data sources.

▶ **Figure 2. Framework for the register-based population and housing census in Korea, 2015**
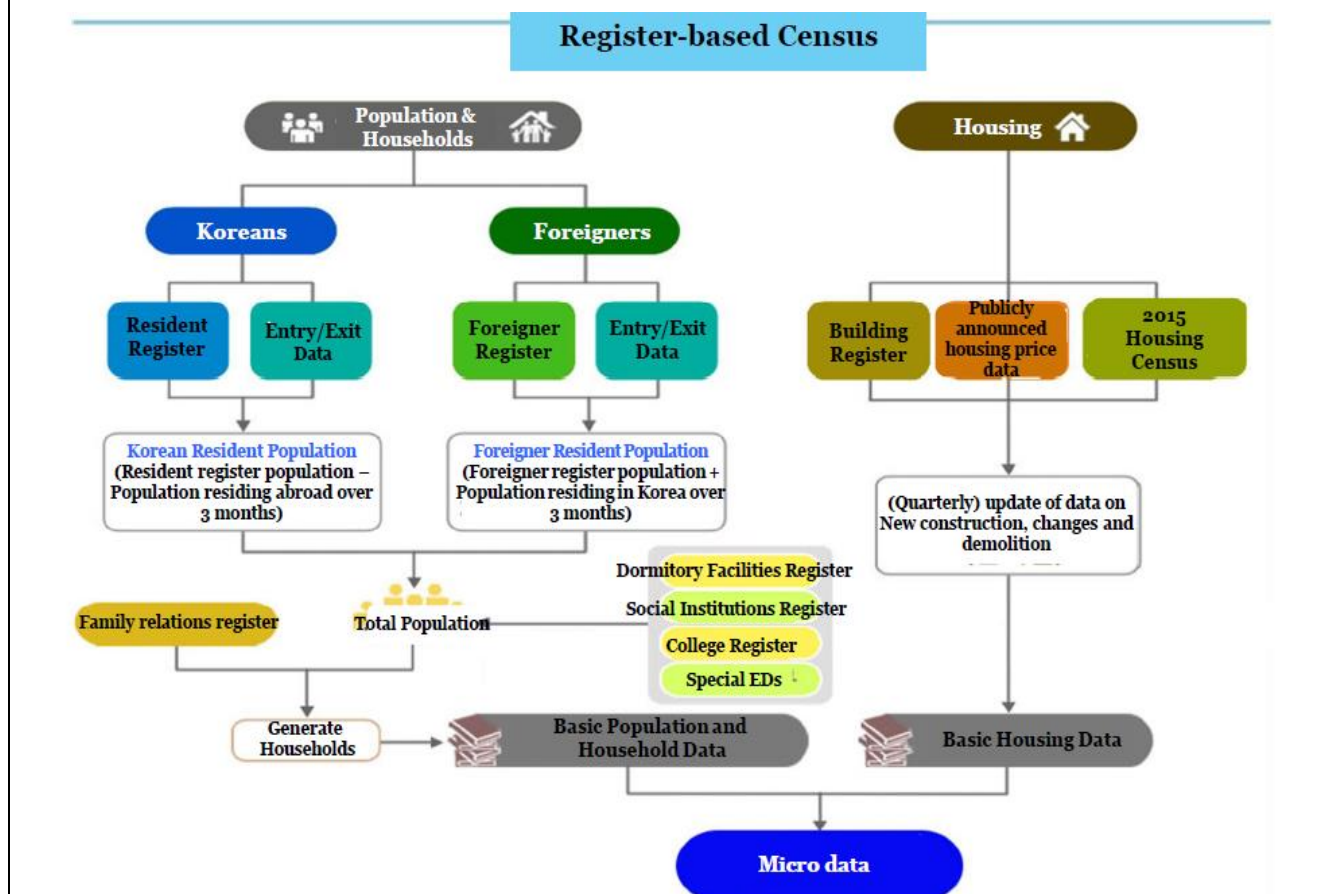
Source: Figure from KOSTAT, 2018a. "Introducing Register-based Census in Korea."

In the 2015 population census, KOSTAT introduced a combined method which combined the use of administrative data on an annual basis and the collection of data for specific variables from a field enumeration on a quinquennial basis.[4] Since then, register-based census data on the foreign population has been available every year with the following information: total foreign population, sex, age, citizenship, and first entry time to Korea for residence. Census data on the foreign population by their educational level, employment status, and household status will be collected at a five-year interval (for further details, see Box 1).

In Korea, administrative data is definitely the most important source for international migration statistics. Korea inherits a good grounding for producing quality administrative data on international entries and exits. This includes in particular the geographical advantage of being a peninsular country limits the extent of irregular arrivals, as well as the robust and established system of resident registration put into place in 1960s.

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[4] According to UNECE *Guidelines on the use of registers and administrative data for population and housing censuses* (2018), a combined census defined as combining the use of administrative data with a limited collection of data from a field enumeration of the population for specific variables.

The Korea Immigration Service (KIS) is in charge of the entire process of international migration from visas to the foreign register. It has released various immigration-related information under the title of *Korea Immigration Service Statistics*. It includes the Statistics of Arrivals and Departures (SAD), the Statistics of Foreign Residents, data about the domestic residency report of foreign national Koreans, illegal foreigner residents, refugees, and so on. Since 1960, the SAD from KIS has published data on the number of border-crossing entries and exits, data by age, sex, nationality, sojourn status and duration of stay (KIS, 2019). KIS has usually released information in a timely manner, such as publishing monthly SAD data one month after the reference month and yearly data with detailed information r six months after the reference year.

Along with globalization, the significance of international migration is growing, because international migration is fundamental to make accurate population estimates and projections for domestic and international planning purposes (Zlotnik, 1997). However, merely recording all movements across border is not enough to meet the needs of the global standards of international migration concept. According to *Conceptual frameworks and concepts and definitions on international migration* (2021) an international migrant refers to "any person who changes his or her country of usual residence." The revised framework suggests that international migration data are to be compiled and released based on the concept of the place of usual residency to consider the duration of stay.

The statistical needs to meet the global standard has led to the development of a new system of migration statistics in Korea. In 2000, KOSTAT began to internally compile the **International Migration Statistics** (IMS) for migrants whose duration of stay is longer than 90 days using border-crossing entry and exit reporting forms of KIS. Since 2004, the IMS has been officially approved and has collected data such as age, sex, visa status, nationality and duration of stay for short-term (more than 90 days) or long-term (more than a year) visits. The IMS has been released monthly with six months delay time after the reference period (KOSTAT, 2020).

Increasing new data sources for international labour migrants

Around 2010, the number of foreign population grew rapidly and reached one million (about 2% of Korean total population). As the demands for international migration data increased, new statistics related to foreigners were introduced rapidly: the Foreigners Employment Trend under the EPS in 2006, the Statistics on Foreigner Residents by the Local Government in 2006, the Economically Active Population Survey including the foreign population sample in 2009, the Survey on the Actual Conditions of Multicultural Families in 2009, and the Foreign Labour Force Population Survey in 2012 (expanded and replaced by Survey on Immigrant's Living Conditions and Labour Force in 2017) (See Table 1).

Statistics of Employment Trend for Foreigners under the EPS (EPS) was officially introduced in 2006. The major aim of these statistics was to provide basic data for managing the supply and demand of foreign workers, especially for setting the level of admission quota of foreign workers under the EPS program. Necessary data came mostly from administrative sources, including from the foreign employment management system. Data are entered at the Local Employment and Labor Offices and collected and verified by an EPS managing agency, the Korea Employment Information Service, and published by the Ministry of Employment and Labor (MOEL). Collected data include the number of foreign workers entering the country through the EPS by industry type and locality.[5] The results of these statistics are released semiannually (MOEL, 2019).

Statistics on Foreigner Residents by the Local Governments (SFRLG) is an important administrative data published by MOSPA. The purpose of the SFRLG is to give basic reference figures to help foreigner resident policies at the local jurisdiction level. This statistics are based on the data from three different registration systems: the foreigner register (KIS), the resident register (MOSPA) and the family register (the Supreme Court).

Target populations are foreign residents, naturalized residents and children with an immigrant background. It excludes short-term resident foreigners (less than 90 days). Collected information includes visa status, citizenship, sex, age and the household situation of the target population. In the foreign resident section, SFRLG classifies

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[5] It includes not only the number of foreign workers under the General Employment Permit System (E-9 visa holders) and the number of issuances of the Working Visit Visa Programme (H-2 visa holders). The E-9 visa is issued to selected workers from 16 eligible countries for staying 3 years in Korea doing simple manual occupations. The H-2 visa allows for 5 years multiple-entry employment visa status to overseas Koreans who are over 25 years old and from China or the former Soviet Union (Oh et al., 2011).

foreign residents into migrant workers, marriage migrants, foreign students, and overseas Koreans and provides their aggregates. Its classifications depend on visa types (MOSPA, 2019a).[6]

Between 2012 and 2016, KOSTAT conducted the Foreigner Labour Force Survey every year for foreigners 15 years of age and older. The objective of this survey is to measure the labour status and working conditions for all foreigners except naturalized Koreans. In 2017, this survey was expanded into the **Survey on Immigrants' Living Conditions and Labour Force (**SILCLF) jointly conducted by KOSTAT and KIS. It covers all immigrants such as permanent foreign residents, marriage migrants, international workers, international students, and naturalized Koreans, but excludes short-term stay (less than 90 days) foreigners because of a lack of information on their contact addresses.

The survey asks immigrants about the realities of their working and living conditions as well as their subjective experiences. The questionnaire of the SILCLF consists of two parts: a basic questionnaire for all immigrants and an additional questionnaire for selected groups which are the low skilled workers (E-9 visa holders), international students, and permanent residents and naturalized Koreans.

Ten different topics are measured in this survey: basic socio-demographic information, employment, residence, education, housing and living conditions, income and consumption, child education, social participation, health and internet usage, and Korean language skill. Three topics (basic sociodemographic information, employment, and residence) are asked about every year, while other topics are measured every two years (KOSTAT, 2019c).

Emerging statistics on family migration, especially of multicultural families, are also available since 2003 following the rapid increase of international marriages in Korea. Although the main focus of these statistics is not labour, they are good sources for understanding the work and social life of international migrants in Korea. The **Survey on the Actual Conditions of Multicultural Families** (SACMF) by the Ministry of Gender Equality & Family (MOGEF) is one of those cases. The target population of this survey are marriage immigrants, naturalized persons, and their household members. This survey asks about family relations and family life, socio-economic characteristics of immigrants (e.g. age, sex, country of birth, citizenship, level of education, housing status and so on) and their work related status (e.g. employment, occupation, problems in trying to get a job and so on).

There are two major forms of family-linked migration: family reunification and family formation through the migration of a spouse (González Ferrer, Amparo, 2006 ; OECD, 2017)[7]. Under the EPS program of Korea, which does not allow for family reunification during the work permit duration (OECD, 2019), family formation would be the major inducer of family-linked migration. Since the social inclusion of foreign spouses married with Korean nationals and their children is one of the major concerns in Korean family policy, there is an increasing need for statistical data on multi-cultural families.

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[6] In SFRLG, migrant workers are defined as those who have a visa status of an industrial trainee (D3), personnel of special qualifications (e.g. professors (E1-7, E9-10), and F4 visa holders (MOSPA. 2019a).

[7] According to OECD, migration for family formation means that a resident national marries a foreigner for admission or for status change. Family reunification is defined as family members who migrate after the arrival of a principal migrant who sponsors their admission (OECD, 2017).

▶ Measuring international labour migration in Korea according to the 20th ICLS Guidelines

The primary objective of the ICLS Guidelines is promote the production of stock and flow measures of different priority groups of international migrant workers as well as workers in temporary labour mobility, taking into account their relevance in the national context. Both stocks and flows are the most important basic measures in migration data. According to the draft revised ICLS guidelines, the stock of migrant workers is defined as "the size of a specified population group at a single point in time." On the other hand, the labour migration flow refers to "the size and direction of movements of persons across international borders for labour related reasons over a particular period" (ILO, 2023).

Stocks of international migrant workers

According to the above-mentioned international labour migration related official statistics in Korea, three sources can be considered to produce a stock measure of international migrant workers: the population census, the foreigner register, and the survey on immigrants' living conditions and labour force. Although there are coverage limitations when using the Domestic residency report of foreign national Koreans and the EPS as stock data sources, they are included in Table 2 to illustrate the size of each specific migrant groups covered by these sources.

▶ **Table 2. Stock of international migrants and international migrant workers by data source, circa 2018.**

2018	Census (register based)[1]	Foreigner Register[2]	SILCLF[3]	Domestic Residency Report of Foreign National Koreans[2]	EPS[4]
Reference date	November 1	December 31	May 15	December 31	December 31
Total foreign population	1,651,561	1,246,626	NA	441,107	NA
Total foreigners 15 years and older	1,588,634	1,177,327	1,300,800	NA	NA
Total foreign labour migrants	NA	*(584,140)*	929,100	NA	222,374

Note 1: The figure in parentheses is estimated by this study according to the work-related visa type classifications of the International Organization for Migration (Oh et al., 2015). It includes intra-company transfer work (D-7), corporate/foreign investor (D-8), international trade (D-9), jobseeker (D-10), professor (E-1), foreign language instructor (E-2), researcher (E-3), technical instructor/technician (E-4), professional (E-5), artist & athlete (E-6), foreign national of special ability (E-7), non-professional (E-9), working holiday-maker (H-1), and working visit (H-2) visa holders.

Source: [1] KOSTAT. 2019a. Population Census 2018, [2] KIS. 2019. Korea Immigration Service Statistics 2018, [3] KOSTAT. 2018c. Survey on Immigrants' Living Conditions and Labour Force 2018, [4] MOEL. 2018. Statistics for Foreigners Employment Trend under the EPS 2018.

In Table 2, the census counts of the total foreign population in 2018 was 1,651,561 and the count of the foreigner register was 1,246,626. Although the foreigner register should include all foreigners, Koreans with a foreign nationality have not been included in the foreigner register under *the Act on the Immigration and Legal Status of*

Overseas Koreans (2000).[8] If the number of foreign Korean nationals from domestic residency report was added in the foreigner register count, the total foreign population count could actually be 1,687,733. The percentage disparity between the census and the foreigner register was 2.1% (36,172 persons).

The register-based census is usually conducted based on the resident register and foreign register, but there are differences in concepts and definitions of the resident population and in the reference dates among them. In Table 3, for the census, a resident is defined as a person who has resided in Korean territory for the past three months or more, or a person who intends to live in Korea for the next three months. In the census, the concept of usual residence is the main principle in determining whether people should be counted or not regardless of their citizenship(s) (KOSTAT, 2018b).

▶ **Table 3. Differences in the definitions and coverages of resident population among census, resident register, and foreign register in Korea**

Type of Data	Authority	Definition of Resident	Population coverage			
			Korean Nationals (including naturalized)		Foreigners	
			Within Korea	Out of Korea	Within Korea	Out of Korea
Population Census	KOSTAT	A person who has resided in Korean territory for the past three months or more, or a person who intends to live in Korea for the next three months regardless of nationality.	√		√	
Resident Register	MOSPA	Those who have an address or residence (dwelling) in the jurisdiction for the purpose of residence for 30 days or more.	√	√ (e.g. students, temporary job related movers)		
Foreigner Register	KIS	Foreigners intending to stay in Korea for more than 90 days after entry.			√ (excluding Koreans with foreign nationalities)	√

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[8] According to this act, Koreans with a foreign nationality who enter Korea with the status of sojourn as overseas Koreans (e.g. F-4 visa holder) may decide to reside in Korea and should report their Korean address. It is called the Domestic Residency Report of Foreign National Koreans. It is not included in the foreigner register.

▶ **Table 4. Differences in counting a resident population between the register-based census and the resident register in Korea, 2015 (population in ten thousands)**

2015	Census (register based)[1]	Resident/ Foreigner Registers	Difference	Main Reasons for the Differences
Total	5,107	5,297	-190	
Korean	4,971	5,150	-179	Koreans residing abroad (-177)
Foreigner (including Koreans with foreign nationalities	137	147	-10	Registered foreigners residing abroad (-282) and illegally staying foreigners (+127)

Source: KOSTAT. 2018b. Population Census: Statistical Information Report for User.

According to *the Immigration Act*, foreigners intending to stay in Korea for more than 90 days after entry should register. Because registers are not developed for statistical purposes, the coverage of the foreigner register has some limitations, such as missing foreign residents who overstay their visas and registered foreigners who are currently residing outside of Korea.

The same kind of coverage problems concerning the residency rule of the census are observed in Korean category as well (see Table 4). In 2015, the total population in the census (5,107 thousand) was smaller than the sum of registered population (5,297 thousand) in the resident and foreigner registers by 190 thousand. The census count of the foreign population was smaller (-10 thousand) than the foreigner register count which included Korean foreign nationals.

This was mainly due to registered persons currently residing out of country. The OECD, in *the International Migration Outlook,* pointed out the same kind of over-counting tendency of population registers: "In population registers, departures tend to be less well recorded than arrivals. Indeed, the emigrant who plans to return to the host country in the future may be reluctant to inform about his departure to avoid losing rights related to the presence on the register." (OECD 2018, p.294).

To solve the coverage problem in the population census, KOSTAT has constructed a statistical register by using integrated data from various sources. Table 5 shows how the statistical foreigner register is constructed by linking three data sources: the foreigner register, the domestic residency report of Koreans with a foreign nationality and SAD.

After integrating these three sources, a series of rules are applied to check which records refer to the resident population. Under-counted foreigners who should have been counted are added in the census: foreigners staying on a irregular situation (+127 thousand), foreign arrivals (stayed more than 3 months) who were previously registered in the foreigner register but not in the current year (+106 thousand), and newly registered foreigners within three months after the census reference day (+21 thousand).

▶ **Table 5. Calculation of the stock of international migrants, Korea 2015: Reconciliation of data between the Population census and foreign register**

	Population Census 2015	Number		Foreign Register 2015	Number
1	Total[4]	1,371,841	1	Total[1]	1,149,484
2			2	Koreans with foreign nationalities[2]	318,910
3			3	Foreigners staying in an irregular situation[3]	127,118
4			4	Foreign arrivals (stayed more than 3 months) previously in foreign register but not in this year[3], [1]	106,724
5			5	Foreigners arriving within 3 months after previous census reference day[3],[1]	21,450
6			6	Registered foreigners who were outside of Korea for 3 months[3]	-282,140
7			7	Duplicate records in the census, foreign register, and SAD[1),3),4)]	-69,705
8			8	Total = 1+2+3+4+5-6-7	1,371,841
9	Balancing item = 1,371,841-1,371,841	0	9		

Note 1:[1] Foreign register; [2] Domestic residency report of foreign national Koreans; [3] Statistics of Arrivals and Departures; [4] Population census.

Note 2: This reconciliation table approach was originally devised by Mehran (2020).

Source: KOSTAT. 2018b. Population Census: Statistical Information Report for User.

On the other hand, over-counted foreigners who should have not been counted are removed from the statistical foreigner register: registered foreigners who were out of Korea for three months (-282 thousand) and duplicate records across the census, foreign register, and SAD (-69 thousand) (KOSTA. 2018). In addition to improved coverage, the use of administrative data in the census contributed to increasing the periodicity of census results. Since 2015, the census has produced foreign population figures every year.

Let's examine the coverage of foreign labour force population more closely. The target population of SILCLF is foreigners 15 years and older who are permanently residing in Korea. SILCLF uses the same residency rules as the population census for its survey. It uses the same three data sources (the foreigner register, the domestic residency report of foreign national Koreans, and SAD) as a sample frame. However, the survey scope of SILCLF excludes foreigners staying in an irregular situation with the types of visa for short-term visits because of a lack of contact address. Diplomats and foreign government officials (A type visa holders) are not included in the survey (KOSTAT, 2019c). This is the main reason that the total number of foreigners 15 years and older in SILCLF is smaller than the census count (1.3 million and 1.59 million respectively).

▶ **Table 6. Calculation of the stock of international migrants aged 15 years and older, Korea 2018: Reconciliation of data between the Survey on Immigrants' Living Conditions and Labour Force and the Population Census**

	SILCLF 2018 (Reference date: May 15th)	**Number**		**Population Census 2018** (Reference date: November 1st)	**Number**
1	Total working age foreign population (in May)[1],	1,300,752	1	Total (all ages) [3]	1,651,561
2	Foreigners staying in an irregular situation (in May)[2]	+225,784	2	Working age foreign population (age 15+) [3]	1,588,634
3	Foreigners not included in the survey scope (A1, A2, A3 visa type holders)[2]	+3,934	3	Working age population ratio to total population	0.962
4	Total= 1 + 2	1,530,470	4	Foreign population decreased by net migration for 5.5 months (Nov. 1 to May 15) [4]	- 67,695
5			5	Working age foreign population decreased = 4*5	- 65,123
6			6	Total working age foreign population (in May) = 2-4	1,523,511
7	Balancing item = 1,530,470 - 1,523,511	6,959	7		

Note:[1] Survey on Immigrants' Living Conditions and Labour Force, [2] Domestic residency report of foreign national Koreans [3] Statistics of Arrivals and Departures, [4] Population Census, [5] International Migration Statistics.

According to SILCLF, the number of surveyed foreign population age 15 and older was 1.3 million in May 2018. In the SAD in the same month, the count for foreigners staying in an irregular situation was 225 thousand, and A type visa holders was less than four thousand. The estimated total number of the foreign population at working age should be 1.53 million in total.

Another advantage of using different sources for measuring migration is that it can be used to assess the coverage of the survey. How to assess the target population coverage of SILCLF by using the census is shown in Table 6A. Major differences between the target populations of SILCLF and the Population Census for foreigners are their reference dates and age groups. Based on the detailed 2018 Census data, this study could compare the number of SILCLF to an indirect estimate of the census count by measuring the change of population between the two reference dates.

An indirect estimation process for the counts of foreigners on May 15, the reference date of 2018 SILCLF, is as follows: First, in the 2018 Census, the number of foreign population age 15 and older was 1.59 million on November 1, which was the reference date of the census. The ratio of foreign population age 15 and older to all ages was 0.962.

Second, the total foreign population in May 15 would be decremented by foreign net migration figures from International Migration Statistics over five and a half months from the census date on November 1 (-67,695). Next, the number of age-15-and-older foreign population could be estimated by multiplying the total foreign population

in May by 0.962. As a result, the indirectly estimated total foreign working age population in May is 1.52 million. The difference of total foreigners between SILCLF and the Population Census is 6,959 (or less than 0.4 percent)[9]. It seems that the target population of SILCLF was covered well since these two statistics produce results that are fairly consistent.

A main advantage of SILCLF is that it provides rich information about the employment and unemployment of foreign labour migrants. The draft revised ICLS Guidelines (2023) recommend producing three core indicators of international migrant workers: the labour force participation rate, employment-to population ratio, and unemployment rate. To calculate these core indicators of international migrant workers, it is crucial to measure the stock of international working age migrants (denominator) and both the employed and unemployed international migrants (nominator). SILCLF provides this information which is not normally available from other statistical sources.

One can see from Figure 3, immigrants were actively involved in labour market in Korea. In 2018, there were 929 thousand foreigners in the labour force, comprising 3.3 percent of the total labour force in Korea (KOSTAT, 2018c, 2018d). Foreigners were more likely to participate in the labour force compared to the total population (71.4 % compared with 63.9 %) and showed slightly higher unemployment rates compared to the total population (4.0 % compared with 4.8 %).

▶ **Figure 3. Core indicators of labour market for total & foreign population in Korea, 2018 May: Economically Active Population Survey & the Survey on Immigrants' Living Conditions and Labour Force**
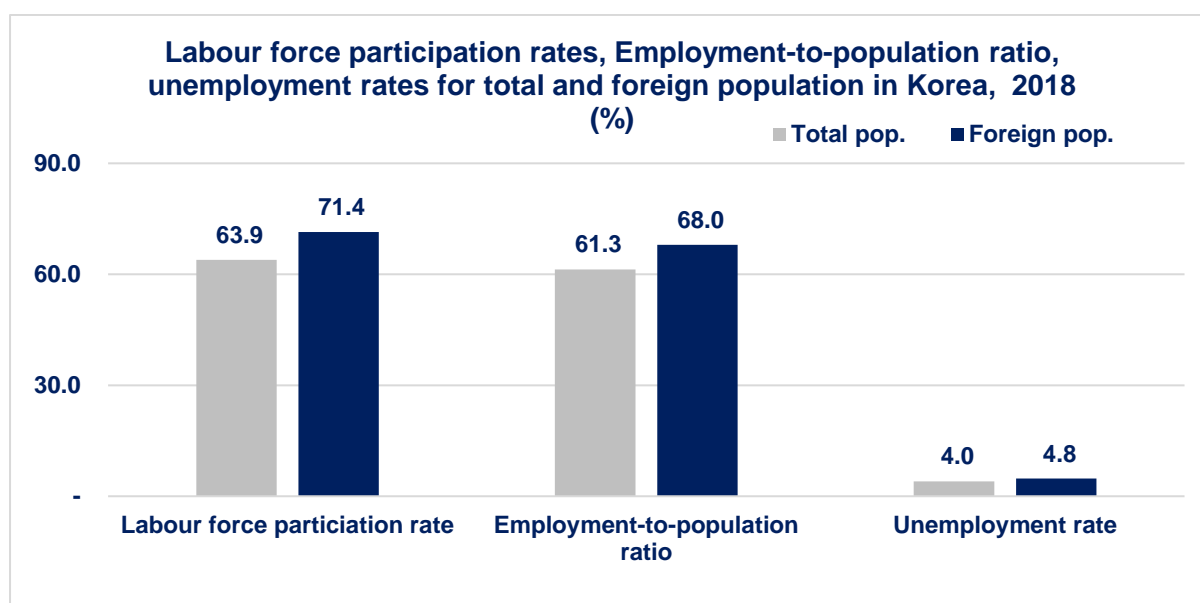
Source: KOSTAT. 2018c. Survey on Immigrants' Living Conditions and Labour Force 2018, KOSTAT, 2018 the Economically Active Population Survey, May.

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[9] Instead of using observed net migration figures, one may apply the monthly arithmetic mean population changes between November 1 and May 15 to the indirect estimation process. Because annual foreign population increase between 2017 and 2018 was 172,314, or 14,359.5 per month according to the census, working age foreign population decreased for 5.5 months could be -75,976. According to this calculation, the difference of total foreigners between SILCLF and the census is 17,812 (1.1% of total).

▶ **Figure 4. Core indicators of international migrants by sex in Korea, 2018: the Survey on Immigrants' Living Conditions and Labour Force**

Labour force participation rate, Employment-to-population ratio, unmeployment rate by sex for foreing population in Korea 2018 (%)
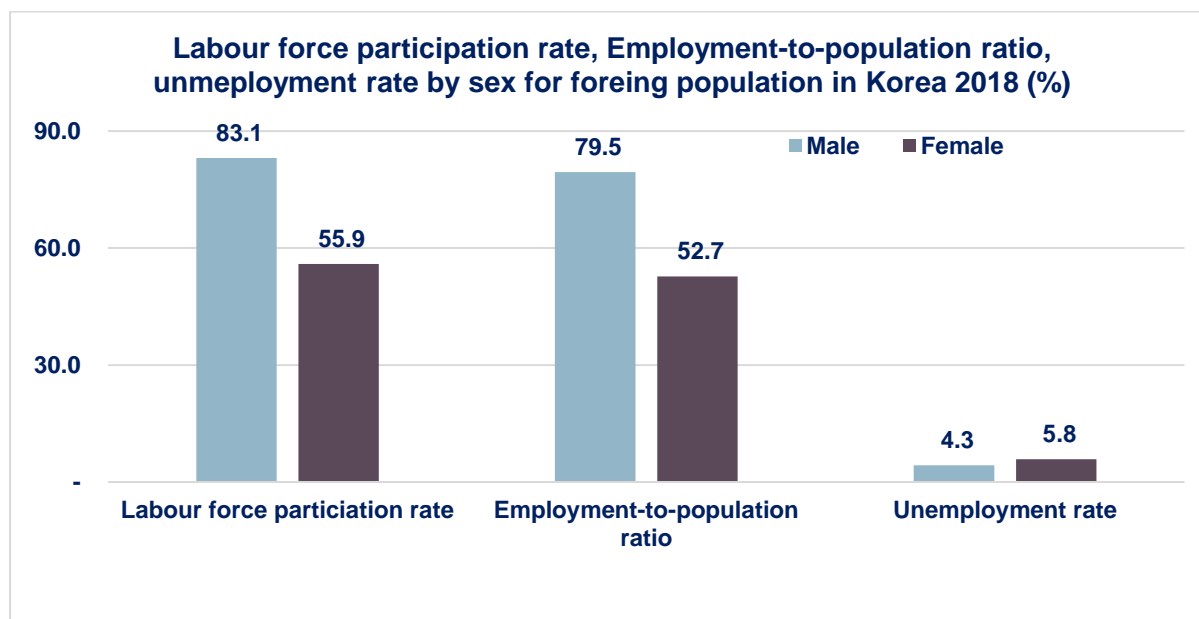
Source: KOSTAT. 2018c. Survey on Immigrants' Living Conditions and Labour Force 2018

Among immigrants, their labor market outcomes varied by sex (See Figure 4). The labour force participation rate for foreign men was 83.1%, much higher than the figure for foreign women, at 55.9%. Although there was a significant regional variation, in globally 2019, labour force participation rates of male immigrants were 17.7 percentage point higher than those of female immigrants (77.5 % and 59.8% respectively) according to *Global Estimates on International Migrant Workers* (ILO, 2021). The gender gap of labour force participation rates between immigrants in Korea (27.2 percentage point) was more than two times higher than that of global average. This may reflect the fact that about one out for five female immigrants arrived for marriage reasons. Marriage migrants accounted for 19 % of total female foreign population (MOSPA, 2019b). They migrated mainly for family reasons rather than employment.

In summary, as a primary means for measuring the total foreign population stock, the census in Korea seems to meet a high-quality standard, covering migrants in irregular situations as well. However, the census provides detailed labour market information about foreigners only at five-year intervals. As another measure of estimating the size of international migrant workers, the foreigner register has advantages of being updated quickly and providing migration characteristics information such as visa types. However, it is vulnerable to the underreporting emigration.

SILCLF could be the most appropriate source to assess international labour migration stock and to produce the core recommended labour market indicators. Even though it has a methodological weakness of excluding migrants in irregular situations, this exclusion may not be seen as a serious problem. It is possible to indirectly estimate the magnitude of foreign population in Korea by comparing different statistical sources such as SAD and the census.

Flows of international migrant workers

According to IOM (2020), at the global level, the comparable data for flows of international migrants are much less available than those for stocks of international migrants. IOM took the *International Migration Flows to and from Selected Countries* published by the UN (2015) as example. It included only 45 countries which have relatively complete sets of flows of international migrants due to variations in the definitions of residence and duration of stay among countries. It is because "Migrant stocks represent a static measure, while flows represent a dynamic measure of the migration process. For this reason, inflows and outflows are considerably more difficult to track than stocks." (U.S. Census Bureau. 2019. p.1).

Korea's international migration flows data are mainly compiled from border collection systems, unlike in many other OECD countries using a population register or a resident permit system (Lemaître, 2005). There are two major statistics to capture the number of inflows and outflows in Korea: the SAD and IMS. Although these statistics are

derived from the same administration data source of border entry and exit, they use different definitions and produce different figures of international migration flows.

International migration flows data derived from border collection data have the merit of reflecting actual moves in terms of the timing and place of entries and exits. However, border collection data is rarely used as a source of international migration flow data (UN, 2017) because the continuous recording of all movements in and out of a national territory is not an easy task in many regions in the world.

Because of Korea's unique geography as a peninsula and established robust resident registration system with good IT infrastructure, border collection data can be used as the most effective source for international migration flow data. Border collection data in Korea is mainly based on the legal documents such as passports, visas, and arrival and departure cards (collecting departure cards has been discontinued since 2006).

According to the SAD, in 2018, the number of foreign international arrivals to Korea was 15.6 million and those of foreign departures was 15.4 million (See Table 6). The year 2018 recorded the second largest number of both foreign arrivals and departures in Korea since 1960. For this year, about four out of five foreign arrivals (79.4%) were temporary visa holders such as Visa exemption (B-1), Tourist/transit (B-2), and Short-term visit (C-3). Work related visa holders comprised only 4% of total foreign arrivals (KIS, 2019).

However, figures from the SAD should be interpreted as the number of movements rather than the number of migrants. A movement record captures arrival and departure records of all movers in and out of Korea, but it does not distinguish international migrants from visitors in terms of actual duration of stay. On the other hand, the IMS defines international migrants as 'migrants entering (or leaving) and continuously residing in Korea (or overseas) for more than 90 days'.

▶ **Table 6. The flow of international migrant workers in Korea by data source, 2018**

2018	**International Migration Statistics (IMS)**[1]	**Statistics of Arrivals and Departures (SAD)**[2]
Target population	All migrants entering and leaving Korea more than 90 days	All persons arriving and departing Korean territory
Source of data	Border crossing entries and exits data (KIS)	
Inflow of foreigners	495,079	15,630,522
Outflow of foreigners	365,117	15,418,228
Inflow of foreign labour migrants	125,866	*(619,138)*
Outflow of foreign labour migrants	NA (Collecting departure cards discontinued in 2006)	

Note 1: In the IMS, KOSTAT provides inflows data on foreign migrants disaggregated by visa type at the point of entry into Korea. Work-related visa type classifications of the IMS is similar to those of the IOM in Table 2, but the classifications include more visa types such as C4 (short-term working), D3 (industrial trainee) and E10 (maritime-crew).

Note 2: The figure in parentheses is estimated by this study according to the IMS work-related visa type classifications for the purpose of comparing the IMS and SAD.

Source: [1] KOSTAT. 2019b. International Migration Statistics 2018, [2] KIS. 2019. Korea Immigration Service Statistics 2018.

▶ **Figure 5. Inflows of foreign population by visa type in Korea, 2018**

Source: Graph from KOSTAT. 2019b. International Migration Statistics 2018.

This definition may seem straightforward, but it involves methodologically complicated procedures especially when using border collection data. As the UN (2017) pointed out, statistics derived from border collection rarely provide a good measure of international migration flows without a well-established system for calculating the duration of stay that can provide matching records of inflows and outflows. To distinguish international migrants from general visitors, KOSTAT developed a new statistical data matching system for the IMS. This system uses a record linkage technique which links data between inflows and outflows.

According to the IMS, in 2018, there were 495 thousand foreign immigrants who arrived from abroad to Korea for a stay longer than 3 months and 365 thousand emigrants who departed Korea. This resulted in a positive net migration of 30 thousand foreigners. The total inflow of foreign labour migrants amounted to about 126 thousand in terms of their visa type. In other words, one out of four foreign international migrants (25.4%) was a work-related visa type holder in 2018 (See Figure 5).

International migrant workers in Korea are predominantly male. Among all foreign immigrants, the sex ratio was 118.5 males per 100 females, however the ratio for among immigrant workers was 277.3. Nearly two out of five (37.6%) labour-related migrants came from China (KOSTAT, 2019b).

In summary, the IMS seems to be an apt source for international labour migration flow statistics since it more closely represents the concept of migration as change in the country of usual residence, and reflects actual moves in terms of the timing and place of entries and exits. The IMS provides rich information on foreign inflows related to labour (size, age, sex, type of visa, etc.). Although it can no longer provide the same level of information after the discontinuation of the departure card reporting in 2006.

Characteristics of international labour migrants

To get a better understanding of the labour migration process and its consequences, the draft revised ICLS Guidelines (2023) highlight a number of priority data collection items as part of national programmes of statistics of international labour migration. To characterise international migrant workers, the Guidelines recommend capturing information on the socio-demographic characteristics of migrants, their migration events, and their work characteristics.

Table 7, lists 24 recommended data collection items drawn from the 20th ICLS Guidelines. Of these, the first ten items are recommended to capture the socio-demographic characteristics of international migrants. They include sex, age, marital status, level of education, type of living quarters, country of birth, country of citizenship, country of usual residence, previous country of usual residence, and language proficiency.

The next five items are recommended to characterise their migration trip: purpose of migration, type of visa, type of migration (e.g. permanent or temporary), duration of stay, and any restriction in the right to residence.

Lastly, nine items are prioritized to characterize migrant's labour market engagement. These are labour force status, branch of economic activity, occupation, status in employment, working time, duration of employment, remittances sent, social security entitlement, and any restrictions of the right to employment (ILO, 2018).

▶ **Table 7. Available variables of international labour migration data sources in Korea**

Recommended main items in the ILO Guidelines		Census (register -based)[1]	Census (20% of sample)[1]	SAD[2]	IMS[3]	SILCLF[4]	SFRLG[5]	SACMF[6]
Socio-demo	Sex	√	√	√	√	√	√	√
	Age	√	√	√	√	√	√	√
	Marital status		√			√		√
	Level of education		√			√		√
	Type of living quarters		√			√		√
	Country of birth		√			√		√
	Country of citizenship	√	√	√	√	√	√	√
	Country of usual residence							
	Country of last usual residence							
	Proficiency					√		√
Migration	Purpose of migration			√	√	√		
	Type of visa			√	√	√	√	
	Type of migration			√	√	√		
	Duration of stay			√	√	√	√	√
	Any restriction in the right to residence					√		
Work	Labour force status		√			√	√	√
	Branch of economic activity					√		√
	Occupation		√			√		√
	Status in employment					√		√
	Working time					√		
	Duration of employment					√		
	Remittances sent					√		
	Social security entitlement					√		√
	Any restrictions of the right to employment					√		√

Source: [1] KOSTAT. 2018b. Population Census: Statistical Information Report for User, [2] KIS. 2019. Korea Immigration Service Statistics 2018, [3] KOSTAT. 2019b. International Migration Statistics 2018, [4] KOSTAT. 2018c. Survey on Immigrants' Living Conditions and Labour Force 2018, [5] MOSPA. 2019a. Statistics on Foreign Residents by the Local Governments: Statistical Information Report for User, [6] MOGEF. 2015. The Survey on the Actual Conditions of Multicultural Families: Statistical Information Report for User.

The draft revised ICLS Guidelines (2023) have further integrated other data collection items that can contribute to enriching the information available to shed light on the situation if international migrant workers and their working conditions, as needed to inform decision making. These data collection items are the type of employment, formal/informal nature of the job, and recruitment costs to support the analysis of different priority groups based on their employment characteristics and working conditions.

Assessment results of whether the core items suggested by the ICLS Guidelines are included in the six Korean international labour migration data sources in question are shown in Table 7. All six sources include information items about sex, age, and country of citizenship. As international migration data sources, these three questions are very essential.[10] This is because the last question allows the identification of foreign citizens, the reference criterion used in Korea to define international migrants, and the first two questions provides for the age and sex composition of international migrants.

One can tell from Table 7 that stock statistics (censuses and surveys) are well suited for collecting socio-demographic items, while flow statistics (administrative statistics) are good for recording characteristics of the international migration process. However, to enhance our understanding about the labour market characteristics of international migrants, specialized surveys for immigrants is needed (such as the S ILC LF and the Survey on the Actual Conditions of Multicultural Families). These specialized migration surveys can help provide information about the situation of international migrants and their integration into Korean society and economy.

The results of this comprehensive review of the international labour migration data sources in Korea, following the main recommendations contained in the ICLS Guidelines, indicate that the SILCLF provides the best source for identifying international migrant workers and their characteristics. This sources also includes recommended core items for analysing the size, distribution and characteristics of the foreign workers, as well as their migration process and the level of integration into Korean society and economy.

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[10] In "Migrants Count" (2009), Thomas, Summers, and Clemens, argued the first step of the five practical steps toward better migration data are as follows: "Ask three basic questions on every population census—about country of citizenship, country of birth, and country of previous residence—then publish cross-tabulations of this information by age and sex."(p.2) This does not apply for population censuses only, this applies for any other surveys and administrative records as migration data sources.

▶ Summary and Concluding Remarks

The purpose of the ICLS Guidelines *Concerning Statistics of International Labour Migration* is to assist the development of national statistical systems to provide users with internationally comparable statistics of high quality on international labour migration. Following these Guidelines, this study reviewed existing Korean statistics on labour migration flows and stocks and assessed the relevance, validity, and quality of six major sources of international migration data.

According to the assessment results, statistics on international migration flows and stocks in Korea are relatively complete, suitable for measuring the main attributes of international labour migration, and accessible to the public.

The census is the primary data source for measuring the total foreign population stock in Korea. Since 2010, it has increased the comparability of census results by asking the same questions for everyone regardless of their citizenship. By combining census and administrative data, the coverage of censuses has been broadened to enable anyone who resides in Korea to be surveyed regardless of one's registration status. As a specialized survey for immigrants, SILCLF provides rich information on characterizing the foreigner's migration process, their work and life. The IMS seems to be the most effective source for statistics on migration flows derived from border entry and exit data fitted into the concept of permanent migration.

Of course, it is undeniable that in the background of producing high quality international labour force migration data sources in Korea, there were geographic advantages of being a peninsula state and having a well-established institutional infrastructure called a resident registration system. However, it's worth noting that the remarkable development of Korea's international migration statistics became visible only after 2000. There were three possible reasons for this change: 1) the increased demand for international migration statistics attributed to growing foreign population in Korea, 2) KOSTAT's established right to use of administrative data for statistical purposes through revisions of the Statistical Acts to improve quality of official statistics, and 3) the methodological development of integrating different data sources for the purposes of measuring international migration.

Finally, a limitation of this study should be noted. The scope of this study's assessment is limited only to official statistics measuring international labour migration. According to the ICLS Guidelines, statistics of international labour migration and temporary labour mobility cover several priority groups and measures, including stocks of immigrant workers, emigrant workers, returned international migrant workers, residents working abroad, and non-residents workers, and flows of for-work migrants, for work non-residents, and for-work residents. As the first case study of applying the ICLS Guidelines in Korea, this study mainly focused on international migrants who are usual residents, that is immigrant workers, because they represent the majority of labour migration in Korea. The focus of future work should extend to returning migrants and other groups not mentioned in this study.

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