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M.S Dissertation in Engineering

**ICTs for Integration of Immigrants:
Case studies from South Korea**

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Graduate School of Seoul National University

Technology Management, Economics, and Policy Program

ENKHTUYA SESEER

ICTs for Integration of Immigrants: Case studies from South Korea

지도교수 황준석

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Enkhtuya Seseer

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2015년 6월

위원장 김 연 배 (인)

부위원장 황 준 석 (인)

위원 Shisir Manandhar (인)

Abstract

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Enkhtuya Seseer

Technology Management, Economics, and Policy Program

College of Engineering

Seoul National University

In 2013, 232 million people worldwide lived in places other than their place of birth. People migrate for many different reasons such as economic, social, political, or environmental reasons. Compared to a time when one letter or package could take months to arrive, maintaining contact with family has become cheaper and more convenient with the support of Information and Communication Technology (ICT). Although ICT has made a big impact on how people are able to communicate with one another, the connections between ICT and migration have been under-researched and have not received much attention until recently. The successful immigration process can be measured by migrants' integration to their new place of residency. This study aims to better understand how immigrant communities in South Korea use ICT in their integration into the host society and how it impacts their lives. A model was

proposed to reveal ICT usage in social, economic, linguistic, and cultural integration and its effect on overall migration. A survey was taken using an online survey platform, and factor analysis and multiple regressions were conducted using a statistical package to fulfill the objective, answer the research question, and test the hypothesis.

Results show that foreigners living in South Korea use ICT in their social, cultural, and linguistic integration. They also show that ICT for integration has a positive impact on their migration. Therefore, the government should recognize a need to support and enable ICT based opportunities so that migrants can integrate successfully, thus helping a multicultural society to be formed. The study is contributed to the empirical and theoretical background of the ICT and migration topic as well as recommended policy implications and insights which can support the immigration and multiculturalism policy in South Korea.

Keywords: Migration; ICT for Integration; Connected migrants; ICT and Migration; Bonding & Bridging; Online survey

Student Number: 2013-23867

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Chapter 1. Introduction

1.1 Background

Globally, there were 232 million international migrants in 2013. Between 1990 and 2013, the number of international migrants worldwide rose by over 77 million or by 50 percent. Much of this growth occurred between 2000 and 2010 (UN, 2013). Between 1990 and 2013, Northern America recorded the largest gain in the absolute number of international migrants, adding 25 million migrants, equal to 1.1 million additional migrants per year. Europe added the second largest number (23 million or 1 million per year) of international migrants, followed by Asia (21 million or slightly less than 1 million per year) (UN, 2013). Additionally, over 51 percent of all international migrants in the world were living in ten countries.

In 2013, Asia-Asia was the largest migration corridor in the world, with some 54 million international migrants born in that major area and later residing in another country in Asia. Between the years 2000 and 2010, the Asia-Asia corridor grew by an average of 1.5 million international migrants per year; a figure which fell to 0.8 million between 2010 and 2013. Of the seven largest migration corridors with a destination country in the South, five were between countries in Asia, including the corridors China- Republic of Korea and Cambodia- Thailand, while two were between countries in Africa, namely Sudan- South Sudan and Somalia- Kenya (UN, 2013).

Main factors of migration flow include neo-liberalism, globalization, development, and expansion of Information Communication Technology that accelerated the two former factors, and income inequality in the world economy.

The growth of migration inflow in Korea was related to these factors as well. Such growth in Korea was possible since the Korean Constitution includes principles of market economy and free competition as well as accelerated globalization by growing ICT in Korea, all of which are important factors in Korea's present and future (강동관, 2014). In the case of South Korea, according to an immigration office report in 2013, there are 1,576,034 (around 3.1% of the population) foreigners residing in South Korea (KIS, 2013). If this growth rate is maintained in the future, the estimated number of migrants would be 2 million in 2018, 3 million in 2028, and 5 million in 2048. Along with the growth of migrants, the diversity of migrants had been increased as well, and this also impacted Korean society, economics, population, and culture (강동관, 2014). As Table 1-1 and 1-2 show, the number of foreign residents is increasing and the majority of them are from China or are Korean-Chinese. The country that defined itself as homogenous for a long time, has started paying more attention to attract foreign laborers and foreign talents. The Commissioner of Korea Immigration Service, Han Moo-Geun, said "Attracting foreign talent is not only stimulating national growth, but is a new source of cultural diversification" (KIS, 2014).

Table 1-1 Number of Foreign Residents in South Korea

(Unit: a person)

	2009	2010	2011	2012	2013
Residents	870,636	918,917	982,461	932,983	985,923
Short-term Visitors	247,590	258,673	277,596	324,504	356,842
Overseas Koreans	50,251	83,825	135,020	187,616	233,269
Total	1,168,477	1,261,415	1,395,077	1,445,103	1,576,034

(Source: Korea Immigration Service Statistics 2013)

There are two main reasons that explain why South Korea is trying to become multicultural and attract more foreigners.

Table 1-2 Number of Foreign Residents by Nationality

(Unit: a person)

Country	Total	Country	Total	Country	Total
China	778,113	Philippines	47,514	Taiwan	27,689
(Korean-Chinese)	(497,989)	Thailand	55,110	Sri Lanka	23,383
USA	134,711	Indonesia	41,599	Cambodia	31,986
Vietnam	120,069	Uzbekistan	38,515	Others	197,089
Japan	56,081	Mongolia	24,175	Total	1,576,034

(Source: Korea Immigration Service Statistics 2013)

First, researchers project labor shortages in the 2020s, with the number of available jobs surpassing the number of those seeking jobs. This will be the result of sharp decline in the number of job seekers who are part of the "baby boom generation" as they exit the labor market, according to a Hyundai Research Institute report. It's referring to the people born right after the Korean War between 1955 and 1963. The group numbers more than 7 million people, or nearly 15-percent of the total population. The report¹ also says there'll be a sharp increase in the number of low wage, low skill jobs. Second, the birthrate in South Korea stood at 1.18 children per woman last year — the lowest among the OECD member countries. Almost 15 percent of the country's population will be 65 or older by 2018, and 50 percent by 2100 at the current birth rate, according to a state-run research firm.

The country's low fertility rate and aging population pose many economic problems such as lower labor productivity, declining tax revenues, declining

¹ http://www.arirang.co.kr/News/News_View.asp?nseq=172203

saving rates, diminishing consumption, waning investment, and budget imbalance (Kim, 2009).

1.2 Research Motivation and Objectives

When people live abroad they usually try to maintain contact with family and friends. As Borkert said, migration is not a one way process, migration connects (Borkert, Cingolani, & Premazzi, 2009). At the beginning of the 20th century, those who migrated from one place to another sent their families mail and packages, which usually took several months to arrive. But today we are making calls and seeing each other in real time using technologies. Communication is easier, faster, and cheaper today. Diminescu pointed out, “Yesterday the motto was: immigrate and cut your root; today it would be: circulate and keep in touch” (Diminescu, 2008). It is accepted that the nature of migration has been transformed by new technologies which enable migrants to maintain contact with the society and community from which they have left. Not limited to only contacting people from their country of origin, immigrants also try to create connections with their host society, including people from the same country and people from the host country. Since the development of ICT is increasing, all those connections are improved by the help of technologies. Apart from using ICT as a communication tool, it is a main source of information for migrants in every phase of their migration. In the pre-departure phase, migrants need information and services which will help plan their move abroad. There has been presumption that, with chain migration, people go to where they already have contacts (Cornelius, Komito, & Bates, 2009). However, in today’s information age, people’s decisions do not necessarily depend on

whether they have a contact or not in the country where they are planning to move. This is because it is possible to get enough information about a destination using the Internet and other technologies.

In the post-migration phase, ICT can complement and enhance effective integration strategies (Redecker, Haché, & Centeno, 2010). ICT tools help open up employment opportunities, provide learning and training opportunities, foster migrants' language and cultural skills, and facilitate and accelerate the social and cultural integration of newly arrived immigrants, all of which help migrant families to overcome the isolation which they face on arrival and make relevant information available to them.

Problem Description

It is widely accepted in the body of literature on migration that ICT has made it possible for migrants to maintain contact with their homeland in a way that was never possible before as well as the whole migration process being impacted by ICT (Benítez, 2012; Borkert et al., 2009; Burrell & Anderson, 2008; Diminescu, Hepp, Welling, Maya-Jariego, & Yates, 2009). However, this field is still short of studies, especially quantitative studies with the exception of “Online Survey of Connected Migrants” conducted by European Union (Rissola, 2013). Most statistics and surveys such as “ICT Usage in Household and by Individuals” don't include or indicate any information on migrants. Thus, it is difficult to examine ICT usage by immigrants and its impact on their life. South Korea has been rated as one of the most advanced countries in ICT developments² (top-ranked position in the ICT Development Index for three

² <http://www.itu.int/en/ITU-D/Statistics/Pages/default.aspx>

consecutive years). With foreign residents now accounting for more than 3 percent of the population of a country that long defined itself as homogenous, Koreans are taking multiculturalism seriously. However, is there any connection between ICT and migration in the case of South Korea? Does the highly developed ICT country have an impact on attracting more foreigners? Can migrants in South Korea use ICT without any limitation as members of the host society? Finding answers for all these questions will help Korean authorities to pursue a future-oriented immigration policy, attract advanced foreign talents, and build social integration that respects mutual values which are safe for both nationals and foreigners alike (KIS, 2014).

Purpose of the Study

The success of immigration can be measured by integration. While the term is understood differently in different contexts, “integration” can be taken to denote the process by which migrants become part of society, both as individuals and as groups (IOM). In this study, we aim to better understand how immigrant communities in South Korea use ICT and the effects of its use on their social, economic, linguistic, and cultural integration into the host society. Without an understanding of the current situation of immigrants, the authorities and local government cannot take the necessary strategic actions to improve policies and reach goals to create a multicultural Korea. Therefore, this study attempts to investigate the relationship between ICT and migration with the following objectives.

- a. Analyze relations between ICT and migration based on existing literatures and empirical study
- b. Understand how migrants use ICT in South Korea using quantitative

study

- c. Reveal what effects ICT has on integration into host society
- d. Find a way to improve current situation based on results and recommend appropriate policy implications

Assumption of the Study

The study assumes that ICT accessibility in South Korea is high and it is equally available to citizens and foreign residents. In other words, it is assumed that besides individuals' language barrier and digital literacy, there is no limitation to ICT use for foreigners. Thus, this study is focused on usage instead accessibility. Based on previous studies and government policies, it is also assumed that South Korea needs to attract more immigrants including foreign talents and labor forces (Kim, 2009; KIS, 2014). In this study, a greater number of immigrants is considered a positive indicator in the case of South Korea.

The study used a survey as a research tool. It is assumed that, respondents give honest and truthful responses for questionnaires, since surveys contain questions which ask for individuals' opinions and thoughts.

Organization of the Study

This study is organized as follows. The second chapter includes a review of literatures that discuss theory of migration, integrations, and relations between ICT and migration. Chapter 3 covers a research model, hypothesis, survey design, data collection, and procedure for analysis. Chapter 4 reveals how the research has been carried out together with results. The interpretation of results and discussion are also included in this chapter and presents mainly results of factor analysis and regression analysis. Chapter 5 draws conclusions and gives policy implications. The thesis ends with the references and appendixes.

Chapter 2. Literature Review

2.1 Theory of Migration

A variety of theories have been trying to explain why people migrate to foreign countries. At first glance it seems reasonable to assume that most people move hoping to find better conditions or opportunities elsewhere, such as jobs, higher wages, safety, or freedom of expression. This is the implicit assumption underlying the most popular theories of migration. But some people are forced to migrate, for instance, someone who moves due to war or natural disaster. At present, there is no single, coherent theory of international migration. There are only a fragmented set of theories that have been developed largely in isolation from one another that sometimes, but not always, are segmented by disciplinary boundaries. The reasons to migrate can usually be classified into push-pull factors. This simple model conceives migration as driven by a set of push factors operating from the region or country of origin (poverty, unemployment, landlessness, rapid population growth, political repression, low social status, poor marriage prospects, etc.), and pull factors operating from the place or country of destination (better income and job prospects, better education and welfare systems, land to settle and farm, good environmental and living conditions, political freedom, etc.).

One of the early writers on modern migration is Ernest Ravenstein, who in the 1880s based his “Laws of Migration” on empirical migration data. For his migration study, Ravenstein compared census data gathered in 1871 and 1881. The most recent tabulations available at the time and at the heart of his emerging

migration model were the concepts of absorption and dispersion. He formulated from his observations a series of seven "laws of migration" such as most migrants only proceed a short distance, urban dwellers are less migratory than rural dwellers, and females are more migratory than males (Ravenstein, 1885).

Everett Lee (Lee, 1966) reformulated Ravenstein's theory to give more emphasis to internal factors. Lee also outlined the impact that intervening obstacles have on the migration process. He argued that variables such as distance, physical and political barriers, and having dependents can impede or even prevent migration. Lee pointed out that the migration process is selective because differentials such as age, gender, and social class affect how people respond to push-pull factors, and these conditions also shape their ability to overcome intervening obstacles. Furthermore, personal factors such as a person's education, knowledge of a potential receiver population, family ties, and the like can facilitate or retard migration.

Probably the oldest and best-known theory of international migration, neoclassical economics, focuses on differentials in wages and employment conditions between countries, and on migration costs. It generally conceives movement as an individual decision for income maximization (Massey et al., 1993). According to this theory and its extensions, international migration is caused by difference of the supply and demand of labor in countries. Nations with scarce labor supply and high demand will have high wages that pull immigrants in from nations with a surplus of labor. The "new economics of migration" perceives immigration as a family or household decision aimed at

maximizing income and minimizing risks to family income. Households in developing countries attempt to control risks to their economic well-being by sending some family members to work in foreign labor markets (Kim, 2009). Another theory of international migration is called dual labor market theory (segmented labor market theory) which argues that migration is caused by a permanent demand for immigrant labor that is intrinsic to the economic structure of developed nations (Piore, 1979). According to Piore, immigration is not caused by push factors in sending countries (low wages or high unemployment) but by pull factors in receiving countries (a chronic and unavoidable need for foreign workers). World systems theory regards international migration as a natural outgrowth of economic globalization and the expansion of capitalist economic relations across national boundaries. With the penetration of capitalism from its core into peripheral societies, land and raw materials as well as labor within the latter come under the influence of markets. In this way, an increasing number of the people all over the world are absorbed into the global market economy, inevitably generating migration flows, some of them international (Kim, 2009).

2.2 Integration of Immigrants

Integration is often used as a term but rarely defined as a concept:

The term is used on two levels. Generally, it is used to describe the process of introducing a new element into an existing system, for example, introducing migrants into a new host society. The term is also used to refer to the process of bringing people of different racial, ethnic,

or cultural groups into unrestricted and equal association in a society (IOM).

The process of integration concerns all aspects of life in society and includes migrants as well as the host society. Integration measures are generally intended to preserve or re-establish the smooth functioning of a society and to assist people who require support in order to become active participants in economic, social, and cultural life.

“Interactions between and among immigrant newcomers and host communities produce measurable economic, political, and social patterns that indicate the degree to which integration is taking place. Because integration has multiple dimensions, each has bearing on the other. For example, linguistic integration is an important determinant of social and economic integration” (Jiménez, 2011).

2.2.1 Economic Integration

The first and most widely recognized indicator for successful integration is connected with the participation of migrants in the labor market and with factors that stimulate or hamper this such as education and language skills. Successful labor market participation is often understood as having paid employment, but the rapidly growing numbers of immigrant entrepreneurs illustrate that setting up one’s own business may also be a track for successful integration (Entzinger & Biezeveld, 2003). Indicators also include the participation rate of immigrants. For example, the percentage of working-age immigrants who are employed in the national labor market and the

unemployment rate of immigrants as compared to the national average is also an indicator of economic integration.

2.2.2 Social Integration

Social integration can be defined as the inclusion and acceptance of immigrants into the core institutions, relationships, and positions of a host society. For the immigrants, integration means the process of learning a new culture, acquiring rights and obligations, gaining access to positions and social status, building personal relationships with members of the host society, and forming a feeling of belonging to, and identification with, that society (LIP). International Organization for Migration stated that social integration relates to the well-being and the participation of migrants in the social life of the host society. The health of migrants, as well as their psychological condition, needs to be considered in this context. The number of inter-group marriages between migrants and nationals is another important indicator for social acceptance and inclusion (IOM).

2.2.3 Cultural Integration

In recent years it has been recognized more and more that integration is not limited to the socio-economic domain. Therefore, indicators such as housing and participation in the labor market are not sufficient. It has become more widely acknowledged that a certain common basis is deemed necessary to create an atmosphere of mutual understanding in a society, even though this recognition does not automatically entail a call for full assimilation. This being the case, the search for indicators for integration in the cultural domain will

have to be intensified. Integration refers to an individual's cognitive, behavioral, and attitudinal change: this is termed cultural integration (or acculturation). One of the key questions that emerges in the assessment of acculturation processes of migrants to the society that surrounds them is to identify what exactly constitutes the core of that society, and its basic values and rules (Entzinger & Biezeveld, 2003). Cultural integration does not necessarily mean that immigrant groups have to give up the culture of their home country: bicultural competencies and personalities are an asset both for the individual and for the host society.

2.2.4 Political Integration

As International Organization for Migration (IOM) defined, membership in associations, unions, and political parties can serve as an indicator for social and political integration. Migrant organizations, individual participations in elections, and political representation at the local, regional, and national level are additional indicators. The Council of Europe reported that the political participation of migrants should be taken into consideration when assessing their integration because political life represents an integral part of a person's life. Besides, political participation comprises more than the right to vote or the right to be elected for political office. It also includes the right to express one's opinions and beliefs (Council of Europe).

2.2.5 Linguistic Integration

International Organization for Migration believes that language is a fundamental basis for any interaction within society. Therefore, linguistic

integration is among the first necessary steps for migrants, and the proficiency level of migrants in the language(s) of the host country provides an important insight into the aspect of integration. As Jimenez mentioned in a report about immigrants in the United States, “English proficiency is a virtual requirement for full participation in US society. Americans also view English language use as a key component of national identity.” According to the report, immigrants today are learning English faster than the large waves of immigrants who came to the United States during the turn of the last century (Jiménez, 2011).

2.3 Technology and Social Change

Technology changes society by changing our environment in which we live. This change is usually in the material environment, and the adjustment we make to the changes often modifies customs and social institutions (Ogburn, 1947). Technological research in the social sciences frequently focuses on the relationship between technological change and social change. Beck-Gernsheim stated in his article:

On the one hand there is technological determinism which sees technology as destiny: technology dictates whether and in what way it will be applied. On the other hand there is position of social reductionism. Here it is the users who decide whether and in what way technology will be applied (Beck-Gernsheim, 2000).

Referring to his previous work, Manuel Castells – the contemporary author who has probably paid the most attention to the relation between technology and society – states that what he was trying to do was to find the key sequence for

social change and to propose analytic and conceptual tools that could inform the process of change. For that purpose, he felt he needed to find a common nucleus for that change that would be applicable to multidimensional transformation in all contexts (Sousa, 2006).

As Laszlo emphasized:

The increasing complexity of society's structures can be analyzed in terms of two processes that take place simultaneously. In the sociopolitical sphere, one process is the diversification of societal systems (social and ethnic groups, residential and sociopolitical communities, cultural and interest groups, etc.); and the other, the convergent integration of the existing systems on successfully higher levels of organization (e.g., the creation of multicultural communities, multi-ethnic societies, diversified or federated nation-states, regional economic, monetary and defense communities, multinational federations, commonwealth systems, and the like) (Laszlo, 1992).

The contemporary world is becoming more diversified at the same time as it is becoming more integrated.

In his study, Castells demonstrates that ICT has largely integrated national economies around the world and has made information the most valuable resource (Castells, 2000). The possibilities of widespread Internet use have stimulated substantial developments in a variety of applications such as electronic commerce, distance education, electronic publishing, digital libraries, and virtual communities. The emergence of these new applications has excited

considerable speculation about the social changes that could arise if these kinds of Internet uses were to become widespread (Kling, 2000) .

2.4 ICT and Migration

ICT has drastically changed the world we live in. Compared to a time when one letter or package could take months to arrive, maintaining contact with family has become cheaper and more convenient with ICT support. Although ICT has made a big impact on how people are able to communicate with one another, the connections between ICT and migration have been under-researched and have not received much attention until recently. Borkert et al. summarized researches undertaken in Europe on ICT and migration between 2004 and 2008 and reviewed over 150 publications investigating issues of ICT and migration (Borkert et al., 2009). As mentioned in the report, ICT is a topic that has received a lot of attention in media studies, but the attention towards migration studies has been catching up lately.

Based on Borkert et al.'s article, Collin emphasized some of the most widespread and helpful terms encountered in his review of the literature such as diaspora, transnationalism, and e-inclusion. As he referred from Schnapper's study, **diaspora** can be defined as "the condition of a geographically dispersed people who had settled in different political organizations, but who maintains, in spite of this dispersion, some form of unity and solidarity" (Schnapper & Davis, 1999). Studies on diasporas have pointed out the importance of sense of belonging and argue that ICT allows people to maintain ties between communities and also dispersed communities to reproduce themselves

(Kozachenko, 2013). **Transnationalism**, on the other hand, can be defined as “sustained, cross-border, relationships, patterns of exchange, affiliations, and social formation spanning nation-states”. More precisely, in the context of migration, transnationalism refers to the practices, actions, and organizations that link migrants to their country of origin (Vertovec, 2009). Studies on transnationalism try to explain their transnational life-circuit. In other words, they try to explain how migrants construct and manage their lives while being embedded into more than one society. Another term used often in ICT and migration studies is **e-inclusion**. This concept has been widely used, notably since it has been declared in the Riga Declaration in 2006. The Declaration states:

E-inclusion means both inclusive ICT and the use of ICT to achieve wider inclusion objectives. It focuses on participation of all individuals and communities in all aspects of the information society. E-inclusion policy, therefore, aims at reducing gaps in ICT usage and promoting the use of ICT to overcome exclusion, and improve economic performance, employment opportunities, quality of life, social participation, and cohesion (European Commission, 2006).

In order to reach these objectives, the European document sets out by recognizing the importance of ICTs in European society and points out the inequalities in terms of access and uses. It then targets 22 priorities that were grouped in six categories: active ageing, geographical digital divide, e-accessibility, digital literacy and competences, cultural diversity, and inclusive eGovernment (Collin, 2012).

As IOM states, “migration is not only influenced by ICTs, but ICTs have become global drivers of migration”. Several researchers report that migrants are similar or more intensive adopters and users of ICT than the native population (Kluzer, Hache, & Codagnone, 2008). Diminescu found that immigrants and ethnic minorities are more eager ICT consumers than those of the host society, but ethnicity doesn’t shape the propensity to consume ICT products and services (Diminescu, Hepp, et al., 2009). Also, Komito and Bates reported in their paper about ICT practices of Polish and Filipino nationals in Ireland that migrants are fervent users of technologies. They also reported that seeking information about living and working in the host society was one of their uses of technologies (Komito & Bates, 2011).

A recent qualitative case study provides some evidence that the Internet supports people in seeking new jobs, better education, new housing, and in establishing social contacts in a wider range of more distant places than before. “Online activities and routines could affect people’s migration propensity, frequency, and destinations and change their motives for migrating” (Vilhelmson & Thulin, 2013). Vilhelmson and Thulin reported the result of their research as a “positive relationship between intensity of Internet-based information seeking and the likelihood of a respondent stating that the Internet promotes the tendency to migration to another place” (Vilhelmson & Thulin, 2013).

Various studies show the most common usage of ICT by migrants is to maintain contact with family and stay in touch with co-ethnics (Diminescu, Hepp, et al., 2009). Migrants use ICTs not only to maintain ties with family, friends, and co-

nationals, but also use them to create new ties with other foreigners to exchange information (Burrell & Anderson, 2008). Some researchers address that people usually migrate to a place where they already have contacts (Cornelius et al., 2009). Various technologies including e-mail, Skype, webcams, and social network sites help to maintain ties and contribute to increase the durability of long distance contact (Komito & Bates, 2011). Hiller and Tara propose that “the Internet is vital to the discovery, nourishment, and rediscovery of lost ties” (Benítez, 2012). “Strong” ties such as family and friends and “weak” ties such as former migrants and non-migrants in origin and destination areas allow for the reducing of migration risks (Kozachenko, 2013).

Collin addressed two purposes of ICT usage by migrants, namely **bonding** and **bridging**. Bonding is defined as the use of ICT to maintain contact with the society of origin, and bridging is using ICT to integrate into the host society (Collin, 2012). Another study on how the Ghanaians living in London use ICT in their daily life showed two trajectories for how migrants use ICTs. One trajectory was using ICTs to “look homeward”, and the other was using the Internet to explore the world and search for information, opportunities, and new ideas (Burrell & Anderson, 2008). Codagnone and Kluzer defined concept **ICT appropriation** in their study and emphasized that individuals’ use ICT for some meaningful reason. As defined in their study, ICT appropriation means “the processes by which individuals incorporate ICT in their daily practices of working, dealing with government, learning, staying in contact with friends, entertaining themselves, buying goods and services, getting information and joining in the public sphere, etc.” (Codagnone & Kluzer, 2011).

The arrival of ICT has transformed our ways of relating and communicating and has even redefined the notions of absence and presence (Rissola, 2013). The concept “**connected migrant**” is used in Rissola et al.’s study and is defined as “who is characterized by having multiple affiliations, being simultaneously present ‘here and there.’” For migrants, integration no longer only means to participate and be related to society, it now means staying connected. It means to be able to keep links with the support of digital equipment and balance between relationships in their country of origin or members in the host country.

One more concept we should discuss is **digital literacy** or ICT skills. As an object of integration, mastering ICT is a prerequisite for migrants if they wish to fully integrate and actively participate in their host society (Codagnone & Kluzer, 2011). Reviewing the results of their case study, Garrido and Rissola et al. concluded that ICT knowledge is relevant for their employability. They found that there are strong correlations between length of residence and ICT skill levels (the most recent immigrants tend to have the lowest digital competence level), between ICT skill levels and educational background, and between ICT skills levels and current employment status (immigrant women with basic or no ICT skills have higher levels of unemployment) (Garrido, Rissola, Rastrelli, Diaz, & Ruiz, 2010).

Rissola classified integration into two types of integration which can be distinguished regarding ICT based integration processes. The two types of integration are as follows (Rissola, 2013):

- Top-down integration is offered by institutions, public authorities, or nongovernmental organizations and relies upon online official welcoming and integration services.
- Bottom-up integration relies on informal hospitality and is directly linked to social networking processes between migrants and members of the host society, which are also enabled by ICT.

All reviewed literatures are stated in the **Summary Table of Literature Review** (Annex-1) with title, published year, goal of the study, methodology used, and concepts which were extracted from those papers and used in the study.

Chapter 3. Research Methodology

This chapter presents research methodology including a research model and hypothesis, survey design, data collection, and research procedure. Research began with reviewing literatures written on the topic which revealed ICT usage by immigrants and defined determinants which can represent integration of immigrants into the host society. Detailed literature review is included in Chapter 2. After reviewing literatures, a research model was proposed and a hypothesis was raised. In order to verify the research model, a survey questionnaire was conducted and its results analyzed using factor analysis and multiple regression. All those procedures are presented in this chapter and explained in detail.

3.1 Research Model and Hypothesis

The study used a newly created model of determinants that can examine the impact of ICT usage by immigrants for their integration and migration. Since there is no comprehensive model related to ICT and migration, a research model was proposed based on previous literatures.

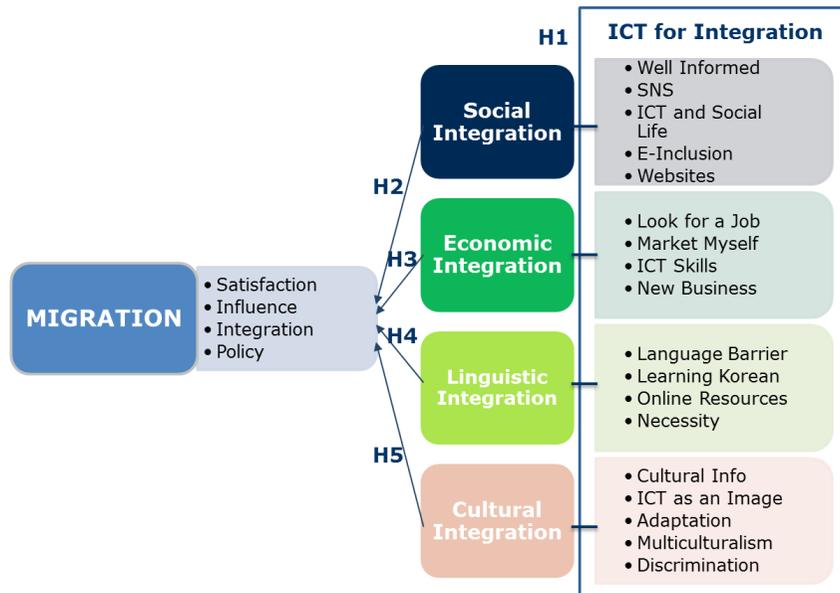


Figure 3-1: Proposed Research Model

When immigrants integrate into a host society, we can say migration was successful. The model consists of four types of integration: social, economic, linguistic, and cultural. The model's components show ICT for each integration and for migration. This model tries to reveal how ICT affects the four types of integration. And through those integrations, the relationship between ICT and migration will be examined.

With those things in mind, the main questions in this thesis have been formulated as:

1. How is ICT being used by migrant groups in South Korea, and how does it impact their life?
2. What are the relations between ICT for integration (social, economic, linguistic, and cultural) and overall migration?

Following hypothesis are developed.

H1: The components for ICT for integration measures correspond to the respective factors: social integration, economic integration, linguistic integration, and cultural integration.

H2: People use ICT for their social integration into society, and it has a positive impact on migration.

H3: People use ICT for their economic integration into society, and it has a positive impact on migration.

H4: People use ICT for their linguistic integration into society, and it has a positive impact on migration.

H5: People use ICT for their cultural integration into society, and it has a positive impact on migration.

Hypothesis 1 is related with construct validity to test whether the identified components would be fit for the model. In other words, this hypothesis aims to examine potential uses of ICT in key aspects of integration. Hypotheses 2 to 5 seek relationships between the explanatory variables and the outcome variable. It was postulated that each type of integration would have positive relationships with the outcome variable migration, i.e., the higher the migrants can integrate into society, the more satisfied they will be and the more migration would occur.

3.2 Definition of Determinants

In this research, integration is classified into 4 types based on life aspects of migrants and focuses on how ICT impacts their economic, social, linguistic, and cultural integration into the host society. Previous studies have studied those types of integration separately but not jointly.

ICT in Facilitating Social Integration: According to Redecker et al., “ICTs facilitate and accelerate the social and cultural integration of newly arrived immigrants; help migrant families to overcome the isolation migrant they face on arrival; and make relevant information available to them” (Redecker et al., 2010). The access and usage of ICTs among Salvadoran transnational e-families and communities can promote cultural networks, educational and historical learning, and e-government services to Salvadorans living in the diaspora who are eager to participate in Salvadoran transnational society (Benítez, 2012). Immigrants and ethnic minorities increasingly use ICT to enhance visibility and “voice” in order to dialogue with the host society and to struggle against discrimination and disadvantages (Borkert et al., 2009).

ICT in Facilitating Economic Integration: Hamel states “ICTs do not only serve as channels of information that lead to migration, they may be the reason for migration.” Many people find jobs through ICT, and it can lead many to migrate as a consequence (Hamel, 2009). Cornelius and Komito et al. conducted a study to examine the impact of social networking technologies on migration strategies and integration, focusing on the use of new technologies for information seeking and dissemination, as well as personal communication. Polish residents in Ireland were interviewed and some had used the Internet to get information about Ireland before they went, but most went to Ireland because they knew someone in Ireland or had obtained a job through a recruiting agency or job advertisement before arriving (Cornelius et al., 2009). Redecker et al. mentioned that “ICT tools assist in opening up employment opportunities for immigrants and ethnic minorities by improving recruitment

procedures and matching immigrants' professional profiles with employments needs" in their study about using ICT to promote education and employment opportunities for immigrants and ethnic minorities (Redecker et al., 2010). Hepp et al. argue that basic computer literacy is one of the necessary preconditions to finding a job, and many jobs require such competences. Furthermore, more advanced ICT skills can help to overcome some hurdles such as language barrier or lack of recognition in labor market access (Hepp, Welling, & Aksen, 2009).

ICT in Facilitating Linguistic Integration: Researchers argue that linguistic integration is an important factor in overall integration. Inability to communicate in the host country's language could cause many difficulties and hurdles to overall integration. When migrants become able to communicate in the host society's language, linguistic integration is considered accomplished (Collin & Karsenti, 2012). Diminescu et al. (2009) mentioned that there are very few public online sites available in multiple languages and immigrants don't often use online public information due to lack of trust. Their studies suggest that using ICT to enhance literacy levels and proficiency in the host country's language have been found to be a promising approach, especially for newly-arrived immigrants (Diminescu, Renault, et al., 2009). Redecker argues that "Language acquisition is of paramount importance for the successful social and economic integration of immigrants into the host society" (Redecker et al., 2010).

Studies outlined by Kluzer show that ICT use in education for adult migrants in the host country's language (L2, second language) is gradually growing.

However, none of the EU countries have an official policy or deployment strategy for ICT use in L2 (Kluzer, Ferrari, & Centeno, 2011). Collin addressed that there are two types of tools that are designed to support immigrants in learning the language of the host society. One tool is pre-emigration which allows immigrants to learn the language before they arrive. Another tool is post-immigration which offers flexibility in studying language in the host society while immigrants are working or studying (Collin & Karsenti, 2012).

ICT in Facilitating Cultural Integration: Hamel suggested that “Migrants and communication technologies clearly have an impact on the cultures of their host countries, and their own”. People who are living abroad can maintain traditions through linkages between members of diasporas and people in their home country with the support of ICT. Diasporas may celebrate cultural festivals or religious ceremonies, make friends or find spouses of shared cultural origins or religious backgrounds, or may simply find products which originate from their countries (Hamel, 2009). “Migrants face the challenge of integrating themselves within their new living context and maintaining their own culture and/or articulating a new (hybrid) migrant identity, while being mobile” (Hepp et al., 2009). Kozachenko also stated that:

The impact of ICT is quite commonly described as “Westernization of the world” producing increasingly “hybrid” cultures. However, there is also an opposite point of view according to which ICT allows reinforcement cultural identities of migrant populations producing heterogeneous cultural clusters (Kozachenko, 2013).

3.3 Survey Design

Since there are not many quantitative researches on the topic of ICT and migration, a quantitative research method for this study was decided upon. By utilizing a quantitative approach, the chosen hypotheses could be confirmed or disconfirmed through statistical analysis. This study follows a non-experimental, correlational design. In short, this means that data is collected in order to interpret if certain things tend to co-occur and are related to one another. The advantage of this method is that it is easy to conduct, and a sufficient amount of data can be gathered quickly, e.g. through a questionnaire.

To reveal ICT usage by immigrants and effects of this use on their life, a questionnaire was the most appropriate tool to collect primary data for the study. Foreigners who are working, studying, and living in South Korea were surveyed with a questionnaire of appropriate length and simplicity.

3.3.1 Questionnaire Development

Designing and implementing a survey is a systematic process of gathering information on a specific topic by asking questions of individuals and then generalizing the results to the groups represented by the respondents (Hart, 2010). In order to examine the relationship between ICT and migration, more specifically ICT usage by immigrants and its effect on integration, a set of questions was designed to draw out necessary information and provide meaningful insights.

The self-administered questionnaire was comprised of different types of questions, i.e., single-choice, multiple-choice, and Likert scales. The

questionnaire contained three segments which were questions related to ICT usage (contact family, social networking sites, online service, remittance, websites, etc.), questions asking survey participants to evaluate their own ICT impact on integration (social, economic, linguistic, and cultural integration), and questions for general information (Socio-demographic, language and ICT skills, length of stay and plan, etc.).

3.3.2 Sample Selection

The survey target population group is “connected migrants” who have access to and use ICT to stay in touch, explore the host society, and gain knowledge and skills to foster their socioeconomic integration. Therefore, we will focus on migrants who are already digitally included which will allow us to opt for an online survey. The target population includes any foreigners who are currently residing in South Korea including skilled workers, family members, business class immigrants, refugees, foreign students, temporary workers, unskilled workers, etc.

The questionnaire was created in English and then translated into Mongolian to reach more respondents. Because of language selection, some of the respondents who did not know English or Mongolian were unable to fill out the survey.

Before starting the data collection, it is appropriate to perform a pre-test of the developed questionnaire. In this way, one can discover defects, confusing formulations, or other problems with the questionnaire. The questionnaire was pre-tested with available foreign students in South Korea (n=30) with an online

survey tool to identify whether the determinants, components, and content of the research instrument were reliable for the research. In a week's time, 30 responses were received with suggestions and opinions. The pre-test led to some small changes that helped ensure the quality of the final questionnaire.

3.3.3 Measurement of Variables

This paper has one dependent variable that measures the overall *Migration (MIG)* of immigrants. The variable was planned to form a construct out of four items in the questionnaire. Respondents had four questions where they had to indicate on a 5-point scale (1=Strongly Disagree to 5=Strongly Agree) to what extent they agreed or disagreed with statements about their migration in terms of (1) Satisfaction, (2) Influence on Others, (3) General Integration, and (4) Immigration Policy.

Four independent variables are included in the main model. These variables were constructed to measure ICT usage on social, economic, linguistic, and cultural integration respectively.

The *Social Integration (SOC)* construct was operationalized using five questions. Questions were developed based on Collin's paper "ICTs and Migration: The Mapping of an Emerging Area of Research" (Collin, 2012), an online survey taken by European Commission (Rissola, 2013), and other literatures (Benítez, 2012; Borkert et al., 2009; Redecker et al., 2010). Respondents were asked to indicate on a 5-point scale (1=Strongly Disagree to 5=Strongly Agree) their evaluation of (1) how well-informed they are about different living aspects in South Korea, (2) how important social networking

sites are, (3) ICT and social life relevance, (4) e-inclusion, and (5) usage of public administration websites.

The *Economic Integration (ECON)* construct was operationalized using four questions. Questions were developed based on an online survey taken by European Commission (Rissola, 2013) and other literatures (Cornelius et al., 2009; Hamel, 2009; Hepp et al., 2009; Redecker et al., 2010). Respondents were asked to indicate on a 5-point scale (1=Strongly Disagree to 5=Strongly Agree) their evaluation of (1) looking for a job using the Internet, (2) marketing themselves in a job market using the Internet, (3) ICT skills for a job, and (4) opportunities to create new a business or support their business using ICT.

The *Linguistic Integration (LING)* construct was operationalized using four questions. Questions were developed based on Collin and Karsenti's paper "Facilitating Linguistic Integration of Immigrants: An Overview of ICT Tools" (Collin & Karsenti, 2012) and other literatures (Diminescu, Renault, et al., 2009; Kluzer et al., 2011; Redecker et al., 2010). Respondents were asked to indicate on a 5-point scale (1=Strongly Disagree to 5=Strongly Agree) their evaluation of (1) language barriers, (2) usage of ICT to learn Korean, (3) online resources, and (4) necessity of Korean language to work, study, or live comfortably in South Korea.

The *Cultural Integration (CULT)* construct was operationalized using five questions. Questions were developed based on previously mentioned literatures (Hamel, 2009; Hepp et al., 2009; Kozachenko, 2013). Respondents were asked to indicate on a 5-point scale (1=Strongly Disagree to 5=Strongly Agree) their evaluation of (1) usage of the Internet to get information about Korean culture,

(2) ICT as an image of South Korea, (3) whether ICT helps one to adapt in Korean culture, (4) multiculturalism, and (5) discrimination experiences in South Korea.

The study also includes a total of seven control variables which are gender, age, city of residence, length of stay, level of education, and employment and plans to extend stay. All control variables were dummy variables and the description is stated in Table 3-1.

Table 3-1 Variables and Description

	Variables	Description
Dependent	MIG	Migration (5-point scale)
Independent	SOC	Social Integration (5-point scale)
	ECON	Economic Integration (5-point scale)
	LING	Linguistic Integration (5-point scale)
	CULT	Cultural Integration (5-point scale)
Control	GENDER	Dummy=1 if male, otherwise=0
	AGE	Dummy=1 if age is 25-34, otherwise=0
	CITY	Dummy=1 if resident of Seoul, otherwise=0
	STAY	Dummy=1 if stayed in South Korea less than 3 years, otherwise=0
	EDU	Dummy=1 if level of education is bachelor or below, otherwise=0

JOB	Dummy=1 if employed (includes student with part-time job, self-employed, part-time and full time employee), otherwise=0
PLAN	Dummy=1 if have plan to extend their stay, otherwise=0

3.3.4 Data Collection

The online survey software tool SurveyGizmo was used for collecting responses. Respondents were required to have a digital device like a computer, smart phone, or other mobile device connected to the Internet to complete the questionnaire. An online survey tool was chosen because of its ease of use for respondents and its capability to provide a summary report for further analysis. Since the surveys were taken online, the method for dissemination was also digital. In order to gather enough responses for the study, the survey link was disseminated to non-Korean friends and colleagues who are working and studying in South Korea. They then disseminated the survey further to their friends and acquaintances. The survey link was then posted on several Facebook groups which are often used by foreigners living in South Korea. For the online survey, Facebook was the best option to access the target population. As mentioned before, the survey was taken in English and Mongolian. The questionnaire in English was also posted on a website (www.waygook.org) which is mostly used by English teachers in South Korea. The survey link was sent by email to a group of foreigners who are participating in “Seoul Quality of Life Monitors” volunteer program held by the Seoul Metropolitan Government. The questionnaire in Mongolian was filled out by members of the

Mongolian Student Association in South Korea and other Mongolians working and studying in South Korea through Facebook pages.

The questionnaire responses were collected for two weeks from March 18 to March 31. In total, 150 responses were received. Excluding partially completed questionnaires, 143 responses were used for analysis. The English questionnaire received 105 responses and the Mongolian version received 45 responses.

3.4 Procedure for Analysis

This thesis mainly utilizes two statistical methods for data analysis: factor analysis and regression analysis. Factor analysis is used to ensure that the intended constructs can be justified and to prevent variables that do not represent what they were intended to measure from being included in the final model. After the constructs have been developed, regression analysis is used to test the established hypotheses. These two statistical methods will be briefly described.

3.4.1 Factor Analysis

Factor analysis attempts to identify underlying variables or factors that explain the pattern of correlations within a set of observed variables. Factor analysis is also used in data reduction to identify a small number of factors that explain most of the variance that is observed in a much larger number of variables. The purpose of data reduction is to remove redundant (or highly correlated) variables from the data.

In this analysis, principal component analysis was used, which is similar to,

more reliable than, and conceptually less complex than “traditional” factor analysis. Principal component analysis is concerned with establishing what kind of linear components exist in the data and how each variable might contribute to that component (Field, 2009). For simplicity, principal component analysis will just be called factor analysis as both methods are very similar.

Factor analysis was performed twice. It was used once for finding independent variables by taking 18 components of an assumed four types of integration and a second time for finding dependent variables by taking 4 components of migration.

3.4.2 Regression Analysis

The multiple linear regression model is used to study the relationship between a dependent variable and one or more independent variables. The generic form of the linear regression model is (Greene, 2008):

$$y = x_1\beta_1 + x_2\beta_2 + \dots + x_k\beta_k + \varepsilon, \quad (3.1)$$

where y is the dependent or explained variable and x_1, \dots, x_k are the independent or explanatory variables.

After factor analysis, the induced factor scores would be used for multiple regression analyses in order to predict the relationship between the dependent and independent variables with control variables such as gender, age, city of residence, length of stay, education, job, and plan to extend stay.

Chapter 4. Empirical Analysis and Results

This chapter presents an analysis of the data that has been collected through the survey. A total of 150 responses were received and seven were eliminated due to partial responses. Chapter 4 discusses and presents descriptive statistics and characteristics of the respondents and also reports on ICT usage by immigrants in South Korea. The data from 143 sample respondents is analyzed and measured against the established hypothesis. First, factor analysis will be utilized in order to examine if any variables should be excluded for the final constructs in the analysis. The constructs will be tested for reliability using Cronbach's alpha test. Towards the end, a regression model will be presented which tests the hypotheses that were established in Chapter 3.

4.1 Demographic and Descriptive Statistics

During the 14 days of the data collection period, the online questionnaire link was disseminated in various ways as presented in Chapter 3. Since the survey was taken online, any respondents who have digital devices and the Internet were able to fill out the questionnaire. Table 4-1 summarizes background characteristics and some other descriptive results.

Table 4-1 Demographics of Respondents

Measure	Items	Frequency	Percent
Gender	Male	78	54.5
	Female	65	45.5
Age	18-24 years	23	16.2
	25-34 years	88	62.0
	35-44 years	27	19.0
	45-54 years	3	2.1
	55-64 years	1	0.7

	Age 65 or older	0	0.0
Marital Status	Single (never married)	91	64.1
	Married	47	33.1
	Widowed	0	0.0
	Divorced	4	2.8
City	Seoul	90	63.4
	Other	52	36.6
Length of Stay	Less than a year	21	14.8
	1-2 years	39	27.5
	3-5 years	51	35.9
	5-10 years	23	16.2
	More than 10 years	8	5.6
Education Level	No formal education	0	0.0
	High school education	12	8.5
	Bachelor's degree	56	39.4
	Master's degree	59	41.5
	Doctoral degree	15	10.6
Employment	Employee (full-time work)	44	31.0
	Employee (part-time work)	8	5.6
	Self-employed (own business)	3	2.1
	Unemployed, looking for a job	5	3.5
	Student (not in the labor force)	49	34.5
	Student with part-time jobs	27	19.0
	Housework	6	4.2
	Other not in the labor force	0	0.0
Korean Language Level	I don't know any Korean	1	0.7
	Beginner	43	30.3
	Intermediate	44	31.0
	High intermediate	29	20.4
	Advanced	25	17.6
ICT Skills	Very good	83	58.5
	Good	43	30.3
	Medium	16	11.3
	Bad	0	0.0
	Very bad	0	0.0
Reason for Coming (multiple answers okay)	To study	95	66.9
	To work	46	32.4
	To start business	0	0.0
	To join my family	10	7.0
	For political or humanitarian reasons	1	0.7
	Other	4	2.8
Plan to Stay	Yes, I plan to stay 1-2 more	53	37.3

years		
Yes, I plan to stay 3-5 more	20	14.1
years		
I want to live in Korea as	19	13.4
long as possible		
I want Korean citizenship	2	1.4
No, I will go back	21	14.8
immediately		
I don't know	27	19.0

The difference in gender composition is small, and the highest percentage of the respondents (62%) belongs to the age group 25 to 34. People from 32 nationalities participated in the online survey and the majority were Mongolian (32%) and American (14%). The reason for a high percentage of the participants being Mongolian is because the questionnaire was translated into Mongolian. Other respondents were from the following places: Bangladesh, the United Kingdom, Bulgaria, Canada, Chile, Colombia, Georgia, German, Hungary, India, Indonesia, Iran, Ireland, Japan, Kenya, Morocco, Malaysia, Mexico, Myanmar, Netherlands, Nepal, Pakistan, the Philippines, Russia, Switzerland, Thailand, Timor-Leste, Turkey, France, and Spain.

The marital status in Table 4-1 depicts that 64.1% of the respondents are not married. A similar percentage of 63.4% depicts respondents' current place of residence being Seoul. The majority (63.4%) of the respondents have been in South Korea for 1 to 5 years, and their visa types varied depending on their status. 52.1% of the respondents are graduates, 39.4% undergraduates, and 8.5% had received just a high school education. Regarding employment, 57.7% of the respondents including self-employment are full-time or part-time workers, 34.5% are students, 3.5% are looking for a job, and 4.2% do housework.

For the question regarding their Korean language level, 61.3% of the respondents evaluated their Korean language proficiency as beginner or intermediate, 38% evaluated themselves as high intermediate or advanced, and only one respondent said they don't know any Korean. According to research by IOM Migration Research & Training center, foreign workers' Korean language proficiency in speaking and listening continues to improve until a certain level, but their reading and writing skill stays same (정기선, 2013).

Most respondents (88.8%) evaluated their basic ICT skills as very good or good. The basic ICT skills include: abilities related to using a computer and basic software, downloading and uploading files, using the Internet, email, smartphone, social networking sites (SNS), online services, finding information using the Internet, etc. Several researchers report that migrants are similar or more intensive adopters and users of ICT than the native population (Diminescu, Hepp, et al., 2009; Kluzer et al., 2008; Komito & Bates, 2011). Without basic skills it is impossible to utilize ICT. Thus our study results are consistent with the researchers' report mentioned.

The results show that most of the respondents came to South Korea to study (67%), to work (32.4%), and to join family (7%). The sum of these results is greater than 100% due to multiple answer choice selected by the survey participants. In addition, 51.4% of the respondents have plans to stay in South Korea for one to five more years, 13.4% want to live in South Korea as long as possible while 14.8% are planning to go back home immediately, and 19% have not decided yet.

4.2 Descriptive Statistics of ICT Usage

As defined in Chapter 3, one of the research questions is to examine how ICT is being used by migrant groups in South Korea and how it impacts their life. In order to answer those questions, several questions were asked. This section will present the results regarding ICT usage.

When people live overseas, they usually try to maintain contact with family and friends. Through this study, results show that the frequency of contact to family and friends in the country of origin is 41.3% for every day or almost every day, 41.3% for at least once a week, 13.3% for at least once a month, and 4.2% for less than once a month. For methods in which migrants contact family and friends 76.2% answered that they do so by Internet video call (Skype, Viber etc.) and 70% through chat (Facebook and Yahoo messenger, KakaoTalk, line, etc.). Following this, results show that 28% of the respondents use email to contact family and 35% make international phone calls while only 6% send mail by post. By interpreting these results, it shows that immigrants use ICT very frequently to maintain contact with their family and friends in their home country. Kabbar and Crump stated in their study that recent immigrants considered ICT as useful, relevant, and important for them and also perceived ICT as an innovation that gave them a relative advantage such as cost savings when communicating with friends and family members overseas (Kabbar & Crump, 2006).

According to research by IOM Migration Research & Training center, 95% of foreign workers (survey of 1,370 foreign workers from 14 countries) possess a mobile phone, 87% possess a computer, and 22% possess tablets. Main usages

of the Internet were chatting or using a messenger, and video and information seeking. Compared to results from a study in 2010, IT devices and Internet usage in 2013 have increased, and 85% of respondents in 2013 answered they use SNS (KakaoTalk, Facebook, etc.) very often (정기선, 2013).

Table 4-2 shows what information immigrants usually search for when using the Internet in South Korea. As shown in the table, immigrants usually get information on news, entertainment, transportation information, and job opportunities using the Internet. Vilhelmson and Thulin found that both recent movers and people actively planning to move use the Internet more frequently for information seeking purposes (Vilhelmson & Thulin, 2013).

Table 4-2 Information via Internet

Items	Frequency	Percent
News (world news, local news)	118	82.5
Public Services	50	35.0
Health Services	31	21.7
Job Opportunities	67	46.9
Housing Opportunities	25	17.5
Entertainment (concert, exhibition, festival and culture activities, etc.)	89	62.2
Transportation	72	50.3
Legal/Laws	23	16.1
Other	15	10.5

Results are subjected to multiple answer choices selected by survey participants.

Similarly, what services immigrants usually get through using the Internet was also examined. The results are shown in Table 4-3. The most common online services which immigrants get through using the Internet are online shopping, e-banking, air ticket booking, and other online reservations.

Table 4-3 Services via Internet

Items	Frequency	Percent
Online Shopping	96	67.1

E-Banking	84	58.7
Air Ticket Booking	64	44.8
Online Reservation (restaurant, cinema, etc.)	52	36.4
E-Application (job, training, immigration, etc.)	53	37.1
I don't get any services using the Internet	14	9.8
Other	5	3.5

Results are subjected to multiple answer choices selected by survey participants.

In previous years, there were many fears when it came to sending money abroad. Computer systems were less reliable and if the digital service was not available in the recipient's country, there was no choice but to send money by mail or bring it in person which can easily be intercepted and lost. The Internet has greatly changed this (Hamel, 2009). The efficiency and quickness of communication through ICT and services make remittances much more timely and likely than in the past. In this study, there was an attempt to reveal usage of ICT when immigrants send money back home. After eliminating respondents who did not send money back home (30%), 47.5% of the respondents answered that they use banks, 22.8% use online money transfers (MoneyGram, Western Union, etc.) while 32.7% use a cargo company or an individual to send money. Most of the respondents who send money by cargo company or individual are Mongolian since there are many small cargo companies operating in South Korea that deliver packages and money between Mongolia and South Korea.

Websites are the easiest way to get information for immigrants since the Internet is available all over South Korea. However, it is necessary to know whether websites are known by immigrants, are available in multiple languages, and if they are easy to use. Several websites operated by the government, public administration, and some other common websites run by private companies were examined. The list of websites examined include: the official website of

Seoul Metropolitan Government, Seoul Global Center which is a center to support civil affairs for foreigners, a travel information website, Korean Immigration Service, an online civil service site for foreigners, and some other online shopping and Korean portal sites. As Table 4-4 shows, the majority of the respondents (68.9-76.6%) don't use the websites or have never heard of some of the websites (english.seoul.go.kr, global.seoul.go.kr, www.visitseoul.net) which are operated by Seoul Metropolitan Government. However, immigrants actively use the immigration and e-government websites (immigration.go.kr, hikorea.go.kr) operated by the Korean government. Results also show that immigrants frequently use the Korean online shopping website (gmarket.co.kr) and the Korean portal (naver.com).

Table 4-4 Usage of Websites

Websites	I use this website when I need it (%)	I know this website, but I don't use it (%)	I've never heard of this website (%)
http://english.seoul.go.kr (Seoul Metropolitan Government Website)	23.4	32.8	43.8
http://global.seoul.go.kr (Seoul Global Center)	29.6	24.4	45.9
http://www.visitseoul.net (The official travel guide to Korea)	31.1	31.1	37.8
http://www.immigration.go.kr (Korea Immigration Service)	48.1	31.1	20.7
http://www.hikorea.go.kr (e-Government for Foreigner)	42.6	22.1	35.3
http://www.korea.net (Korean Culture and Information Service)	9.0	24.8	66.2
http://www.naver.com/(Korean portal website)	62.3	29.7	8.0
http://www.korea4expats.com (Information on Korea, by expats)	29.5	22.7	47.7

http://gmarket.co.kr/ (Korean online shopping website)	67.4	19.6	13.0
http://interpark.com (online auction, tickets)	29.3	28.6	42.1

All columns equal 100% and n=143

Researchers agree that the Internet offers free and easy communication with family, friends, and acquaintances regardless of time and place. Thus, SNS usage among immigrants should enhance contact with close friends and family who have remained in the country of origin or, in the case of remigration, to those who have remained in their destination country (Damian & Van Ingen, 2014). Through this study, it is found that immigrants use SNS frequently. The amount of respondents that said that they use SNS every day or almost every day is 96.5%. It implies that SNS is one of the important tools used to stay connected. Also, 61.3% of the respondents stated that most of the people that they interact with on SNS are from their country. In contrast, 35% said that they mostly interact with people in South Korea when using SNS. Damian and Van Ingen pointed out that online activities may help establish relations with natives, which is known to be an important success factor in acculturation processes. As explained in their findings, SNS helps strengthen ties. For instance, after having met someone for the first time, one connection strategy may be to search for information about that person using Facebook (possibly after adding that person as a Facebook friend) (Damian & Van Ingen, 2014).

Many people find jobs through ICT and it can lead many to migrate as a consequence (Hamel, 2009). For this study, it was presumed that immigrants in South Korea use ICT (Internet, website, mobile application, etc.) to find jobs as well. In order to check our presumption, we asked respondents how they usually

look for a job or get information about a job. The majority of respondents (70.6%) answered that they use online advertisements, 28% use company websites, and 14% use mobile applications. Besides that, 55.9% of the respondents get job information through acquaintances. Detailed results are presented in Table 4-5.

Table 4-5 Ways to Get Job Information

Items	Frequency	Percent
Newspaper, Poster	21	14.7
Company Website	40	28.0
Online Advertisement	101	70.6
Mobile Application	20	14.0
Through someone I know	80	55.9
Directly go to the company	12	8.4
Other	10	7.0

Results are subjected to multiple answer choices selected by survey participants.

It is easy to see how the inability to communicate in the host country language could make daily life difficult and at the same time hinder social, political, and economic integration (Collin & Karsenti, 2012). How immigrants learn and practice the Korean language was examined in this study. Results show that people prefer to learn the Korean language from Korean friends or colleagues (54.5%), by using training centers or tutor (53.8%), and by watching TV, dramas, and movies. Table 4-6 shows the results in detail. By examining the results, it is found that fewer people use online sources in their language learning. The most frequently mentioned website was “TalkToMeInKorean” (<http://www.talktomeinkorean.com>) which is operated by a group of Koreans. The website offers free interesting and funny video lessons prepared in English and Korean. Recently, they published a textbook for Korean learners. Another website mentioned was “Memrise” which is an online learning tool with

courses created by its community. Its courses are mainly used to teach languages, but they are also used for other academic and nonacademic subjects.

Table 4-6 Ways to Learn/Practice Korean

Items	Frequency	Percent
Language Training Center or Tutor	77	53.8
Korean Friends or Colleagues	78	54.5
Video Lessons from YouTube	25	17.5
Watching TV, Drama, and Movies	56	39.2
Online Courses	5	3.5
Websites	14	9.8
Mobile Applications	12	8.4
Other	22	15.4

Results are subjected to multiple answer choices selected by survey participants.

4.3 Factor Analysis Results

The goals of a factor analysis are typically to reduce the number of variables used to explain a relationship or to determine which variables show a relationship. The factor analysis in this paper consists of five steps. First, a justification of the chosen variables and sample size for the factor analysis is elaborated. Second, a preliminary analysis was conducted to test if the sample is suitable for a factor analysis. Third, factors were extracted and presented. Fourth, factors were rotated in order to see if any variables should not be included in the intended constructs. In the end, the reliability of the chosen construct was tested through Cronbach's alpha test.

Only variables that were subject to a perceptive opinion of the respondents were chosen to be included in the factor analysis. These variables were obtained by questions with five-point Likert-scales. Consequently, subjective variables like opinions and self-evaluations of ICT usage in integration were included in the

factor analysis, while objective variables like level of education, city of residence, and length of stay were not included.

For factor analysis, Kass and Tinsley recommend having between five to ten participants per variable (Kass & Tinsley, 1979). This factor analysis contains eighteen variables in total, which means that the analysis has $143/18=7.9$ respondents per variable. One can therefore conclude that the sample size is fair compared to the number of variables. However, other researchers (Tabachnick & Fidell, 2001) would argue that at least 300 cases should be included for factor analysis, and that 100 cases would make for a poor sample size. However, it was not possible to collect more data because of time restrictions, so the analysis had to continue with a sample size of 143.

To ensure a good factor analysis, variables should be correlated to some extent but not perfectly correlated (Field, 2009). The correlation matrix between the variables (Annex-2) was therefore scanned in order to see if there was any correlation coefficient above 0.9. One can also see from the correlation matrix that this requirement was satisfied.

Other important initial tests are the Keiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. A measure over 0.5 is barely acceptable, values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb (Kaiser, 1974). In the case of this study, the KMO variable was 0.752, and Bartlett's measure was also highly significant ($p<0.001$) and good enough for further analysis.

The principal component analysis of variables yielded four factors based on Kaiser's criterion of retaining eigenvalues greater than 1.0 (Field, 2009). The

first factor accounted for 32%, while all four factors accounted for 66% of the variance. The scree plot revealed a clear break after the fourth component. After examining the results, it was decided that several variables would be eliminated due to weak loadings. Then, to improve the interpretability of factors, the rotated factor solution was sought through varimax rotation (Kaiser Normalization) and shown in Table 4-7 which illustrates the factor loadings, eigenvalues for respective factors, and Cronbach's alpha.

Table 4-7 Factor Loadings

Factor	Component Symbol/ Label	Component				Eigen value	Cronbach's Alpha
		1	2	3	4		
Social Integration	SOC2 SNS	.882				3.490	0.720
	SOC3 ICT and Social Life	.752					
	SOC4 e-Inclusion	.615					
Cultural Integration	CULT3 Adaptation		.831			1.586	0.688
	CULT2 ICT as an Image		.808				
	CULT1 Cultural Info		.516				
	ECON3 ICT Skills			.889		1.097	0.719
Economic Integration	ECON4 New Business			.596			
Linguistic Integration	LING1 Language Barrier				.868	1.045	0.575
	LING3 Online Resources			.542			
	LING2 Learning Korean			.527			

Principal components method with varimax rotation; loadings ≥ 0.50)

SNS, ICT and social life, and e-Inclusion were grouped into one, making the components of Social Integration. As for adaptation, ICT as an image, and cultural information, they were put into another group, which is Cultural Integration. Two components, ICT skills for work and new business, were grouped as the third category as Economic Integration, and language barrier, online resources, and learning Korean were grouped as the fourth category as Linguistic Integration. All the components had loading in their respective factors without any cross-loading on any other factor, with the lowest loading being 0.516. Comrey and Lee indicated: that loadings in excess of 0.45 could be considered fair; greater than 0.55, good; 0.63, very good; and 0.71, excellent (Comrey & Lee, 1992). According to Nunnally, a scale with a Cronbach alpha higher than 0.7 is required in order to create a reliable construct of multiple variables (Nunnally, 1978). Table 4-7 shows that the two factors, Social Integration and Economic Integration satisfy the requirement. But researchers have different cut-off scales depending on their study. Gable and Wolf's assertion of the value higher than 0.6 for Cronbach's alpha is satisfied for the second factor as well (Gable & Wolf, 1993). The fourth factor shows a poor scale which is lower than 0.6. However, we continued our analysis since it is still acceptable even though it is poor.

Hypothesis 1: *The components for overall integration measures would correspond to the respective factors: social integration, economic integration, linguistic integration, and cultural integration.* It was supported as the components employed from factor analysis fit to the categories of the proposed

model.

Reliability analysis was also conducted for dependent variable migration which consists of four items. Cronbach's alpha for all four items was 0.751 (not shown in the table) which satisfies the requirement.

As the results show, SNS (0.882) in the first factor has the highest weight among other components. In other words, respondents expressed that SNS is important to be connected and informed. Also, it was shown that when people live overseas, they tend to use SNS more frequently to maintain contact with their society of origin and also become part of the host society. For the second factor, Cultural Integration, adaptation (0.831) and ICT as an image (0.808) had higher weight compared to other components. This means respondents agreed that ICT helps migrants to adapt to Korean culture easily, and they see ICT as an "image" of South Korea. Adapting to the culture is an important part of integration, and cultural difference can cause many issues and problems. Since ICT is highly developed in South Korea, it is required to have certain ICT skills to work effectively. Therefore, ICT skills for jobs (0.889) occupied the highest weight among the components. This result is compatible with Garrido and Rissola et al.'s research which concluded that ICT knowledge is relevant for migrants' employability (Garrido et al., 2010). As expected, language barrier (0.868) showed the highest weight among other components since proficiency in language is the main determinant for linguistic integration.

4.4 Regression Analysis Results

This part of the analysis looks at the predicting power of the established

construct on the dependent variable using linear regression, and inspects if the established hypothesis can be confirmed or disconfirmed. Having extracted four factors from eighteen components, the factor scores were saved as variables through the regression method, in which the factor loadings were adjusted to take into account the initial correlations between variables and differences in units of measurement and variances are stabilized (Field, 2009). The induced scores were then used for multiple regression. Social Integration, Economic Integration, Linguistic Integration and Cultural Integration were determined as independent X variables while Migration as dependent Y variable.

Before conducting regression analysis, preliminary tests were carried out to test if the variables in the model were suited for a regression analysis. Basically three tests were conducted and they were normality, correlation and multicollinearity, and heteroscedasticity.

A very important assumption in regression is that the dependent variable is normally distributed. Normality is used to describe a symmetrical, bell-shaped curve, which has the greatest frequency of scores around in the middle combined with smaller frequencies towards the extremes (Pallant, 2005). The regression in this paper has migration as the dependent variable. If the dependent variable is not normally distributed, there is little point in performing regression analysis because a major assumption of the model is broken. A Shapiro-Wilk's test (Shapiro & Wilk, 1965) and a visual inspection (Figure 4-1) of histogram, normal Q-Q plots and box plots showed that the dependent variable was approximately normally distributed, with a skewness of -0.018

(SE=0.203) and a kurtosis of -0.200 (SE=0.403).

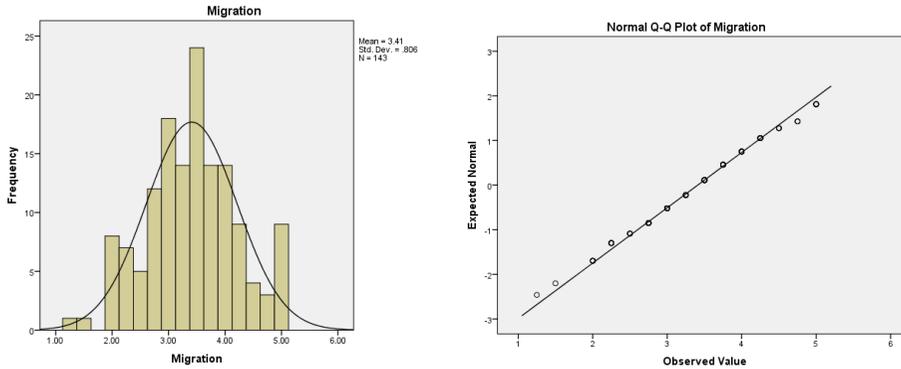


Figure 4-1 Frequency Distribution and Normal Q-Q Plot of Dependent Variable

Before conducting regression analysis, correlation analysis was also made. As the nature of the data was ordinal (five-point Likert scale), parametric tests were required as the underlying scale is continuous for each construct (Tabachnick & Fidell, 2001). Therefore, Pearson’s correlation was applied for a two-tailed test, seeking a relationship between the independent and control variables, but the direction of the relationship was not predicted. Table 4-8 exhibits the correlation results among independent variables and demographic variables.

Table 4-8 Pearson's Correlation Matrix

	SOC	ECON	LING	CULT	GEN	AGE	CITY	STAY	EDU	JOB	PLAN
SOC	1.00										
ECON	.423**	1.00									
LING	.333**	.254**	1.00								
CULT	.407**	.384**	.447**	1.00							
GEN	-.013	-.121	-.086	-.072	1.00						
AGE	.070	.088	.123	.024	-.048	1.00					
CITY	-.021	.041	-.067	-.099	-.123	.045	1.00				
STAY	.049	-.042	.020	.087	-.071	-.012	.088	1.00			
EDU	.114	.030	.056	.184*	-.032	-.068	.003	.122	1.00		
JOB	-.000	.026	.014	.125	.099	.060	-.088	-.307**	-.008	1.00	
PLAN	.159	.055	.098	.056	-.001	.019	-.080	.129	.000	.112	1.00

** . Correlation is significant at the 0.01 level (2-tailed)

* . Correlation is significant at the 0.05 level (2-tailed)

[SOC-Social Integration; ECON-Economic Integration; LING-Linguistic Integration; CULT-Cultural Integration; Gender; CITY-City of Residence; STAY- Length of Stay; EDU-Education Level; JOB- Employment; PLAN- Plan to Stay]

The correlation results in Table 4-8 exhibits that Social Integration is positively related to Economic Integration with a Pearson coefficient of 0.423; to Linguistic Integration, 0.333; and to Cultural Integration, 0.407. Similarly, Economic Integration is positively related to Linguistic Integration with a coefficient of 0.254; and to Cultural Integration, 0.384. Also there is a positive relationship between Linguistic and Cultural Integration. From this we can see different types of integrations have positive relationships with each other. In addition to that, Cultural Integration is positively related to education levels and employment (JOB, dummy variable which equals 1 is a person employed) is negatively related to length of stay (STAY, dummy variable which equals 1 if person stayed in South Korea less than three years). The correlation matrix shows that there are no variables that have excessive correlations ($r > 0.9$) between them.

To test the multicollinearity, Variance Inflation Factor (VIF) is observed. The VIF values ranged from 1.062 to 1.228. If the VIF values are below 10, then we can claim that there is not any evidence of multicollinearity (Field, 2009).

As regression models should be assumed to have a constant variance of residuals (homoscedasticity), one has to check if this assumption is met. One way of doing this is to look at the plot in Figure 4-2 which is a scatterplot of standardized residuals against standardized predicted values. The graph should show a random array of dots that are evenly dispersed around zero. If, for example, the graph funnels out, there are chances that there is heteroscedasticity

in the sample. Also, if the graph plots any sort of curve, there are chances that the data has broken the assumption of linearity. In this case however, the graph shows a random dispersion around zero, and one can conclude that the assumption of homoscedasticity has been met.

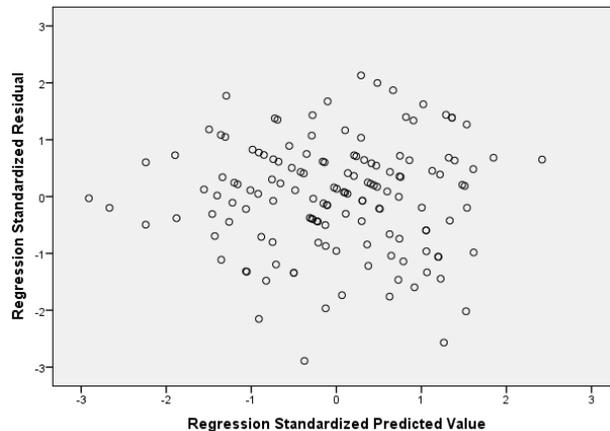


Figure 4-2 Heteroscedacity: Migration

After preliminary tests were carried out, regression was run employing all control variables for Migration (MIG).

$$MIG = \beta_0 + \beta_1 SOC + \beta_2 CULT + \beta_3 ECON + \beta_4 LING + \beta_5 GEN + \beta_6 AGE + \beta_7 CITY + \beta_8 STAY + \beta_9 EDU + \beta_{10} JOB + \beta_{11} PLAN + \epsilon_i \quad (4.1)$$

[Where, SOC = Social Integration; ECON = Economic Integration; LING = Linguistic Integration; CULT = Cultural Integration; GEN = Gender; CITY = City of Residence; STAY = Length of Stay; EDU = Education Level; JOB = Employment; PLAN = Plan to Stay]

The results of the regression are presented in Table 4-9. The model explained 35% (adjusted R^2) of the variance. The model ($F = 6.165$, $P < 0.001$) was

significant, where F-ratio represents the ratio of improvement in prediction as a result of fitting the model relative to the inaccuracy that still exists in the model (Field, 2009). Therefore, the significance of each variable was tested.

Table 4-9 Regression Result-Migration

	Standardized Coefficients		
	Beta	t	Sig.
(Constant)		13.772	0.000
Social Integration**	0.224	3.021	0.003
Cultural Integration**	0.228	3.024	0.003
Economic Integration	0.011	0.146	0.884
Linguistic Integration*	0.147	1.999	0.048
GENDER	0.071	0.964	0.337
AGE	-0.136	-1.855	0.066
CITY***	0.267	3.612	0.000
STAY	0.125	1.583	0.116
EDU*	0.150	2.018	0.046
JOB*	0.169	2.154	0.033
PLAN**	0.222	2.980	0.003
$R^2 = 0.345$			
Adjusted $R^2 = 0.289$			
$F = 6.165$ with $p < 0.001$			

*** significant at 0.001, ** significant at 0.01, * significant at 0.05

Table 4-9 depicts that seven variables have significant impact on migration, and the rest of the other variables do not have any relationship or impact. The β values for Social Integration (0.224), Cultural Integration (0.228), and Linguistic Integration (0.147) signify that they have a positive relationship with migration. More specifically, immigrants use ICT for their social, cultural, and linguistic integration, and it has a positive impact on their migration. However, Economic Integration doesn't show any significance in regression analysis.

Hypothesis 1: *People use ICT for their social integration into society and it has*

a positive impact on migration: is supported as β value (0.224) is positive and is significant ($p < 0.01$).

Hypothesis 2: *People use ICT for their economic integration into society and it has a positive impact on migration*: is rejected since there is no significant result.

Hypothesis 3: *People use ICT for their linguistic integration into society and it has a positive impact on migration*: is supported as β value (0.147) is positive and is significant ($p < 0.05$).

Hypothesis 4: *People use ICT for their cultural integration into society and it has a positive impact on migration*: is supported as β value (0.228) is positive and is significant ($p < 0.01$).

City is a dummy variable, (dummy = 1 if resident of Seoul) and it has a positive Beta value (0.267). The positive β value suggests that people living in Seoul evaluated their migration higher than those who live in other cities in South Korea. In other words, immigrants in Seoul are more satisfied and integrated in the host society. Education (EDU) and employment (JOB) are also dummy variables, and both have a positive impact on migration. They show that the migration experience will differ by level of education and whether an immigrant is employed or not. One other dummy variable is PLAN, which shows migrants' willingness to extend their stay in South Korea. Results show that people who are planning to stay longer have a good evaluation on their migration.

Social Integration (0.224) and Cultural Integration (0.228) showed slightly higher β values compared to Linguistic Integration (0.147) which may imply

respondents' perception of importance toward those integrations. In other words, migrants think that social and cultural integration is more important than linguistic integration for overall migration. Similarly, city variable (0.267) had a higher β value compared to other dummy variables for education and employment. It implies that foreigners who live in Seoul are more satisfied compared to those who are in the suburbs and other cities of South Korea.

The remaining variables are not significant. In other words, the remaining independent variables (Economic Integration, Gender, Age, and Length of Stay) have no impact on the dependent variable. A change in those independent variables do not cause a change in the dependent variable.

4.5 Summary of the Results

Factor analysis was done to create new variables and indices. The objective of applying factor analysis was to ensure that unnecessary items were not included in analysis. In other words, it was done to find out how well each component loads onto the factor it was intended to measure. Therefore, factor analysis was assessed for independent variables using SPSS 21.0. Principal component analysis with varimax rotation resulted in four separate factors representing components for social, economic, linguistic, and cultural integration. The result of the pattern matrix is reported in Table 4-7.

According to the regression result, it is found that immigrants use ICT in their social integration, cultural integration, and linguistic integration, and these integration all have a positive impact on their migration. In addition to that, results show that city of residence, specifically whether an immigrant lives in

Seoul or not has an impact on migration. Similarly, level of education and employment status has a certain impact on migration, in which people who are employed evaluated their migration as satisfied. Many people (66.2%) expressed that they want to extend their stay in South Korea, and this variable (PLAN) shows a positive relationship with the dependent variable migration.

Table 4-10 provides a brief summary of each hypothesis, the results from the tests, and a reference to where one can find evidence of the results.

Table 4-10 Summary of Hypothesis

Hypothesis	Result	Reference
H1: The components for overall integration measures would correspond to the respective factors: social integration, economic integration, linguistic integration, and cultural integration.	Accepted	Table 4-7 Factor Loadings
H2: People use ICT for their social integration into society, and it has a positive impact on migration.	Accepted	Table 4-9 Regression Result
H3: People use ICT for their economic integration into society, and it has a positive impact on migration.	Rejected	Table 4-9 Regression Result
H4: People use ICT for their linguistic integration into society, and it has a positive impact on migration.	Accepted	Table 4-9 Regression Result
H5: People use ICT for their cultural integration into society, and it has a positive impact on migration.	Accepted	Table 4-9 Regression Result

4.6 Discussion

Data was collected using an online survey from foreigners who are living in South Korea. Data analysis started with a statistical description of the data.

Then, the factor analysis was performed to create new variables and indices. The results indicated a good fit of components, suggesting that our proposed model was appropriate in investigating how immigrants use ICT in their integration into the host society and the effects of the usage on their migration. From the results of the multivariate regression analysis, it is found that three out of four independent variables show statistically significant results. These variables are social integration, linguistic integration, and cultural integration while economic integration does not show significant results in regression analysis.

Regarding the unsupported hypothesis related to economic integration, there are two plausible explanations for the lack of support for this hypothesis. First, it might be due to the failure of components of this variable not being able to express the factor very well. According to factor analysis results, only two out of four items were chosen for the factor, while others were not compatible. Another reason might be the fact that survey respondents were mostly students or people who had arranged their jobs before they came to Korea. Thus, for them there was not much necessity in using ICT to assist them in looking for a job or marketing themselves in the labor market. As Hamel stated in his paper, ICTs such as the Internet are assisting countless people around the world searching for and finding jobs which will lead many to migrate as consequence (Hamel, 2009). Our study does not examine the pre-migration phase such as how migrants' found jobs or how they decided to migrate etc.

The dependent variable *Migration* was designed to measure the self-assessment of immigrants' migration experience in South Korea. It was believed from

previous literatures that ICT has a certain impact on the migration experience. In the study, examining the relationship between ICT and migration through different types of integrations was attempted: social, economic, linguistic, and cultural.

The independent variable *Social Integration* was designed to measure how immigrants use ICT in their social integration into the host society. According to Redecker et al., ICTs facilitate and accelerate the social integration of newly arrived immigrants and make relevant information available to them (Redecker et al., 2010). Accordingly, the H2 hypothesis states that immigrants use ICT for their social integration into society and it has a positive impact on migration. The regression results confirm this hypothesis and show consistency with previous literatures. Results show that SNS is important to be informed and connected when people live overseas, and it helps to integrate into society and maintain contact with family. Also, immigrants express the importance of ICT for participation in social life in South Korea. According to a study by Gi-Soon Yeon, there are several websites, portals, and TV channels which help with the adaptation of multicultural families in South Korea. Websites such as Da-Nuri (<http://liveinkorea.mogef.go.kr>), National Center for Multicultural Education (<http://www.damunwha-edu.or.kr>), Dibrary (<http://multiculture.dibrary.net>), Olly-Bolly (<http://www.ollybolly.org>), Tong-Tong (<http://www.tongtongdamunhwa.co.kr/>), and Mango-Net (www.mangonet.kr), and TV channels such as MNTV (<http://www.mntv.net>) and Salad TV (<http://saladtv.kr/>) are operating for the integration, education, and adaptation of migrant families. However, some websites are only in the Korean language

and some do not have SNS support, etc. There are some needs for improvement (손연기, 2014).

The other independent variable *Cultural Integration* also shows significant results which means immigrants in South Korea can get information about Korean culture using the Internet, and ICT helps them to adapt to the culture easily. In addition to that, respondents accept the statement that ICT is seen as an “image” of South Korea. Immigrants face the challenge of integrating themselves within their new living context, maintaining their own culture, and articulating a new hybrid migrant identity (Hepp et al., 2009). The use of the Internet by immigrants can change the reality of living abroad through enhanced linkages which can allow immigrants to maintain traditions while abroad. For example, celebrating a cultural festival or religious ceremony, making friends or finding a spouse, or simply finding products that originate from their countries can be maintained. In a sense, “ICTs are bringing the migrant home and bringing home to the migrant. These technologies allow them to feel synchronized” (Hamel, 2009).

Similarly, independent variable *Linguistic Integration* was designed to measure immigrants’ language barrier and how immigrants use ICT to learn Korean language. Results show that immigrants use ICT in their linguistic integration and it has a positive impact on migration. The process of language acquisition could be facilitated or accelerated by ICT in various ways including e-learning as well as usage of technologies. Linguistic integration and overall integration are linked in a complex relationship where other factors are also in

consideration including social, cultural, and professional factors (Collin & Karsenti, 2012). The study results are consistent with Collin's statement. However, in descriptive statistics of the result, it can be seen that there is a need to expand online sources for learning Korean language.

The correlation matrix of the variables shows a positive relationship between four independent variables: social, economic, linguistic, and cultural integration (Table 4-8). This is not a surprising relation as those integrations could impact each other. For instance, as Collin mentioned in his paper, inability to communicate in the host country language could make daily life difficult and at the same time hinder social, political, and economic integration (Collin & Karsenti, 2012). Also, Redecker et al. emphasized that ICT provides learning and training opportunities for immigrants which helps to foster their language and cultural skills, thus facilitating social and economic integration (Redecker et al., 2010).

Researchers agree that mastering ICTs are a prerequisite for migrants if they wish to fully integrate into the host society and become full participants (Codagnone & Kluzer, 2011; Collin, 2012). In the study, most of the respondents (88.8%) evaluated their basic ICT skills as very good or good. Basic ICT skills include using a computer and basic software, downloading and uploading files, using the Internet, email, smartphone, SNS, online services, finding information using the Internet, etc. It can be concluded as migrants living in South Korea have a high level of basic ICT skills since ICT development is high in South Korea. However, something to consider is the limitations of the survey since most of the respondents are highly educated.

To sum up, the study identifies three out of four factors which have an impact on overall migration. Specifically, migrants use ICT in their social, cultural, and linguistic integration and this usage effects their self-assessment of migration. The result offers the validity of the model on ICT and migration, despite the fact that it hasn't been applied in this field before.

Chapter 5. Conclusion and Policy Implications

In the previous chapters, factor analysis and multivariate analysis were conducted to test the associations and effects among variables. This chapter deals with the conclusion, policy implications, and limitations.

5.1 Conclusion

The study is a result of the analysis of the relations between ICT and migration in the case of South Korea. It investigated the impact of ICT usage in migrants' integration and the overall migration process. Factor analysis and multivariate regression analysis were done by using the data gathered through a survey questionnaire. From the results of the study, we were able to see how ICT is being used by migrant groups in South Korea and how it impacts their lives. Also relations between ICT for Integration (social, economic, linguistic, and cultural) and overall migration were revealed. Policy implications and insights which can support immigration and multiculturalism policy are derived from the result of analysis.

The impact of ICT on migration has started attracting researchers in the last several years since technology has changed drastically in the world which we live. There are series of studies which provide a broad overview of policies and ICT related initiatives conducted in EU27 Member States. There are also a number of studies focused on migrants' use of social media, communication practices, adoption of ICT by immigrants, integrations into a host society, ICT to promote education and employment opportunities, empowerment of youths and women, and so on. However, all these studies are mostly based on a

qualitative approach and there are no comprehensive models which can explain the relationship between ICT and migration. It is noteworthy that in this paper's study, a new comprehensive model was proposed and a quantitative research approach is used. The model was proposed to reveal ICT usage in social, economic, linguistic, and cultural integration and its effect on overall migration. Except for economic integration, the hypothesized relations between ICT for integrations and migration were fully supported by the data.

With foreign residents now accounting for more than three percent of the population of a country that long defined itself as homogenous, the South Korean government is taking multiculturalism seriously. As one of the most advanced countries in ICT developments, South Korea was chosen as a case study. Results show that foreigners living in South Korea use ICT (including the Internet, mobile phones, websites, SNS, etc.) very often to maintain contact with family and friends in their country of origin and also to get information and participate in social life in the host society.

This study is expected to contribute toward the empirical and theoretical background of ICT usage by immigrants and its relationship with overall migration. Since the proposed model and approach used is the first in this field, there were many limitations and drawbacks which should be considered and improved upon in further research. Nevertheless, the findings of the study provide several significant implications for policy related ICT for integrations by immigrants in South Korea and other replicative countries.

5.2 Policy Implications

This study has various practical implications which can contribute to build a multicultural society in South Korea. The Korean government, especially Korea Immigration Service, (KIS) is aiming to create safe, harmonious, and prosperous society for foreigners and nationals alike (KIS, 2014). KIS devised the Second Basic Plan for Immigration Policy that will lead the next phase of immigration policies and multiculturalism. The plan contains upgrades to the various systems and programs that will facilitate the life and settlement of foreigners in Korea. From the results of this study, several implications that may contribute to design rational policies were derived.

- According to the study, immigrants are highly motivated to adopt and use ICTs as these are seen as enablers for their integration into the host society. Nevertheless, there is a need for more strategic and focused policies explicitly using ICT to target foreigners. ICT initiatives should be reflected on non-ICT policy domains such as employment, health, and education.
- Since immigrants use ICT for their social integration into society, the government should use SNS as a tool to disseminate information and listen to immigrants' voices. Moreover, SNS would be helpful to observe whether immigrants are able to integrate into the host society or not and what can be improved to help them. When people live overseas, they tend to be part of a network and share experiences, discuss each other's common problems, try to find solutions to problems regarding legal status, documentation, citizenship, and also discuss cultural and ethnic self-representations and how they feel about their multiple identities in everyday life. For instance,

Rete G2- Second Generation³ is a National organization founded by kids of immigrants and refugees born and/or raised in Italy. By creating this kind of network, it would be easier to know what the problem is and how it should be solved.

- Results of the study show that using ICT for linguistic integration has a positive effect on the overall migration process. Also, according to the survey results, the majority of respondents (80.4%) agreed that Korean language knowledge is necessary to work, study, and live comfortably in Korea. For that reason, a public organization (Seoul Global Center) and some other institutions provide free Korean classes for foreigners. However, because of distance and time limits, not many people can attend those classes. Also, it is found that there aren't many online resources to learn Korean, and most foreigners learn Korean through language centers or informal ways. Thus, there is an indispensable need of richer and more flexible online resources for Korean language learning. Online resources include e-learning, websites, video, audio lessons, software, mobile applications, etc. Since language is one of the important factors for immigrants' integration, the government should initiate and provide support to create more online resources which can help migrants learn Korean in a more convenient way.
- Migrants face the challenge of integrating themselves within their new living context and maintaining their own culture and/or articulating a new (hybrid) migrant identity. From the results of the study, it is shown that ICT

³ <http://www.secondegenerazioni.it>

for cultural integration has a positive effect on overall migration. Thus, there is a need for ICT initiatives which can help immigrants to keep their culture while adapting in Korean culture. Moreover, introducing Korean culture to foreigners and foreign culture to Koreans using ICT could help people reach cultural integration successfully.

- Websites are the easiest way to get information for immigrants, since the Internet is available throughout all of South Korea. However, it is necessary to pay attention to whether or not the websites intended for immigrants are known to the immigrants. For instance, according to the results of this study, the majority of the respondents (68.9-76.6%) don't use websites or have never heard of certain websites (english.seoul.go.kr, global.seoul.go.kr, www.visitseoul.net) which are operated by Seoul Metropolitan Government. Therefore, Seoul Metropolitan Government needs to vitalize and increase the popularity of their websites among immigrants. In order to make websites known, some actions should be taken such as activating SNS pages, collaborating with foreign bloggers who write about Korea and their experiences in Korea, organizing events including a photo or essay contest and short trips. Results show that public service information usually does not reach immigrants who really need it. This is also linked to unfamiliarity of public websites.
- The findings of this study indicate that whether immigrants live in Seoul or not is one of the significant factors which impact the overall migration experience for them. Hence, it is recommended that the Korean government implement a policy dedicated to other cities and suburbs of the country.
- In order to create a multicultural society, not only is government policy

important, but the attitude of native citizens also has a big impact. According to the results of this study, 53.2% (strongly agreed or agreed) of the respondents think Korean society is not ready to receive multiculturalism, and 62.3% (strongly agreed or agreed) of the respondents accepted the fact that they have had an experience where they were discriminated against for being a foreigner in South Korea. Results indicate that it is necessary to pay more attention to this issue. Several actions can be taken to prepare citizens for multiculturalism such as teaching understanding in elementary school, including foreigners in public media, organizing events which involve both Koreans and foreigners, giving notion to citizens about the advantage of being multicultural, activating a social network movement, etc. An example of using ICT for providing anti-discrimination support is the “Migration Online⁴” website in Germany which contains useful information for the integration of migrants as it offers them different opportunities to share their experiences and act against discrimination.

5.3 Limitation and Further Research

The study has some aspects that may limit the interpretation of the results. The variables used in this study were designed by the authors and had never been used in earlier research. There is no similar research to compare or evaluate this study to.

It is important to point out the weakness of the population that was used in this

⁴ <http://www.migration-online.de>

study. The survey was taken online and could not reach various groups of people such as unskilled workers, refugees, etc. Also, the sample is relatively small at 150 respondents. However, the sample was diverse in terms of age, length of stay in South Korea, level of Korean language, and nationality that have helped in increasing the generalizability of the findings.

The study of ICT and migration demands more in-depth study, direct and indirect interviews, and focus group discussions. This study has heavily relied on quantitative data and information. Combining quantitative and qualitative analysis could have shown more insights and clearer explanations.

This study touched upon whether immigrants use ICT or not and the effect of its use on migration. For further research, one should take a closer look at the factors motivating migrant's use of various ICT devices. It is likely that not all migrants use ICT devices equally. It would be interesting to examine how and why various factors impact usage of ICT by migrants and to make a comparison between countries. Another research avenue could include not only positive but also negative impacts of ICT on migrants. Since migrants and host societies use ICT for different end goals, various impacts would emerge.

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Annex 1: Summary Table of Literature Review

No.	Title/Author/Year	Goal of study	Methodology	Concepts extracted
1	Kabbar, E. F. and B. J. Crump (2006). "The factors that influence adoption of ICTs by recent refugee immigrants to New Zealand."	To identify the factors that influence ICTs' adoption by recently arrived immigrants from developing countries, the majority of whom are refugees, and who had settled in Wellington, New Zealand's capital city.	Qualitative study, using an analytical framework of Rogers' Diffusion of Innovation Theory, (Semi-structured interviews, 32 immigrants)	ICT and Migration
2	Burrell, J. and K. Anderson (2008). "I have great desires to look beyond my world': trajectories of information and communication technology use among Ghanaians living abroad."	To understand how the personal aspirations and social landscapes of Ghanaians living in London shaped their use of a constellation of ICTs such as camcorders, digital cameras, the internet and mobile phones.	Qualitative study, ethnographic approach (Interviews with 17 Ghanaians)	ICT and Migration Ties
3	Diminescu, D. (2008). "The connected migrant: an epistemological manifesto."	Culture of bonds became visible and highly dynamic once migrants began massively to use modern ICT.	Literature review	Connected migrant
4	Diminescu, D., et al. (2008). Study on Social Computing and Immigrants and Ethnic Minorities: Usage Trends and Implications	To explore the usages of Web 2.0 applications (social computing) among immigrants and ethnic minorities in order to understand their potential benefits and risks for the integration and participation of these groups in European society.	Case study (Web Information System)	Connected migrant Bonding& Bridging
5	Kluzer, S., et al. (2008). "Overview of digital support initiatives for/by immigrants and ethnic minorities in the EU27."	Surveyed a wide range of ICT-based initiatives carried out for and/or by immigrants and ethnic minorities in all EU27 Member States.	Case studies (France, Germany, Spain and the UK)	ICT and Migration

6*	Borkert, M., et al. (2009). "The State of the Art of Research in the EU on the Take up and Use of ICT by Immigrants and Ethnic Minorities."	To provide a snapshot of the current state of the art of research undertaken in Europe on ICT and migrations.	Literature Review Survey Questionnaire (150 publications, 500 individuals, 40 questionnaire)	Connected migrant Ties Digital skills
7	Cornelius, I., et al. (2009). Virtually local: social media and community among Polish nationals in Dublin.	To examine the impact of social media (including social networking technologies) on migration strategies and integration.	Qualitative study (Semi-structured interview, 26 Polish nationals in Ireland)	Ties Economic Integration
8	Diminescu, D., et al. (2009). "ICT supply and demand in immigrant and ethnic minority communities in France, Germany, Spain and the United Kingdom."	Surveyed a wide range of ICT-based initiatives carried out for and/or by immigrants and ethnic minorities in all EU27 Member States.	Case studies (France, Germany, Spain and the UK)	ICT and Migration
9	Diminescu, D., et al. (2009). "ICT for Integration, Social inclusion and Economic Participation of immigrants and ethnic minorities: Case Studies from France."	Two cases to explore the role of ICT for the digital and social inclusion and/or the socio-cultural integration of immigrants and ethnic minorities, and one case to address aspects related to the labour market and economic participation.	Case studies (3 cases in France)	Socio-cultural Integration Economic Participation Bottom-up Integration
10	Hepp, A., et al. (2009). "ICT for Integration, Social Inclusion and Economic Participation of Immigrants and Ethnic Minorities: Case Studies from Germany."	Two cases to explore the role of ICT for digital and social inclusion and/or the socio-cultural integration of immigrants and ethnic minorities, and one case to address aspects related to labour market and economic participation.	Case studies (3 cases in Germany)	Socio-cultural Integration Economic Participation
11	Maya-Jariego, I., et al. (2009).	Two cases to explore the role of ICT for the digital and social inclusion and/or the	Case studies (3 cases in Spain)	Socio-cultural Integration

	"ICT for Integration, Social Inclusion and Economic Participation of Immigrants and Ethnic Minorities: Case Studies from Spain."	socio-cultural integration of immigrants and ethnic minorities, and one case to address aspects related to the labour market and economic participation.		Economic Participation
12*	Hamel, J.-Y. (2009). "Information and communication technologies and migration."	To see how migrants are making use of ICTs and the importance that these technologies have come to occupy in their life.	Literature review	Economic Integration Cultural Integration
13	Garrido, M., et al. (2010). "Immigrant women, e-skills & employability in Europe."	To investigate the role of e-skills in advancing the employability of immigrant women in four countries: Hungary, Italy, the Netherlands, and Spain.	Qualitative study (Survey of 375 immigrant and 155 native-born women)	Economic Integration Linguistic Integration ICT skills
14	Redecker, C., et al. (2010). "Using information and communication technologies to promote education and employment opportunities for immigrants and ethnic minorities."	To outline different ways in which ICT can enhance, improve and complement mechanisms fostering the social and economic integration and inclusion of IEM.	Case studies	Social Integration Economic Integration Language Integration
15*	Codagnone, C. and S. Kluzer (2011). ICT for the Social and Economic Integration of Migrants into Europe	It explores the relation of IEM with ICT and new digital media, by addressing holistically the supply and demand sides.	Literature review Fieldwork Survey	ICT appropriation Bonding& Bridging Social Integration Economic Integration
16	Kluzer, S., et al. (2011). "Language learning by adult migrants: policy challenges and ICT responses."	To reveal use of ICT for learning the host country's language by adult migrants in the EU.	Literature review Fieldwork	Linguistic Integration
17	Komito, L. and J. Bates (2011).	To describe ICT practices of Polish and	Qualitative study	Ties

	Migrants' information practices and use of social media in Ireland: networks and community.	Filipino nationals in Ireland	(Interviews with over 65 migrants)	ICT and Migration
18	Benítez, J. L. (2012). "Salvadoran transnational families: ICT and communication practices in the network society."	To focus on how ICTs are a crucial aspect in the configuration of new communication processes and practices among transnational families in the context of international migration.	Case studies	Ties ICT and Migration
19	Collin, S. (2012). "ICTs and Migration: The Mapping of an Emerging Area of Research."	To paint a picture of migration and ICTs, from both a scientific and social perspective.	Literature review	Bonding& Bridging Chart of ICT devices for Migration Diaspora, transnationalism, e- inclusion
20	Collin, S. and T. Karsenti (2012). "Facilitating linguistic integration of immigrants: an overview of ICT tools."	The potential contribution of ICT to the linguistic integration of immigrants is explored	Literature review Analysis of ICT tools	Linguistic Integration
21	Kozachenko, I. (2013). "Horizon Scanning Report: ICT and Migration."	To classify contemporary studies on migration and ICT, identify limitations of the current research and to suggest new directions and methods of investigation	Literature review	Ties Economic Integration Cultural Integration Diaspora, transnationalism, network analysis
22	Linda Ra ftree, K. A., and Anika Ganness (2013). "Modern Mobility: The role of ICTs in child and youth migration."	An overview of how children and youth on the move are using ICTs of their own accord and how civil society organizations are integrating ICTs into their work with and for children and youth migrants.	Literature review Case study	ICT and Migration

23	Rissola, G. (2013). ICT to support the Everyday Life Integration of Immigrants in the European Union: An Online Survey of Connected Migrants-First Methodological Report	To collect quantitative based evidence on the adoption and uses of ICT by third-country nationals in Europe. To examine to what extent technology can accelerate or trigger the process of integration of immigrants in their hosting societies.	Quantitative study Online survey	Connected migrants Social integration Economic Integration
24	Vilhelmson, B. and E. Thulin (2013). "Does the Internet encourage people to move? Investigating Swedish young adults' internal migration experiences and plans."	To explore Internet-based information seeking practices associated with actual migration experiences and with current plans to move to another place.	Quantitative study (survey of 750 young migrants,)	ICT and Migration
25	Alex, B. and M. Vancea (2014). "Connected Immigrants? Four Methodological Challenges for the Analysis of ict Use through Survey Data."	4 methodological challenges in the analysis of migrant populations' adaptation to the network society through survey data: absence of relevant variables, possible measurement errors in the dependent variable, data collection problems and endogeneity.	Literature review Case study	Connected migrants
26	Platt, M., et al. (2014). "Migration and Information Communications Technology Use: A Case Study of Indonesian Domestic Workers in Singapore."	This paper explores the use of ICT among Indonesian Foreign Domestic Workers working and living in Singapore.	Survey (n=201), in depth interview (n=38)	Ties

Annex 2: Factor Analysis- Correlation Matrix

	Well informed	SNS	ICT and Social life	e-Inclusion	Websites	Look for a job	Market myself	ICT skills	New business	Language barrier	Learning Korean	Online resources	Necessity	Cultural info	ICT as an image	Adaptation	Multiculturalism	Discrimination
Well informed	1.0																	
SNS	.038	1.0																
ICT and Social life	.110	.565	1.0															
e-Inclusion	.259	.367	.315	1.0														
Websites	.323	.129	.259	.196	1.0													
Look for a job	.111	.126	.274	.182	.162	1.0												
Market myself	.140	.218	.147	.195	.263	.567	1.0											
ICT skills	.272	.011	.122	.225	.090	.422	.214	1.0										
New business	.155	.398	.415	.272	.208	.449	.292	.429	1.0									
Language barrier	.213	-.137	-.055	.115	.243	.065	.051	.016	-.054	1.0								
Learning Korean	.307	.198	.267	.258	.101	.297	.202	.204	.335	.243	1.0							
Online resources	.291	.040	.261	.154	.288	.257	.184	.326	.328	.289	.405	1.0						
Necessity	-.031	.103	.155	.009	.045	.009	.003	-.220	.133	.205	.110	.170	1.0					
Cultural info	.262	.106	.227	.176	.281	.292	.343	.278	.260	.130	.278	.368	.084	1.0				
ICT as an image	.187	.108	.264	.214	.271	.475	.407	.223	.396	.087	.324	.247	.097	.407	1.0			
Adaptation	.046	.102	.326	.141	.145	.390	.258	.106	.235	.161	.320	.272	.196	.296	.530	1.0		
Multiculturalism	.188	.133	.282	.082	.328	-.001	.033	-.178	-.016	.162	.275	.136	.116	.081	.037	.257	1.0	
Discrimination	-.108	.071	.125	-.104	.287	.011	.077	-.029	.005	.030	-.083	-.005	-.024	.123	.067	.035	.196	1.0

Annex 3: Questionnaire

ONLINE SURVEY OF CONNECTED MIGRANTS

The purpose of this questionnaire is to better understand how immigrant communities in the South Korea use Information and Communication Technologies (ICT) and the effects of this use on their social, economic, linguistic and cultural integration to the host society. By ICT we mean all kinds of digital tools and applications, in particular those based on computers; the Internet, the web and social networking sites; mobile phones, smart phones and other mobile devices.

We greatly appreciate your participation in this study and thank you in advance for your consideration and input.

1. How often do you contact your family/friends in your country? (Please select one)
 - Every day or almost every day
 - At least once a week (but not every day)
 - At least once a month (but not every week)
 - Less than once a month
 - I don't contact them (go directly to Q3)
2. How do you contact your family/friends in your country? (Please select all that apply)
 - International phone call
 - Internet video call (Skype, Viber etc.,)
 - Email
 - Chat (facebook/yahoo messenger, kakaotalk, line etc.,)
 - Mail by post
 - Other _____
3. What information do you usually get using the Internet in South Korea? (From websites, online resources and SNS etc.) (Please, select all that apply)
 - News (world news, local news and news from your country)
 - Public services
 - Health services
 - Job opportunities
 - Housing opportunities
 - Entertainment (Concert, exhibition, festival and culture activities etc.)
 - Transportation
 - Legal/Laws
 - Other (Please define: _____)
4. What services do you usually get using the Internet in South Korea? (Please, select all that apply)
 - Online shopping
 - E-banking
 - Air ticket booking

- Online reservation (restaurant, cinema, public services etc.)
- E-Application (job, training, immigration etc.)
- Other (Please define: _____)
- I don't get any services using internet

5. How do you send money (remittances) back home? (Please, select all that apply)

- By bank
- Online money transfer (MoneyGram, Western Union etc.)
- By cargo company or individual
- Other
- I don't send money

6. Do you use following websites? (Select one answer for each item)

	I use this website when I need	I know this website but I don't use	I never heard about this website
Government websites			
http://english.seoul.go.kr (Seoul Metropolitan Government Website)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
http://global.seoul.go.kr (Seoul Global Center)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
http://www.visitseoul.net (The official travel guide to Korea)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
http://www.immigration.go.kr (Korea Immigration Service)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
http://www.hikorea.go.kr (e-Government for Foreigner)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
http://www.korea.net (Korean Culture and Information Service)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
..... (If any please add)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Government websites			
http://www.naver.com/ (Korean Portal website)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

http://www.korea4expats.com (Information on Korea, by expats)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
http://gmarket.co.kr/ (Korean online shopping website)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
http://interpark.com (online auction, tickets)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
..... (If any please add)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. How often do you use Social Networking websites such as Facebook, Twitter, or LinkedIn, etc.? (Please, select one)

- Every day or almost every day
- At least once a week (but not every day)
- At least once a month (but not every week)
- Less than once a month
- Never used it (go to Q9)

8. Please describe the people you interact with on social networking websites (Select one answer for each item)

	Most of them	Some of them	None of them
People in your country	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People in South Korea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People in other country	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Please indicate to what extent you agree or disagree with each statement about SOCIAL INTEGRATION:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I am well informed about different living aspects (laws, health services, education, housing opportunities, taxes, transportation etc.) in South Korea.	<input type="radio"/>				
2. Social Networking Sites (Facebook, Twitter or LinkedIn etc.) are	<input type="radio"/>				

important to be informed and connected.					
3. ICT (the Internet, mobile phone, SNS etc.) helps me to participate in social life in South Korea.	○	○	○	○	○
4. I actively take part (post your opinion, leave comment etc.) in online discussions, and forums.	○	○	○	○	○
5. It's easy and comfortable to obtain information from government and public administration websites in South Korea.	○	○	○	○	○

10. How do you usually look for a job or get information about a job? (including part-time jobs)

(Please, select all that apply)

- Newspaper, poster
- Company website
- Online advertisement
- Mobile application
- Through someone I know
- Directly go to the company
- Other _____

11. Please indicate to what extent you agree or disagree with each statement about ECONOMIC INTEGRATION:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Internet (websites, SNS, email, mobile application etc.) is the best tool for looking for a job.	○	○	○	○	○
2. Internet (websites, SNS, email, mobile application etc.) is the best tool for marketing myself in a job market. (Send a CV, job application etc.)	○	○	○	○	○

3. I have enough ICT skills for the job I'm doing/ I'm expecting to do.	<input type="radio"/>				
4. ICT enables new business and entrepreneurship models. (Websites, internet shops, online marketing etc.)	<input type="radio"/>				

12. How do you usually learn and practice Korean language? (Please, select all that apply)

- Language training center or individual teacher
- From Korean friends/colleagues
- Online courses (Please define: _____, _____)
- Websites (Please define: _____, _____)
- Mobile applications (Please define: _____, _____)
- Video lessons from YouTube
- By watching TV, drama and movies
- Other _____

13. Please indicate to what extent you agree or disagree with each statement about LINGUISTIC INTEGRATION:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. <u>I don't have</u> any language barrier (Korean) when I access information and services in South Korea.	<input type="radio"/>				
2. ICT (smartphone, computer, internet, online contents etc.) makes learning Korean easier.	<input type="radio"/>				
3. There are enough online resources (video lessons, online courses, websites etc.) to learn Korean for foreigners.	<input type="radio"/>				

4. In order to work/study/live comfortably Korean language knowledge is necessary.	<input type="radio"/>				
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14. Please indicate to what extent you agree or disagree with each statement about CULTURAL INTEGRATION:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I can get information about Korean culture using the Internet.	<input type="radio"/>				
2. ICT (smartphone, internet, software, Information Systems etc.) is one of the 'images' of South Korea.	<input type="radio"/>				
3. ICT (smartphone, internet, software, Information Systems etc.) helps to adapt in Korean culture easily.	<input type="radio"/>				
4. Korean society is ready to receive multiculturalism.	<input type="radio"/>				
5. I have an experience to be discriminated being foreigner in South Korea.	<input type="radio"/>				

15. Please indicate to what extent you agree or disagree with each statement about your migration to South Korea:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I'm satisfied to live, work and study in South Korea.	<input type="radio"/>				
2. I would advise to my family/friends to come to South Korea.	<input type="radio"/>				

3. I integrated into host society (South Korea) successfully.	<input type="radio"/>				
4. South Korea has a well-designed immigration policy.	<input type="radio"/>				

GENERAL INFORMATION

16. Gender: Female Male
17. Your age?
- 18 to 24 years
 - 25 to 34 years
 - 35 to 44 years
 - 45 to 54 years
 - 55 to 64 years
 - Age 65 or older
18. Your nationality? _____
19. What is your marital status?
- Single (never married)
 - Married
 - Widowed
 - Divorced
20. City of your current residence in South Korea? _____
21. How long have you been in South Korea?
- Less than a year
 - 1-2 years
 - 3-5 years
 - 5-10 years
 - More than 10 years
22. What is your visa type? _____
23. What is your religion?
- Prefer not to answer
 - No religion
 - Christian (all denominations)
 - Buddhist
 - Hindu
 - Jewish
 - Muslim
 - Sikh
 - Any other religion, please describe
24. What is your level of education (Please, select one):
- No formal education
 - High school education
 - Bachelor's degree
 - Master's degree
 - Doctoral degree

25. What is your current employment situation (Please, select one):
- Employee full-time work (Please define industry: _____)
 - Employee part-time work
 - Self-employed (own business)
 - Unemployed, looking for a job
 - Student (not in the labor force)
 - Student with part-time jobs
 - Housework
 - Other not in the labor force (retired, inactive, in compulsory military service, etc)
26. What is your Korean language level?
- I don't know any Korean
 - Beginner
 - Intermediate
 - High intermediate
 - Advanced
27. Please evaluate your basic ICT skills? (Using computer and basic software, download and upload file, using internet, email, smartphone, SNS, online services and find information using the Internet etc.)
- Very good
 - Good
 - Medium
 - Bad
 - Very bad
28. What was your reason for coming to Korea?
- To study
 - To work
 - To start business
 - To join my family
 - For political or humanitarian reasons
 - Other _____
29. Do you have any plan to extend your stay in Korea? (After your current visa is expired)
- Yes, I have plan to stay 1-2 years more
 - Yes, I have plan to stay 3-5 years more
 - I want to live in Korea as long as possible
 - I want Korean citizenship
 - No, I will go back immediately
 - I don't know

초 록

이민자 통합을 위한 ICT: 한국의 사례를 바탕으로

2013년도, 세계 속의 232백만 사람들이 그들의 출생과 다른 나라에 살고 있다. 이민은 사람들은 경제적, 사회적, 정치적 같은 다양한 이유로 이루어진다. 과거 편지나 우편 묶음이 고향까지 도착할 때의 시간이 수달이 걸렸던 시간에 비해, 현재는 ICT의 도움을 받을 수 있어 가족들과의 연락을 유지하는 것은 가격이 더 저렴해지고 편리해졌다. 이러한 이민과 ICT의 관계는 커뮤니케이션이란 큰 영향을 미치는 것에 반해, 연구의 진행이 더디게 이루어졌고, 현재까지 많은 관심을 갖는 분야가 아니다. 신 거주지에서의 거주민과 이민자들과의 통합을 기준으로 성공적인 이민을 판단할 수 있다.

본 연구는 더 나은 한국에서의 이민자 커뮤니티가 ICT를 이용하여 주체 사회에서 어떻게 그들의 통합을 이루는 것을 이해하고 어떠한 영향을 받는지 이해하는 것을 목적으로 두고 있다. 모델은 사회적, 경제적, 언어적 그리고 문화적 통합과 전체적인 이민에 대한 영향에 대한 ICT 이용을 바탕으로 제안되었다. 온라인 설문조사 플랫폼을 이용해 설문조사가 이루어졌고, 또한 요소 분석과 다중 회귀는 통계패키지를 이용해 연구 목적을 달성하고, 연구질문에 답을 하고 가설을 실험하기 위해 진행되었다. 이를 통해, 국내에 살고 있는 외국인들이 사회적, 문화적, 그리고 언어적 통합의 문맥에서 ICT를 이용하는 결과를 보였다. 또한, 통합에 관점에서의 ICT는 이민의 긍정적인 영향에도 기여한 결과를 보여주었다.

따라서, 정부는 이민자들과 국내인들과의 통합을 도모하기 위한 ICT 기반의 기회를 제공하는 인식을 제고해야 한다. 이는 다문화 사회가 올바르게 형성되기 위해서 반드시 필요하다. 본 연구는 ICT 바탕의 경험적 이론적 배경을 제공함으로써, 한국의 이민과 다문화 정책에 있어서 시야와 정책적 시사점을 기여하고 있다.

키워드: 이민, 이주; 통합관점의 ICT, 이주자들간의 연결; ICT와 이주의 연관성; 유대감 및 연결성; 온라인 설문조사;

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