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A Survey on the Digital Divide of Remote Rural Areas and the Policy of Digital Inclusion in Korea

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Abstract

The development of information technology has been expected to change the living style and upgrade the living environment. These expectations are somewhat realized, but there are certain groups that will be less benefitted by these upgrades compared to other groups. These phenomena are called digital divide, which is the latest issue around the world these days.

There are several factors that raise digital divide such as gender, education, job, age, income and region. In Korea, the most critical factor may be considered as region but so far this has only been assumed and there has been no empirical surveys about this. This study is proposed to survey the remote rural areas to find out the actual situations of digital divide compared to the urban areas in Korea. And the results will be used as a basic data to make strategies and policies in order to improve the rural living environments.

1. Introduction

Digital divide may be defined as the phenomena of unbalancing the ability of handling information which could be critical towards the social or economical activities by some factors. The ability of handling information includes the ability of accessing to the information, modifying the information, updating the information and creating the information whenever needed. Factors such as races, gender, education, job, age, income and regions are suspected to raise digital divide. In Korea, the most critical factor may be considered as 'region' but so far this has only been assumed and up to now there has been no empirical survey carried out to prove this.

This study is proposed to survey the remote rural areas in order to find out the actual situations of digital divide compared to that of the urban areas in Korea. And the results will be used as a basic data to make the strategies and policies in improving the rural living environments.

2: Preview on Digital Divide

2.1: Definition of Digital Divide

Currently, the world is moving towards an information society. According to a U.N. report published in June, 2000, the number of people using the internet was 276 million as of March, 2000 and this number increases by 150 thousand every day. Also several hundred million people connect to the internet daily, and there are also 1 billion and 5 hundred million internet sites around the world and around 2 million sites are being created each day. Meanwhile digital divide became a hot issue in the world. Digital divide may be defined as the phenomena of unbalancing the ability of handling information which could be critical for social or economical activities by some factors. The ability of handling information includes the ability of accessing information, modifying information, updating information and creating information whenever needed. To define and categorize problems concerning digital divide, not only should the abilities and living environments of individuals be considered but social and economical situation of the society as well.

2.2 Types of Digital Divide

Previous researchers found the factors that are suspected to raise digital divide and classified the factors as the following.

Digital Divide by country

Information infrastructure environments are different by countries and this causes the digital divide by countries.

 "The digital divide problem of the world is beyond the serious level. For examples, there are more internet sites in New York of U.S.A. than those in whole Africa continents, and the number of web sites in Finland is much larger than that in both South America and the Caribbean countries"

The above citation is a part of U.N. report about digital divide between the developed and the developing countries that was published June, 19th, 2000. This report also says that while the size of E-business market will increase to 700 billion dollars in 2004 from 45 billion dollars in 1998, only 5% of population in the world participate in E-business now, hence the internet is an obstacle to whom cannot use it.

Digital Divide by Income

Income is considered as one of the major factors that makes digital divide occur. "Jupiter Communication of America" forecasts that the internet population will increase to 20 million in 2005 from 15 million in 2000 in high income class that earns more than 75 thousand dollars a year, but internet population will increase only to 9 million in 2005 from 4 million in 2000 in the lower income class that earns less than 15 thousand dollars a year, even though population of lower income is much larger.

Digital Divide by education

Education has an influence on the ability of manipulating computer software, information access, information search, information updating, information modification and information creation. Therefore education can be a serious factor of digital divide. Actually, some researchers say that education is a more critical factor than income in Korea.

Digital Divide by Age

Age is also considered as one of the factors that raises digital divide. The report of the Department of Commerce published in 2000 says the ratio of people over 50 who use internet are less than people

younger than 50. But this report also continues to say that age is not so critical as other factors to cause digital divide. But the situation is different in Korea, where the internet manipulating ability of people over 40 is much less than that of younger people; hence age is considered as a critical factor.

Digital Divide by Gender

Statistics show that gender is also a cause of digital divide, So far it is not so serious as the other factors in many countries. But many researchers worry that it is possible for gender to cause severe digital divide. The reason is that most women have jobs that are less related to information and computer compared to those of men.

Digital Divide by Family Structure

According to the report of the Department of Commerce in U.S.A in 1999, children who come from divorced families are slower than those who come from a normal family in the ability of using the internet and searching for information. In Korea, research on this particular topic has not been performed yet, but many researchers are guessing this will become a critical factor soon.

Digital Divide by Region

Region is a little different from other factors. It is considered as a type of factor that is combined. A region of specific group of dwellers who are characterized on a certain level of education, age and specific jobs are considered as a factor. The harlem area can be an example. In Korea, digital divide between the rural area and the urban area is considered as a serious social problem.

3: Survey of Information Level in the Remote Rural Area
3.1. Information Retarded Area

In the previous section, factors that are suspected to cause digital divide are considered. In Korea, Rural areas are a typical information stunted region. The rural areas of Korea are characterized by old age, low income, less educated, and basically as a group of farmers. But in the previous research, rural areas were defined differently, therefore the degree of digital divide was different with each research. In our research. we surveyed the remote rural area that had less than 100 households and was much smaller than *eub* or *meon.*

3.2. Aspects of Survey

The following five aspects are surveyed in this research. "Information Culture Center of Korea" surveyed the following five aspects in August 2000 for the urban areas. Therefore, we follow the same direction of that research to compare the information level of the rural areas and the urban areas.
1. Aspects of information mind and information life
2. Aspects of the computer possession
3. Aspects of practical use in computer software
4. Aspects of internet and online system utilization
5. Aspects of the current issues and government policies

3.3. The Method of Survey

The survey was done for two weeks from Nov. 24th to Dec. 8th. Fourteen areas were chosen from the entire nation except the Jeju province. Three from the Kyunggi province, one from the Chungbuk province, one from the Kangwon province, two from the Chungnam province, two from the Chunbuk province, two from the Chunnam province, two from the Kyungbuk, and two from the Kyungnam province. Five villages were chosen from each area, therefore seventy villages were chosen in total. Five samples were surveyed for each village, therefore a total of 350 samples were surveyed. We found that the results of the digital divide was more severe than expected. The main reason was because the previous studies were surveyed in terms of *eub* and *meon* - Korean units used to measure areas smaller than cities - whileas this survey was done in areas smaller and more remote than *eub* and *meon.*

The samples consisted of 83.9% male, 17.1% female; 0.6% consisted of people in their teens, 5.5% in their twenties, 29.1% in their thirties, 41.8% in their forties and 23.3% consisted of people over fifty; 4.6% consisted of students (middle and high school: 2.0%; of university students 2.6%), 17.0% of elementary graduates, 24.8% of middle school graduates, 41.8% of high school graduates, 8.6% of university graduates. By income, 27.7% consisted of less than one thousand dollar per month, 51.3% between one thousand and two thousand dollar per month, 14.7% between two and three thousand dollar per month, 4.6% between three and four thousand dollar per month, 1.6% above five thousand dollar per month, and 0.6% replied with no answer. The results of this survey were compared to the results of the urban area survey that had been done by the Information Culture Center of Korea in the year 2000.

4: Analysis of Survey
4.1 Information Mind and Information Life

1. Information Mind
About 50% of the respondents answered that they understood what information society means and these results show that there is no difference between the urban areas and the rural areas in the acknowledgement of information mind. The types of the media that were used for gathering information were in the following order - the usage of broadcasting media such as the TV and radio took up 66.9% and the newspaper 16.7%. These were much higher a percentage compared to the internet (4.3%). However the results are similar to the urban area. We also asked about the influence of information to the following social situations: the economic development, the improvement of the life quality, the division by region, the division by income, the development of democracy, the division by education. Majority answered that information does have a positive influence on the economic development, the improvement of the life quality, and the removal of academic sectarianism, but they also thought information has no influence on removing the division caused by region or income.

They also answered that the problems of privacy, security, and pornography will increase and that this kind of situation will have a negative influence on the individual and social life. They said that they have a strong intention using home banking, home shopping and tele-medical treatments, while they have a weak intention on the tele-education, teleconference. But they opposed tele-greeting, tele-ceremony and tele-rite. These results are also similar to the urban area.

40.6% of the respondents answered that they were afraid by the changes occurring from the information society, but about 60% of them has not done anything in preparation of the information society. The major reason of not preparing for the information society is that they don't know how to do to it.

<table 1> shows that information mind of people in the remote areas were nearly the same to that of people in the urban areas. But when the detailed and specific questions were asked, they couldn't show concrete and clear opinions about the information mind and information society. It means they understood the concept superficially.

< Table 1 >   Comparison of recognition of information minds

items	rural area	urban area
information mind	100.4	100
information society	100.5	100

2. Information Life
Approximately 70% of the respondents answered that they use traditional tools such as the pen and paper and only 22.8% answered that they use computers when writing documents.   65.1% of the respondents answered that they use memos while only 8.9% answered that they use computers to store information. 70% of the respondents answered that use the telephone or fax machine while only 2.0% answered that they use the e-mail system when sending information to relatives and friends.

To remit money, 72.1% of the respondents actually go to the bank, while 2% use the internet and 0.9% use computer communications. Home banking is preferred in the rural areas than the urban areas. And the reason is supposed that the average distance to the bank is more far in the rural areas than the urban areas.

< Table 2 > Comparison of acceptance of information life

items	rural area	urban area
tele ceremony/ tele rite	62.0	100
home banking	103.0	100
home shopping	112.0	100

The survey results can be summarized as the following: The dwellers of the remote rural area, i.e farmers are considered to be ready to accept the information society as a social phenomena. Even though they thought they had an information mind, survey found it superficial. Therefore the more detailed and concrete education methods are needed for them to raise the information mind. Also most farmers have no strategy or plan ready in order to survive in the wave of the information society. The government should establish the concrete and long term planning for them.

4.2. Rate of Computer Possession

Approximately 56.1% of the farm household possess computers. Among them, 26.1% purchased computers in 1999 and 27% bought them in 2000. 10.8% had models older than the 486, while the rest (89 .2%) had model newer than the Pentium.

< Table 3 > comparison in computer possession

items	rural area	urban area
computer possession	78.0	100

The survey results can be summarized as following: because many farmer still can't afford to purchase computers, the government should set up a plan of supplying low priced computer to the rural areas. At least one common place per village to share the computer is needed and at least one high quality computer should be provided to a village. Government offices should be open for the villagers to use computers freely.

4.3. Practical Use in Computer Software

36.1% of the remote area dwellers - farmers - answered that they use the computer for several reasons. The reasons that they began to use a computer were firstly, in order to survive in an information society and secondly out of curiosity. The last reason was in order to advance in the information society. About 45.9% of the respondents answered that they used the computer 1-2 hours a day, 21.6% answered 2-3 hours a day. 13.5% answered that they use the computer more than 3 hours and 9.9% answered less than 1 hour a day.   The main reasons of using the computer were, in order, "to manage agricultural technology", "to manage home and household information", "to manage personal information", and "for fun".

The survey found that 67.2% use software related to O/A, and about 61.8% use software related to telecommunication. 98.5% answered they have an experience of purchasing the original software and this figure is very high compared to urban areas. We suppose the reason for this is that it is hard to get duplicated software in rural areas. They also answered that when they use computers, the time of them watching television decreased, but there was no change in the time of reading the newspaper, studying and sleeping compared with when they didn't use computers.

The survey found that 36.5% don't use computer because it is difficult to use, 17.6% said they don't need a computer, 16.2% said there is no time to learn, and 16.2% answered that the computer is too expensive. However 82.3% of the people who don't use the computer answered they have intentions to learn and plan on using the computer in the future.

< Table 4 > Comparison of Computer Skills

items	rural area	urban area
compuer usage	71.6	100
skill in wordprocessor	86.7	100
skill in spreadsheet/presentation	68.0	100
skill in utility and system management	71.3	100

items	rural area	urban area
actual computer skill	55.8	100

(actual computer skill: supply rate * skill rate(.78*.716))

The survey results can be summarized as the following: respondents think that there are not enough software fit to their situations for documentation, monetary management, message transfer, and etc. Most farmers think that the price of the software is too expensive. They also think that software that is more easy to use should be developed, especially, for older people.

4.4. Utilization of online service

(1) Computer communication
21.6% of the respondents answered that they use computer communications on a regular base. Among them, 6.0% started to use computers before 1995, 7.5% in 1996, 14.9% in 1997, 20.9% in 1998, 19.4% in 1999, and 31.3% in 2000. Meanwhile, when asked "how long do you use computer communications each day", 41% of the respondents answered that they use computer communications 1-2 hours a day, 26.2% use it 0.5 - 1 hour a day and about 4.9% used it for more than 3 hours.

40% answered that they use computer communications "to get agricultural information", 20% said "to get information for daily life and as a hobby", 15.7% said "to send messages". To the question of "what kind of computer communication service is mostly used", the answer was information service (74.6%), database (55.2%), E-mail (46.3%), and the bulletin board (41.8%) in order. The reason of not using computer communication was "do not know how to use it (39.8%)", "not helpful (17.5%)", and "too expensive (16.0%)" in order.

(2) Internet
25.9% of the respondents answered that they use the internet on a regular basis. And among them, 18.6% started to use it before 1998, 26.8% in 1999, and 40.2% in 2000. This statistics shows that the rural areas started 1-2 years later compared to the urban areas. And 89.3% are still using modems to connect the internet.   ADSL, ISDN, and cable modems are not so popular so far. Meanwhile, when asked "how long do you use the internet every day", 46.7% of the respondents answered that they use the internet 1-2 hours a day, and 33.42% answered that they use it less than 1 hour a day.

30.1% answered that they use the internet "to get agricultural information", 28.9% said "to get information for a daily life and a hobby", 18.1% said "to enjoy as a hobby" To the question of "what kind of internet service is mostly used", the answer was WWW (98%), E-mail (72.9%), games (27.9%) and chatting (15.6%) in the following order. The reasons for not using the internet were "don't know how to use (50.88%)", "too expensive (19.6%)", and "not helpful (16.0%)", in order.

< Table 6 > Comparison of Utilization of Online Service

Items	rural area	urban area
usage rate of computer communication	69.9	100
usage rate of internet	69.8	100

< Table 7 > Comparison of Weight of Using Online Service

Items	rural area	urban area
weight of usage on computer communication	83.7	100
weight of usage on internet	72.1	100

< Table 8 > Comparison of Actual Usage Rate of Online Service

Items	rural area	urban area
actual usage rate of computer communication	58.5	100
actual usage rate of internet	50.3	100

(actual usage rate of online service: usage rate * weight(.699*.837), (.698*.721))

The survey results can be summarized as the following: 74% of the respondents use the telephone modem to connect the internet and complained about the slow speed, therefore the supply of the more inexpensive and fast media such as ADSL is requisite. considering that the main reasons of not using computer communication is "not knowing how to use it", "too expensive", and "no need". At least one common place per village to connect with the internet is essential. Policy makers should make regulations and government offices should be open for the villagers to use computers freely.

4.5. Education
About 40% of the respondents answered that they have an experience of the computer education. 51.7% of the respondents who answered "yes" have received education from public education centers and schools.

The reasons of not receiving computer education were "no time (30.5%)" "no interest(26.8%)" and "don't know what should be learned (23.5%)" in order. However 83.8% of the uneducated people answered that they will learn how to use computer if there is a chance in the near future. <table 9> shows the chance of computer education throughout the rural areas is almost same compared to the urban areas.

< Table 9 > Comparison of Computer Education

Items	rural area	urban area
rate of computer education	100.5	100

The survey results can be summarized as following: The chance of education is almost the same level as that of the rural areas and the urban areas, therefore practical education that is related to the agricultural management is more important. To emphasize the quality of education, the activity of public education centers should be increased and the number of the education specialists should be also increased.

4.6. Opinion about Current Issues
Survey asks how much the farmers know about the policy of the "Kukmin PC" supply that is lead by the government. 46.5% answered that the price is still too expensive, and the capability of the computer is not so highly qualified. "Kukmin PC" is a specially designed cheap pc for lower income users.

At the question "to build an information society, what is the first thing that should be done", 34.4% said "building an information high way", 32.1% said "raising an information mind", and 24.1% said "education systems in order to use the computer skillfully".
< table 10 > shows farmers don't fully understand the government policy .

< Table 10 >   Rate of Answer "don't know" about Government Information Policy

items	rural area	urban area
price of kukmin PC	814.7	100
capability of kukmin PC	635.7	100

671

The survey results can be summarized as following: we can not survey "PC bangs" (a kind of commercial private pc room) because there are no "PC bangs" at all in the rural areas, even though they are popular in the urban areas. The policies that spread "PC bangs" and make "PC bangs" as the places of information sharing in the rural area are requisite. Government offices such as post offices, fire stations, and police stations should be used as a kind of "PC bang".

5: Survey of information level by variables
In this section we surveyed the relationships between the information level and factors that were suspected to cause digital divide in the rural areas. Information level includes five aspects: the recognition of information mind, the understanding about information society, the possession of computer, the skill in use of softwares, the use of internet, the computer education and the preparation for the information society. Variables, gender, education level, income level, age, region, distance to the nearest city and the crops that are cultivated are considered.

In order to interpretate the table, "the recognition of information mind" category is measured between the number 0 and 6. 0 means "do not have information mind", and 6 means "have information mind perfectly". "the understanding about information society" category is also measured between the number 0 and 6. 0 means "do not know about information society" and 6 means "understand information society well". In "the possession of computer", the number means the number of the computers that they have. For the categories. "the skill in use of softwares", "the use of internet", "the computer education" and "the preparation for the information society" the number 1 means "yes" and number 2 means "no".

5.1. Division by Gender
We tested the following hypothesis, and <table 11> is the result of the tests.
Hypothesis: there is a division of information level by gender

< Table 11 > Results of Information Level by Gender

items	average		F value	confidence level
	male	female		
information mind	4.3322	4.1481	.275	.323
information society	4.3011	4.1667	.388	.463
possession of computer	.7113	.7636	.284	.600
use of software	1.6220	1.5741	.725	.513
computer communication	1.771	1.8364	5.311	.252
use of internet	1.7363	1.7636	.773	.672
computer education	1.6411	1.4364	2.883	.004
fear about information society	1.5786	1.5818	.008	.965
preparation of information society	1.5801	1.6038	.489	.749

The value of the F tests say that only computer education is divided by gender. Here, number 1 means "educated" and number 2 means "not educated", and the results say that women had more opportunity to learn computers than men.

5.2. Division by Income
We tested the following hypothesis, and <table 12> is the result of the tests.
Hypothesis: there is a division of information level by income

items	income					F value	confidence level
	less than $1000 per month	$1000- $2000 per month	$2000- $3000per month	$3000-$4000 per month	more than $4000 per month		
information mind	4.0319	4.2832	4.6327	4.7500	5.2500	3.125	.015
information society	4.0957	4.2471	4.5714	4.6000	4.7500	1.659	.159
possession of computer	.6354	.6497	.9804	1.0625	1.0000	4.061	.003
use of software	1.6915	1.6404	1.5098	1.3750	1.2500	2.822	.025
computer communication	1.8316	1.8068	1.6863	1.6875	1.2500	3.140	.015
use of internet	1.8021	1.7584	1.6667	1.5625	1.2500	2.885	.023
computer education	1.6842	1.6307	1.4400	1.4375	1.6667	2.700	.031
fear about information society	1.6522	1.5172	1.7292	1.4667	1.2500	2.997	.019
preparation of information society	1.7391	1.5673	1.4200	1.3750	1.7500	4.739	.001

The value of the F tests say that "the possession of computer" and "the preparation of information" is divided by income. In the possession of a computer, the number means "the number of computers that the respondents possess". Therefore the class "$3000-$4000 per month" has 1.06 computers per household. In "the preparation of information society" the number 1 means "prepared perfectly", number 2 means "not prepared at all". Therefore the preparation of the class "$3000-$4000 per month" was better than the other classes.

5.3. Division by Age
We tested the following hypothesis, and <table 13> is the result of the tests.
Hypothesis: there is a division of information level by age

items	Age					F value	confidence level
	20s	30s	40s	50s	over 60s		
information mind	4.842	4.448	4.418	3.813	3.533	5.670	.000
information society	4.737	4.400	4.435	3.781	3.467	6.039	.000
possession of computer	.895	.693	.867	.523	.125	6.940	.000
usage of software	1.421	1.485	1.608	1.813	2.000	8.138	.000
computer communication	1.526	1.748	1.748	1.923	2.000	5.481	.000
use of internet	1.37	1.663	1.750	1.892	2.000	8.213	.000
computer education	1.316	1.525	1.599	1.766	2.000	7.156	.000
fear about information society	1.684	1.566	1.547	1.613	1.688	.635	.638
preparation of information society	1.316	1.552	1.550	1.721	1.938	5.154	.000

Every item except "fear about information society" shows the division. The results show that the younger are more information oriented.

5.4. Division by Education
We tested the following hypothesis, and <table 14> is the result of the tests.
Hypothesis: there is a division of information level by education

< Table 14> Results of Information Level by Education

items	education				F value	confidence level
	graduate elementary school	graduate middle school	graduate high school	higher than graduate university		
information mind	3.5593	3.9877	4.4965	5.4333	21.216	.000
information society	3.4746	4.1250	4.4014	5.3333	19.318	.000
possession of computer	.4000	.6471	.7671	1.1667	9.815	.000
use of software	1.8833	1.8072	1.5442	1.1333	25.755	.000
computer communication	1.9500	1.8941	1.7671	1.3103	22.443	.000
use of internet	1.9500	1.8588	1.7007	1.3333	18.762	.000
computer education	1.9153	1.6905	1.5578	1.2414	16.797	.000
fear about information society	1.6949	1.6000	1.5417	1.6000	1.375	.250
preparation of information society	1.8966	1.6951	1.5000	1.1724	20.594	.000

Every item except "fear about information society" shows the difference.   The results show that the more educated, the more information oriented.

5.5. Division by the Distance to the Nearest City
We tested the following hypothesis, and <table 15> is the result of the tests.
Hypothesis: there is a division of information level by the distance to the nearest city.

< Table 15 > Results of Information Level by the Distance to the Nearest City

items	distance		F value	confidence level
	near	far		
information mind	4.3707	4.1238	.724	.099
information society	4.3448	4.1538	.493	.202
possession of computer	.7381	.7000	.021	.637
use of software	1.6364	1.5963	.881	.492
computer communication	1.7799	1.8056	1.152	.597
use of internet	1.7667	1.7182	3.400	.343
computer education	1.6202	1.5872	1.164	.568
fear about information society	1.5644	1.6132	3.032	.411
preparation of information society	1.5980	1.5660	1.005	.591

Distance is classified "near" if the distance to the nearest city is less than 15Km and "far" if the distance is more than 15Km. The results shows that there is no division by distance.

5.6. Division by Region
We tested the following hypothesis, and <Table 16> is the result of the tests.
Hypothesis: there is a difference of information level by region

<Table 16> Results of Information level by Region

	province		items								
			information mind	information society	possession of computer	use of software	computer communication	use of internet	computer education	fear about information society	prepation of information society
R e g i O n	Kyungki	region 1	4.80	4.80	.88	1.52	1.72	1.72	1.60	1.58	1.57
		region 2	4.16	4.25	.96	1.64	1.72	1.72	1.63	1.56	1.52
	kwangwon	region 1	3.96	4.09	.92	1.60	1.76	1.76	1.52	1.72	1.36
	chungnam	region 1	4.25	4.57	.96	1.48	1.68	1.56	1.56	1.46	1.50
		region 2	4.00	3.80	.68	1.75	1.80	1.84	1.84	1.56	1.69
	chungbuk	region 1	3.96	4.41	.76	1.68	1.96	1.96	1.60	1.46	1.64
	chunbuk	region 1	4.41	4.23	.68	1.64	1.75	1.73	1.57	1.82	1.73
	chunnam	region 1	4.36	4.08	.60	1.64	1.80	1.72	1.72	1.69	1.91
		region 2	4.67	4.65	.48	1.68	1.88	1.88	1.64	1.52	1.56
	Kyngbuk	region 1	4.20	4.24	.68	1.56	1.68	1.56	1.71	1.46	1.64
		region 2	5.44	5.20	.84	1.48	1.68	1.56	1.32	1.60	1.46
	Kyungnam	region 1	4.33	4.21	.52	1.50	1.88	1.72	1.54	1.56	1.46
		region 2	4.76	4.52	.60	1.60	1.72	1.72	1.38	1.43	1.71
	Inchun	region 1	2.88	2.88	.52	1.84	1.92	1.92	1.88	1.68	1.52
		F value	6.21	5.34	1.6	1.1	1.28	2.19	2.58	1.26	2.08
		confidence level	.00	.00	.093	.349	.222	.010	.002	.240	.019

By region, there is a division in "information mind". "information society", "the use of internet", "the computer education" and "the preparation of information society".

5.7. Division by the species of Crops Cultivated
We tested the following hypothesis, and <Table 17> is the result of the tests.
Hypothesis: there is a difference of information level by species

<p style="text-align:center">< Table 17> Results of Information Level by Species</p>

items	Species					F value	confidence level
	Rice	others	Vegetables	fruits	live stock		
information mind	4.3564	4.4286	4.1067	4.539	4.4651	4.821	.001
information society	4.3077	4.5000	4.0759	4.542	4.3256	5.282	.000
possession of computer	.7077	.8000	.7031	.7393	.7667	.384	.820
use of software	1.5986	1.5778	1.6693	1.574	1.5843	1.744	.138
computer communication	1.7722	1.7333	1.7921	1.813	1.7667	.567	.686
use of internet	1.7289	1.7111	1.7708	1.735	1.7111	.662	.619
computer education	1.6093	1.5455	1.6474	1.601	1.5568	1.011	.401
fear about information society	1.5941	1.6136	1.5591	1.559	1.5833	.316	.867
preparation of information society	1.6015	1.6429	1.6119	1.522	1.6118	1.332	.256

By the crops that are cultivated, "information mind" and "information society" shows division. Farmers who cultivate fruits are most sensitive to information, and farmers who cultivate vegetables are least sensitive to information. The supposed reason for this because the price of fruits are sensitive to the income and tend to fluctuate depending on economical situations while the price of vegetables are fairly stable.

6: Strategy
The results of this survey will be used for future strategies and policies to remove digital divide in the rural areas. In short term, these policies will help in improving the information environments of the rural areas and satisfying the basic requisite knowledge rights. In the middle term, it will help to increase the productivity and transportation efficiency and in the long run these policies will help lead Korea to become an advanced information society in the world. Strategy is summarized by term.

6.1. Short term strategy
1. Building the infrastructure of the internet
2. Specific education program for remote rural education
3. Monetary support for providing computers
4. Establishing a evolution plan

6.2 Middle term Strategy
1. Develop software contents that are related to rural life
2. Building step by step education plans
3. Building information communities
4. Monetary support such as tax reduction

6.3 Long term Strategy
1. Connection information technology and species
2. Educate and increase information creation ability
3. Build rural area Intranet
4. Derive private investment to rural areas
5. Build an evaluation system

7: conclusion

In this paper, we surveyed the information situation of the rural areas and compared that to the situation of the urban areas that were surveyed about five month earlier. We found that digital divide is more severe than we considered. We also hope this research provides the basic data that is needed for building the strategies of digital divide in Korea.

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