The Digital Divide in South Korea:
Closing and Widening Divides in the 1990s

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Abstract. This article [1] examines the closing and widening of digital divides in South Korea during the 1990s. The results indicate that mental (among others motivational) and material access to new digital technologies has been growing substantially in this decade. This was promoted by persistent policies of the Korean government and business world. Opposed to that, insufficient digital skills and scanty usage opportunities remain among the Korean people. It is argued that they lead to new forms of digital divide. In particular, gaps in digital skills and usage appear centering around traditional demographic variables such as, age or occupational status.

Introduction

Despite the fact that information technologies such as the Internet have already has been identified as a "general-purpose technology" (Lipsey, Bekar & Carlaw, 1998), not all people have benefited from them. In other words, there has been a so-called "digital divide" generally defined as the inequality (or gap) in accessing and using new information equipment and services such as the computer and the Internet (Hacker & Van Dijk, 2000; NTIA, 1999).

Past research has focused on a few advanced and informatized societieies in North American and Europe (Hoffman, Novak, & Slosser, 2000; Jung, Qiu, & Kim, 2001; Van Dijk & Hacker, 2000). In spite of Asia's increasingly important role in the development of the information society (Kahen, 1995; Singhal & Rogers, 2000; Wang, 1994), there has been little empirical (or scientific) research in the field of the digital divide. This paper examines these issues. In particular, this paper identifies the digital divide in Korea that plays a more prominent role in the informatization in Asia (Ernst, 2000; Park, Barnett, & Kim, 2000; Park, Barnett, & Nam, 2001).

Digital divide theory

Although descriptions vary, it may be said that the term information society is appropriate to represent many current characteristics and changing trends of our age.

In the information society, the competitiveness of a nation is determined by its degree of informatization. [2] As a result, nation-states are making efforts to hasten the transition to information societies, allocating a large portion of national resources to this end. Among these, closing digital divides among people has been the main domain of the informatization program (NTIA, 1999).

Van Dijk and Hacker (2000) identify four political responses to the digital divide:

1. denial of the existence of a digital divide;
2. acceptance of some present divide(s), claiming that they will soon disappear;
3. emphasis of new inequalities of access to digital technologies which are supposed to grow and come on top of old inequalities of income, education, age, gender, ethnicity and geographical location;
4. differentiation: some divides are decreasing while others grow.

The nature of the responses also varies according to general perspectives on technology. On the one hand there are the technological optimists (Negroponte, 1995; Rheingold, 1993), who see great possibilities created by market forces and individual desires. In this context, they argue that many people will adopt the computer and the Internet in the near future for the following reasons. The first is educational or occupational. Since computer skills are a necessary job qualification and no one wants to be left behind being subject to the incessant pressures of employment, the number of people who purchase and use new technologies is growing rapidly. The second is entertainment. People are willing to use the Internet service to gratify their new needs, such as online chatting. Next, there is the economic reason. The Internet is a cost effective communication technology for individuals and organizations to exchange and distribute information. No matter how great the distance between any two nodes, it allows for communication at a low cost. Further, the decreasing price of computers and the Internet helps expand the online population of the general public. In addition, the mass media are spreading and intensifying the popular faith about computer technology by adopting technology-centered news frames (Park, 2001b). So, this first optimistic perspective emphasizes a high degree of technological determinism. On the other hand, optimistic (or utopian) visions of the digital divide have been accused by technological pessimists of veiling newly appearing inequalities and distorting the social discourse on the consequences of new information technologies (Bromley, 1997; Schiller, 1999).

Information technologies are developing rapidly and becoming more and more specialized. The primary element of newly invented technologies is interactivity (Rafali & Sudweeks, 1997; Rogers, 1995). Interactive technology requires the active involvement of the user so that people having insufficient skills are hardly motivated to possess and use them (Bandura, 1982, 1997; Eastin & LaRose, 2000). At issue is whether there exists a divide based upon a set of digital skills. Although price considered as antecedent condition that causes the digital divide is no longer a strong factor, it is unclear whether all kinds of digital divide will ultimately disappear.

Previous studies on information technologies have focused on their interface ([Barnes, 2000](#); [Sundar, 2000](#)), psychological access ([Eastin & LaRose, 2000](#)), cultural access ([Ito, Adler, Linde, Mynatt, & O'Day, 1999](#)), and a combination of education, motivation, and usage opportunities ([Van Dijk & Hacker, 2000](#)). They argue that the current digital divide is becoming a multifaceted phenomenon, compared to the divide caused by the lack of universal access to the required technologies such as the personal computer ([Alexander & Pal, 1988](#)). As a multifaceted phenomenon it is primary related to social issues that affect extended use of new technologies ([Kling, 1999](#); [MacKenzie & Wajcman, 1999](#)). Material (possession of hardware/software) access is resolved through the physical availability of suitable equipment, including computers of adequate speed and equipped with appropriate software for a given activity ([Kling, 1999](#)). Social access involves mental (or psychological) access defined by problems l ike computer anxienty and lack of motivation to use computers, skills access and usage access. These forms of social access are necessary for a successful realization of material access ([Bromley & Michael, 1998](#); [Murdock, Hartmann, & Gray, 1992](#)). Social access may stimulate or constrain the persistent use of new technology. For example, individual's awareness of, interest in, opportunity to, and technical skills to use information technologies all may impact the digital divide. In other words, social access is believed to be central in helping the public make the most of the benefits from technological (or material) access and ultimately lead to the closing of divides. Thus, those two elements, social and technological access, should be viewed as complements

In this context, Van Dijk argues, from a historic viewpoint, that access problems of information technology gradually shift from the lack of mental and material access to the lack of skills and usage access ([Van Dijk, 1999](#), [2000](#); [Van Dijk & Hacker, 2000](#)). This paper examines Van Dijk's contention in the South-Korean context. Simply stated, his digital divide theory says that the problems of the public's awareness of information technologies, and its motivation to use them, and the possession of personal computers and Internet connections are solved overtime. On the other hand, insufficient technical skill and scanty usage opportunity are unlikely to diminish. Rather, they are widening due to differential positions taken in society or general differences of age, gender, and occupation.

Closing and Widening Digital Divides in South Korea

Narrowing Mental and Material Access Divides

The South-Korean government has vigorously pursued a wide range of information programs with since the advent of the 1990s. In particularly, this government has started to focus its deep and ardent commitment to diffuse the 'mind' for

informatization throughout the nation. The establishment of the Information Culture Center (ICC) may be a good example. The Korean government built the ICC to promote the information society to the general public in 1988. The government's logic was simple: technological diffusion within a society can be achieved from by creating a culture favorable for fostering the development and the dissemination of information technologies, by raising public awareness of the increasing importance of information technologies in everyday life (Lerner, 1962; Rogers, 1976; Schramm, 1963). Next, there was a hardware-oriented approach. For instance, in the early 1990s, the Korean government launched a so-called 'universal information service' policy (Kim & Lee, 1991; Sung, 1994). Its policy target was to distribute free computer terminals among the public. It was influenced by the success of the French Minitel videotex (Kramer, 1993). The government believed that the realization of equal access to new technologies, the closing of inequality in possession and utilization, could be achieved through a 'one terminal per household' policy. When it comes to the diffusion of computers among ordinary people, policy makers also thought that the problem regarding the possession of hardware would be solved as the price goes went down (Rogers, Dutton, & Jun, 1987).
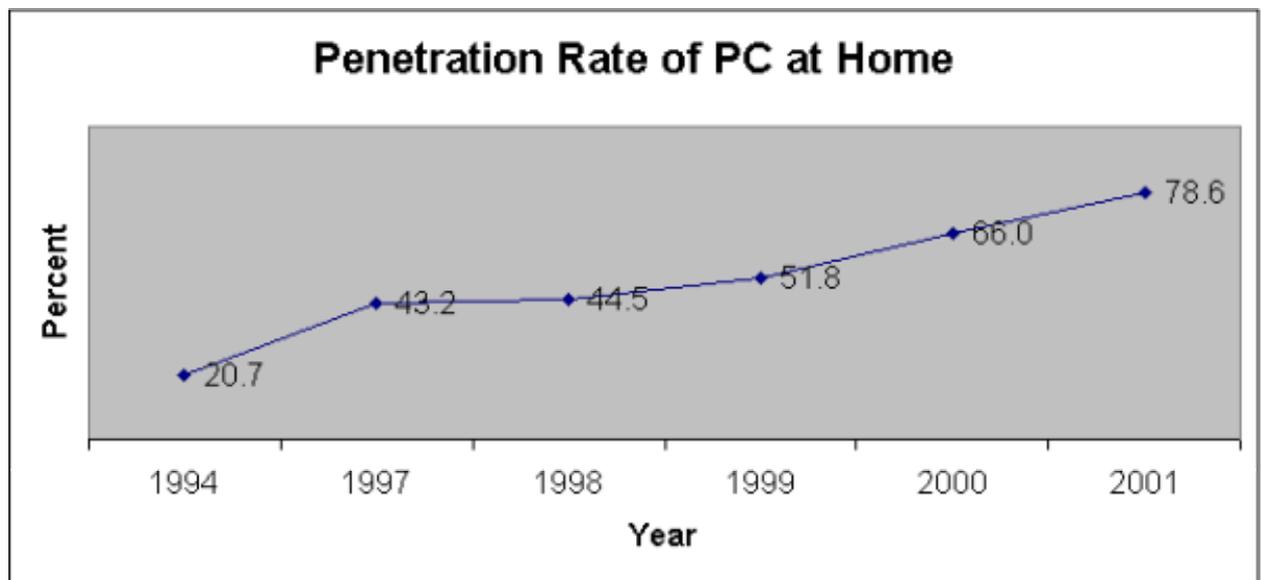
Arguably, thanks to the government's commitment to promote informatization, there was a surprising growth between the late 1980s and the mid 1990s. [3] In late 1980s, the general level of informatization was as follows (ICC, 1998): In 1988, only 35.0 percent of Southern-Korean people had heard of the term 'information society'. In 1990, the personal computer penetration rate in the home was 11.0 percent. Since that time the Korean people's awareness of the information society has been increasing very rapidly: 47.0 percent in 1990, 76.5 percent in 1992, 86.8 percent in 1994 (ICC, 1998). In 1997, the number of Southern-Korean people possessing a personal computer at home and using online communication services (including the Internet) was 43.2 percent and 21.4percent respectively (ICC, 1998a).

During the middle years of 1990s, the mass media also contributed to creating a symbolic environment favorable for the diffusion of the government's informatization policy (Park, 2000; Song, Rii, & Moon, 1997). Several major newspapers such as the *Cho-sun* daily and *Dong-a* daily conducted a public campaign with the goal of informatization. The Newspapers' campaigns shared a common characteristic in that they aimed at enhancing the informatization environment of schools, universities, companies, and museums that had previously lacked access to information systems such as an Internet homepage. In order to achieve this purpose, they undertook a multi-faceted endeavor including technical assistance. For example, the *Cho-sun* daily launched a group of volunteers called 'TechCorp' as the part of campaign activities. The primary purpose of TechCorp was to assist elementary schools lest they should be technologically outdated with the invention introduction of new information technologies. Park (2000) argues that on a broader level, the media campaign had been evaluated as successful in increasing the levels of ownership, usage and understanding of information technologies by creating a social environment favorable for the promotion of informatization.

Thanks to the public and private sector's commitment to diffuse new information technologies, the use of computer and the Internet among the Southern-Korean people has grown substantially. In the case of the personal computer, there were 15 million personal computers in 2000, up from 8.2 million in 1998 (NCA, 2001). According to the ICC (2001), about 4 out of 5 Korean households possess personal computer (see, Figure 1). The number of Koreans using the Internet has also increased rapidly: 0.14 million in 1995, 1.6 million in 1997, 10 million in 1999, 19.04 million in 2000, and 22.23 million in September 2001 (Korea Network Information Center). The ICC (2001) survey shows that 64.9 percent of Southern-Korean people used the Internetpercent in 2001 (see, Figure 2). South Korea ranks No. 1 in the Asia Pacific region in the penetration of broadband access for 2001. Ninty-five percent of home Internet users, or 15.8 million people, have high-speed connections such as cable modem or digital subscriber line (Korea Herald, 2001). According to Nielsen/NetRatings (2001), 23 Korean websites are included in the list of world's 100 biggest locally accessed web properties. Compared to other countries, the low prices to access the Internet may have contributed to the increase of Internet users (OECD, 2001).

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Figure 1. Penetration Rate of PCs at home in South Korea (1994-2001)

Penetration Rate of PC at Home

Percent / Year

20.7 (1994), 43.2 (1997), 44.5 (1998), 51.8 (1999), 66.0 (2000), 78.6 (2001)

* Source: ICC (2001)

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Figure 2. Percent of Internet Users in South Korea (1995-2001)

Percent of Internet Users
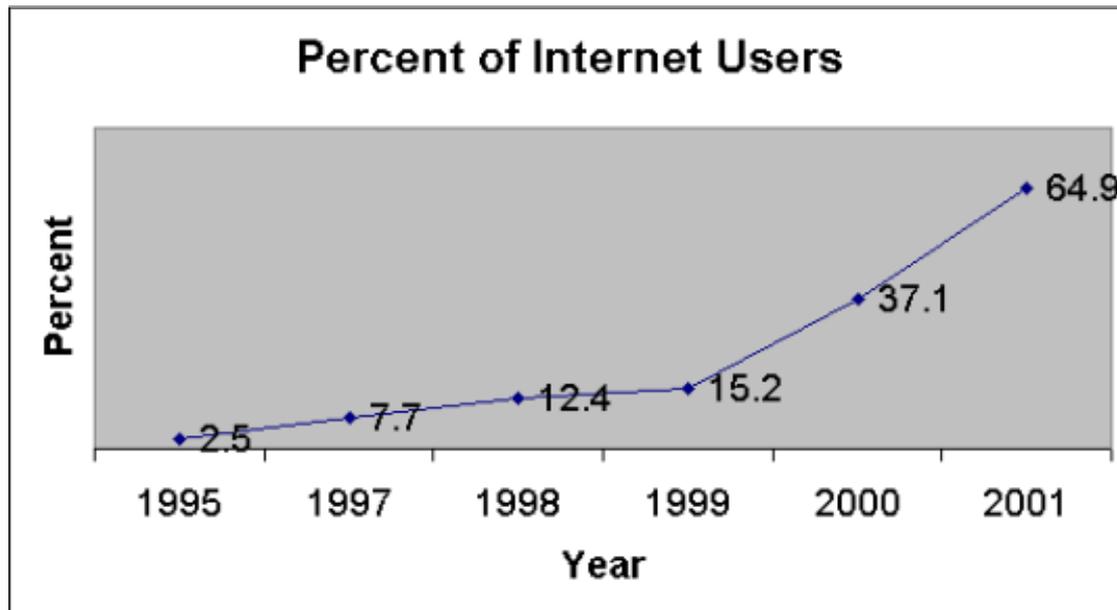
* Source: ICC (2001)

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 Newly growing Digital Divides in Digital Skills and Usage

Contrary to policy maker's expectations, the attainment of the ideal information
society in South Korea has not been automatically realized by the distribution of
technology alone. In 1997, the National Statistical Office started to include several
items measuring the Korean people's status of informatization in a census. According
to the census, 60.1 percent of the Southern-Korean people were unable to use a
personal computer (NSO, 1997). It is a surprising fact that more than half of the
general public is computer illiterate.

An examination of the 2000 data shows that the Korean people's poor computer
literacy has not improved (ICC, 2000). In the ICC's (2000) national survey of 3,000
respondents between April and May of 2000 they found that about 45.6 percent of the
Korean population have no or very few digital skills. [4] Table 1 shows that the divide
in digital skills occurs around traditional demographic categories such as gender, age,
education, and occupation. Fifty-one point eight percent of women, 72.9 percent of
50s, 59.7 percent of low middle education, and 52.2 percent of blue collar workers
have no skill or a low level of digital literacy. As Van Dijk (1999, 2000) argues, the
negative relationships between some categories such as women, the old, and low
educated people and digital skills may be caused by insufficient user-friendliness. For
instance, it is very difficult for the elderly to get the digital competence necessary for
operating a computer (Park, 2001a). When approaching age 50 (Braus, 1995), people
tend to experience severe physiological changes in vision ability, cognitive
functioning, hearing ability and motor skill. Regarding computer technology, for

example, slower motor movements can significantly reduce an older person's ability to type on the keyboard or control a finite mouse that requires fine hand movements.

Table 1. Distribution of Digital skills among Southern Koreans in 2000 (Percentages)

		No or very few	Reasonable	Good
All		45.6	41.0	13.4
Gender	Male	41.3	42.3	16.3
	Female	51.8	39.2	9.0
Age	13-19	47.5	41.3	11.2
	20-29	31.3	50.4	18.3
	30-39	51.4	34.6	14.0
	40-49	63.2	30.5	6.3
	50-59	72.9	27.1	0.0
	60-64	100.0	0.0	0.0
Occupation	Farmer/fisher	66.7	25.0	8.3
	Self employer	61.9	28.5	9.6
	Blue collar	52.2	37.4	10.3
	White collar	27.2	51.8	21.0
	Housewife	68.5	26.6	4.8
	Middle/high student	49.2	39.8	11.0
	College student	27.8	53.3	18.9
	Unemployed	39.4	48.5	12.1
Education	Low	93.3	6.7	0.0
	Low middle	59.7	33.2	7.1
	High middle	42.0	44.0	13.9
	High	28.1	50.0	21.9

- Source: ICC (2000). n = 1513
- Row Percent

Poor digital skills may lead to little use of the computer. A number of 30.5 percent of the non-computer users answered that they found it difficult to use. A large proportion of the total group of nonusers were women, elderly people, non-white collar workers and people with the low education and annual income. Among people not connected to the Internet this figure reaches 42.1 percent.

Table 2. Reasons for not using a computer in South Korea in 2000

Items	Percent
Do not know what for	7.6
Complex and hard to use it	30.5
Do not need to use it	26.8
Have no time	26.0

Because of cost 7.2
Do not want to learn how to use it 1.6
Do not have computer 0.3
Out of order </p

Source: http://www.cios.org/EJCPUBLIC/012/1/01213.html