

Internet Option in the 2010 Census in Korea

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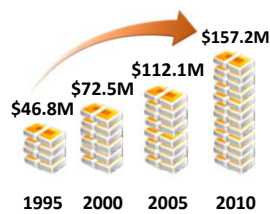
 **04 Internet Option in 2015**

01 Motivators

threats

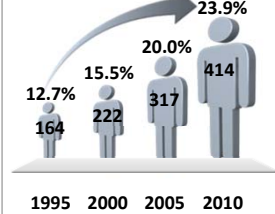
Census Cost

Unit: Million Us Dollar



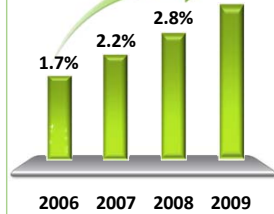
1 person Household

Unit: Thousand People



Non-response rate

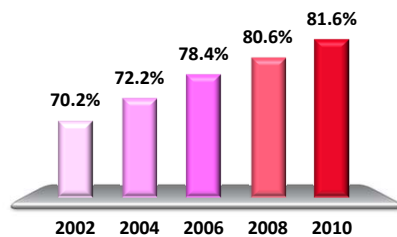
Economically Active Population



01 Motivators

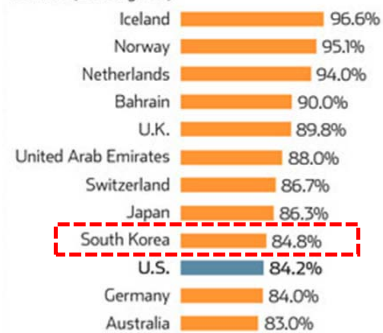
opportunities

✓ Internet Penetration rate in Korea



Source : Korea Internet Security Agency (2010)

highest in percentage of individuals using the Internet (2013 figures)



Source : Wall Street Journal (2013)

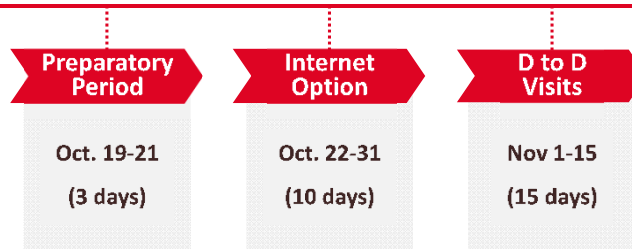
02 Internet Option in the 2010 Census

outline

- History**
 - conducted every 5 yr since 1925
 - 2010 Population Census (18th)
- Census Day**
 - As of 0:00, November 1, 2010
- Period**
 - November 1 -15 (15 days)
 - (Internet Option Available : Oct. 22-31, 10 days)
- Questions**
 - 50 items (short form: 19 , long form : 31)

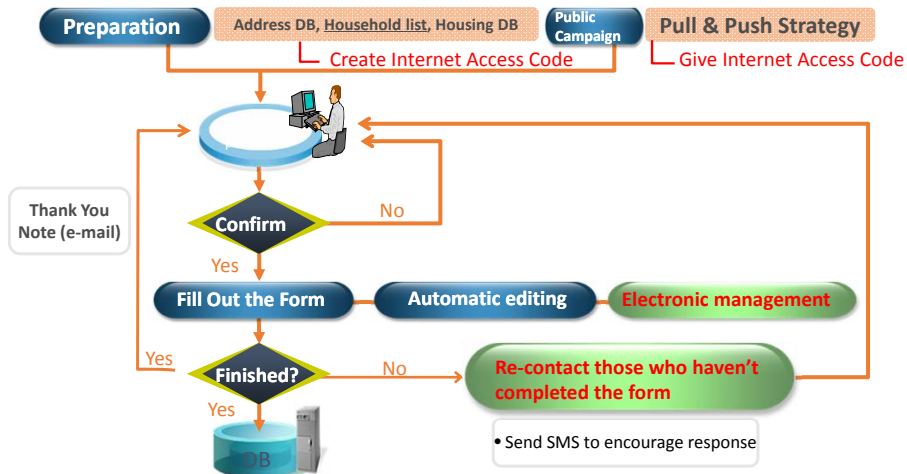
02 Internet Option in the 2010 Census

timeline



02 Internet Option in the 2010 Census

Work flow

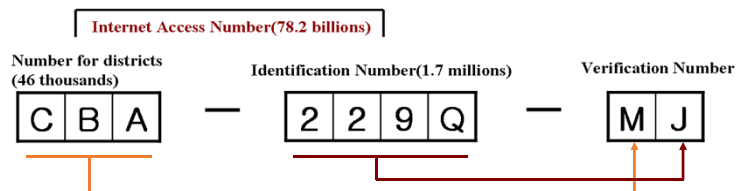


02 Internet Option in the 2010 Census

access code

✓ Creating Internet access code by using 32 alphanumeric combinations

- Excluding 1, l, 0 and O for potential confusions due to similarities
- Administrative districts(3 digits)-Identification number(4 digits)-Verification number (2 digits)




02 Internet Option in the 2010 Census

access code

참여번호 TKJ - 9 6 7 5 - QC



다른 가구의 참여번호를 이용하여 인터넷조사에 참여하시면 과태료를 부과 받을 수 있습니다.

■ 인터넷조사 참여방법



1 인터넷조사 바로가기 클릭
2 참여번호 입력
3 응답자란 알 수 있는 비밀번호를
완전히 입력하고 비밀번호는
응답내용의 비밀보호, 응답내용
수정 시 필요합니다.
4 이름 및 연락처 입력

인구주택총조사 홈페이지(www.census.go.kr)를 접속하시거나
포털사이트 검색창에 **인구주택총조사** 검색 결과를 검색하세요

02 Internet Option in the 2010 Census

Webpage



02 Internet Option in the 2010 Census

Visit the webpage for Internet option

2010 인구주택총조사 홈페이지

바른가기 ▶

인구주택총조사 홈페이지에서 조사에 대한 다양한 정보를 얻으실 수 있습니다.

Response through Internet Option

인터넷 조사 연장 ~11월7일까지

참여하기 ▶

외국인 전용 인터넷조사 바로가기

Select a Language [] go

how to access

Enter Internet Access Code

For Foreigners

02 Internet Option in the 2010 Census

questionnaire Cover

2010 Census POPULATION AND HOUSING CENSUS

Cover Members of Household Household Housing

Feel Comfortable taking part in this census! Your personal data will be strictly protected. Please perform an important duty and take part in the Population and Housing Census 2010.

▶ The 2010 Population and Housing Census is carried out in the Republic of Korea as of November 1, 2010 pursuant to the Statistics Act.

▶ The Population and Housing Census is the most basic statistical survey conducted to demographically study the population and households and to ascertain the housing situation in Korea.

▶ We ask for your full cooperation for completion of the census.

Census targets and instruction for filling

- This census targets all foreign residents (excluding those with Korean nationality) living in this residence, irrespective of their period of sojourn or whether they are sojourning in Korea legally or illegally.
- Foreign diplomats, foreign military service personnel stationed in Korea, and their families are not targets of the census.

Members of Household How many people are in this household? persons

Name	Relationship with householder
Tom	Householder
Jame	Spouse
Tom.J	Son or daughter
Jane.J	Son or daughter

SAVE

02 Internet Option in the 2010 Census

questionnaire household members

2010 Census POPULATION AND HOUSING CENSUS

Cover Members of Household Household Housing

1. Name	Tom	Jane	Jerry	Petty
2. Sex	<input type="radio"/> Male <input type="radio"/> Female	<input type="radio"/> Male <input type="radio"/> Female	<input type="radio"/> Male <input type="radio"/> Female	<input type="radio"/> Male <input type="radio"/> Female
3. Date of birth	Month Day Year of birth [] [] []	Month Day Year of birth [] [] []	Month Day Year of birth [] [] []	Month Day Year of birth [] [] []
4. Relationship with household	<input checked="" type="radio"/> Householder <input type="radio"/> Spouse <input type="radio"/> Son or daughter <input type="radio"/> Son/daughter in law <input type="radio"/> Father/mother <input type="radio"/> Father/mother in law <input type="radio"/> Grandchild/grandchild in law <input type="radio"/> Great Grandchild/great grandchild in law <input type="radio"/> Grandparents <input type="radio"/> Brother/sister or brother/sister in law <input type="radio"/> Nephew/niece or his/her spouse <input type="radio"/> Aunt/uncle or his/her spouse <input type="radio"/> Other relative <input type="radio"/> Other non-relative(Employee, boarder, etc.)	<input type="radio"/> Householder <input checked="" type="radio"/> Spouse <input type="radio"/> Son or daughter <input type="radio"/> Son/daughter in law <input type="radio"/> Father/mother <input type="radio"/> Father/mother in law <input type="radio"/> Grandchild/grandchild in law <input type="radio"/> Great Grandchild/great grandchild in law <input type="radio"/> Grandparents <input type="radio"/> Brother/sister or brother/sister in law <input type="radio"/> Nephew/niece or his/her spouse <input type="radio"/> Aunt/uncle or his/her spouse <input type="radio"/> Other relative <input type="radio"/> Other non-relative(Employee, boarder, etc.)	<input type="radio"/> Householder <input type="radio"/> Spouse <input checked="" type="radio"/> Son or daughter <input type="radio"/> Son/daughter in law <input type="radio"/> Father/mother <input type="radio"/> Father/mother in law <input type="radio"/> Grandchild/grandchild in law <input type="radio"/> Great Grandchild/great grandchild in law <input type="radio"/> Grandparents <input type="radio"/> Brother/sister or brother/sister in law <input type="radio"/> Nephew/niece or his/her spouse <input type="radio"/> Aunt/uncle or his/her spouse <input type="radio"/> Other relative <input type="radio"/> Other non-relative(Employee, boarder, etc.)	<input type="radio"/> Householder <input type="radio"/> Spouse <input checked="" type="radio"/> Son or daughter <input type="radio"/> Son/daughter in law <input type="radio"/> Father/mother <input type="radio"/> Father/mother in law <input type="radio"/> Grandchild/grandchild in law <input type="radio"/> Great Grandchild/great grandchild in law <input type="radio"/> Grandparents <input type="radio"/> Brother/sister or brother/sister in law <input type="radio"/> Nephew/niece or his/her spouse <input type="radio"/> Aunt/uncle or his/her spouse <input type="radio"/> Other relative <input type="radio"/> Other non-relative(Employee, boarder, etc.)

What is the relationship with the head of the family?
Householder is the person who actually represents the household.

02 Internet Option in the 2010 Census

questionnaire household

2010 Census POPULATION AND HOUSING CENSUS

Cover Members of Household Household Housing

10. No. of rooms used

How many rooms, living rooms, and rooms for meals are used by the household?

* A room is a space with walls or doors on all four sides and whose height is at least 2m and area is at least 4m². A space that is used both as a living room and a room for meals is categorized as a living room.

Room used to sleep (Bedroom) []

Room used for other purposes (dressing room, study, etc.) []

Living room (Main floored room) []

Room for meals (Dining room with kitchen included) []

11. Building and floor of the household

How many floors does the household's building have, and on what floor does the household live?

[] floors

☐ Below ground level (semi-basement)

☐ Above ground level Floor [] floors

☐ Rooftop

12. Types of residential facilities

In what form are the household's residential facilities, and how are they used?

Kitchen ☐ Modern ☐ Conventional ☐ None ☐ Not shared with other households ☐ Shared with other households

Water supply ☐ Waterworks ☐ Village waterworks ☐ Private-use waterworks ☐ None

02 Internet Option in the 2010 Census

questionnaire housing

2010 Census POPULATION AND HOUSING CENSUS

Cover Members of Household Household **Housing**

15. Type of residence

What type of residence is it?

In the case of a building that has both residential space and business space, if the total residential space is the same or greater than the business space, then choose "Detached house used for both residence and business." from among the choices under Detached house. If the business space is greater than the residential space, choose "Housing in a non-residential building."

☐ Detached house

- ☐ General detached house
- ☐ Multi-family house
- ☐ Detached house used for both residence and business

☒ Apartment

- ☐ Row house
- ☐ Apartment unit in a private house
- ☐ Housing in a non-residential building (shopping arcade, factory, inn, etc.)
- ☐ Officetel (office with a bedroom)
- ☐ Room of a lodging facility, including a hotel or inn
- ☐ Dormitory and special welfare institution
- ☐ Shack, vinyl greenhouse
- ☐ Other

16. Gross residential floor area

What is the housing unit's gross residential floor area (building area) in m²?

Please indicate the area that is used for residential purposes and round to the nearest whole number.

m².

02 Internet Option in the 2010 Census

Input & automatic editing

✓ For checking logic, edit specifications(88 for short form, 227 for long form) were used.

2010 Census POPULATION AND HOUSING CENSUS

Cover **Members of Household** Household Housing

	Tom	Jane	Jerry
1. Name	Tom	Jane	Jerry
2. Sex	<input type="radio"/> Male <input type="radio"/> Female	<input type="radio"/> Male <input type="radio"/> Female	<input type="radio"/> Male <input type="radio"/> Female
3. Date of birth	Month: <input type="text"/> Day: <input type="text"/> Year of birth: <input type="text"/>	Month: <input type="text"/> Day: <input type="text"/> Year of birth: <input type="text"/>	Month: <input type="text"/> Day: <input type="text"/> Year of birth: <input type="text"/>
4. Relationship with household	<input checked="" type="radio"/> Householder <input type="radio"/> Spouse <input type="radio"/> Son or daughter <input type="radio"/> Son/daughter in law <input type="radio"/> Father/mother	<input type="radio"/> Householder <input checked="" type="radio"/> Spouse <input type="radio"/> Son or daughter <input type="radio"/> Son/daughter in law <input type="radio"/> Father/mother	<input type="radio"/> Householder <input type="radio"/> Spouse <input checked="" type="radio"/> Son or daughter <input type="radio"/> Son/daughter in law <input type="radio"/> Father/mother

What is the relationship with the head of the family?
Householder is the person who actually represents the household.

Warning

An error in the relationship between the head of household and his spouse

Confirm

02 Internet Option in the 2010 Census

e-census management system

- ✓ The management system automatically manage the input process and report the status.

신설 및 입력가구 관리

홈 > 인터넷 조사 > 인터넷 조사관리 > 신설 및 입력가구 관리

시도: 광주광역시 | 시군구: 북구 | 읍면동: 문봉1동 | 조사구번호: 053 | 견수: 견수 053 | 001 | 2008-10-28 21:41 | 입력완료

조사구번호: 견수 | 조사표입력: 견수 | 거처/가구번호: 견수 | 성명:

■ 검색 결과.

선택	NO	신설번호	시도	시군구	읍면동	조사구번호	견수	견수	거처번호	가구번호	조사완료일시	조사표입력여부	입력조사표
<input type="checkbox"/>	1	208171	광주광역시	북구	문봉1동	053	견수	053	001	001	2008-10-28 21:41	입력완료	입력완료
<input type="checkbox"/>	2	208164	광주광역시	북구	문봉1동	002	견수	005	002	002	2008-10-28 00:40	입력완료	입력완료
<input type="checkbox"/>	3	208154	광주광역시	북구	문봉1동	002	견수	013	001	001	2008-10-27 12:05	입력완료	입력완료
<input type="checkbox"/>	4	208153	광주광역시	북구	문봉1동	002	견수	057	001	001	2008-10-25 17:31	입력완료	입력완료
<input type="checkbox"/>	5	208137	광주광역시	북구	문봉1동	067	견수	019	001	001	2008-10-25 16:45	입력완료	입력완료
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<input type="checkbox"/>	7	208133	광주광역시	북구	문봉1동	031	견수	053	001	001	2008-10-24 22:23	입력완료	입력완료
<input type="checkbox"/>	8	208130	광주광역시	북구	문봉1동	055	견수	009	001	001	2008-10-24 22:14	입력완료	입력완료
<input type="checkbox"/>	9	208128	광주광역시	북구	문봉1동	049	견수	054	001	001	2008-10-24 08:11	입력완료	입력완료
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<input type="checkbox"/>	13	208095	광주광역시	북구	문봉1동	004	견수	019	표본	001	2008-10-21 18:23	입력완료	견수
<input type="checkbox"/>	14	208093	광주광역시	북구	문봉1동	079	견수	005	001	001	2008-10-21 13:52	입력완료	견수
<input type="checkbox"/>	15	208087	광주광역시	북구	문봉1동	037	견수	013	001	001	2008-10-21 13:44	입력완료	견수
<input type="checkbox"/>	16	208084	광주광역시	북구	문봉1동	038	견수	014	001	001	2008-10-21 07:22	입력완료	견수
<input type="checkbox"/>	17	208083	광주광역시	북구	문봉1동	015	견수	005	004	004	2008-10-20 22:40	입력완료	견수
<input type="checkbox"/>	18	208078	광주광역시	북구	문봉1동	106	견수	042	001	001	2008-10-20 18:59	입력완료	견수
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<input type="checkbox"/>	20	208067	광주광역시	북구	문봉1동	087	견수	033	001	001	2008-10-20 18:59	입력완료	견수

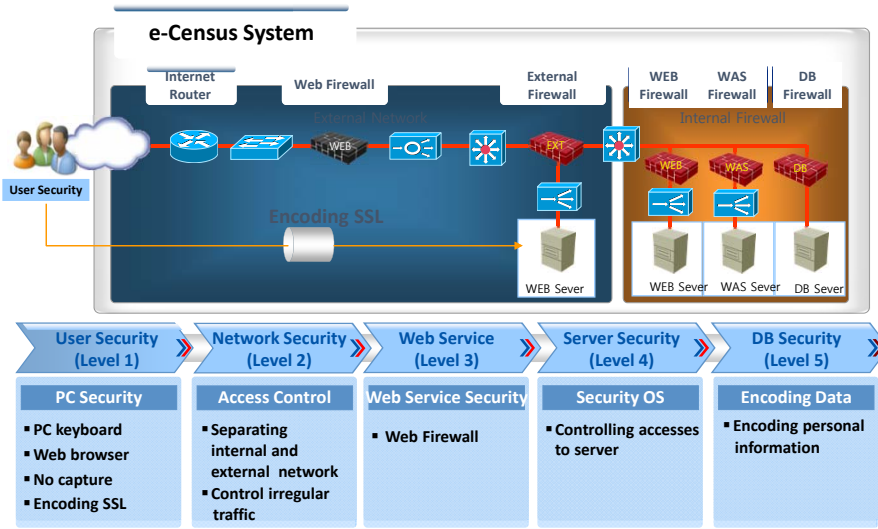
인터넷조사 취소 | 저장

This household has completed the form

This household has not completed the form

02 Internet Option in the 2010 Census

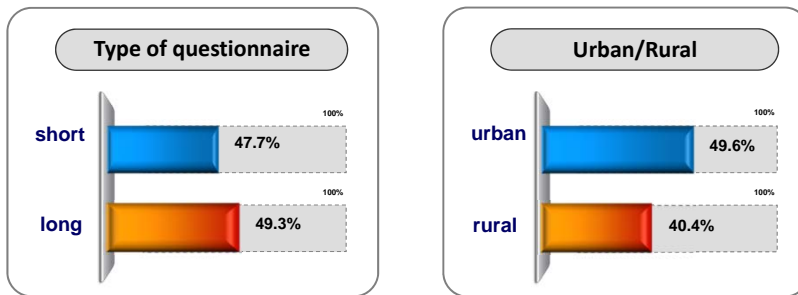
ensure security



03 Results in the 2010 Census

Internet uptake rate

✓ Overall Internet uptake rate : **47.9%**

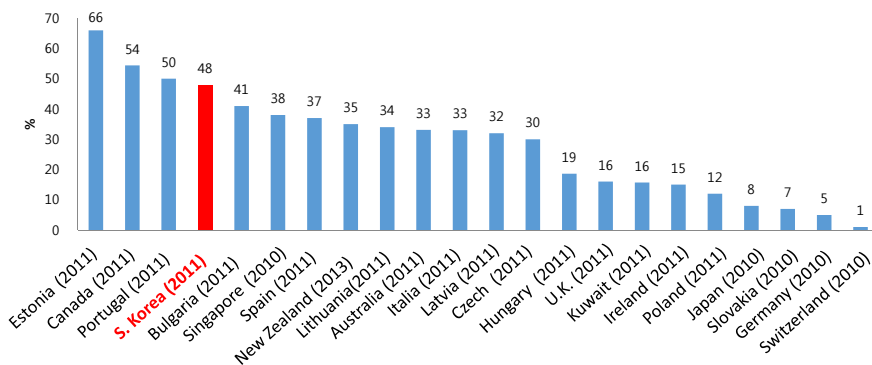


(unit: thousand households, %)

Category	Target	Participated	Uptake Rate
2005 Census	15,890	141	0.9
2010 Census	17,470	8,360	47.9

03 Results in the 2010 Census

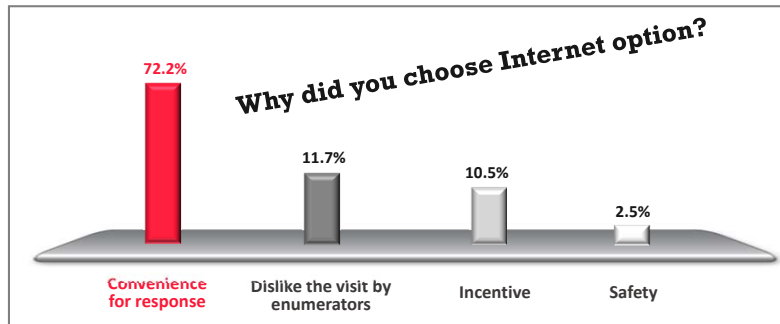
Internet uptake rate



03 Results in the 2010 Census

achievement of Internet option

- ✓ Reduce the census cost : **\$17.7M**
 - 10,000 fewer enumerators : \$3.9M saved
 - shorter enumeration period(19 days ► 16 days) : \$10.3M
 - data processing cost saved : \$3.5M



03 Results in the 2010 Census

data quality

- ✓ Internet option shows lower omission and duplication rates.

	Internet	Interview
Net omission rate	0.06	0.80
Omission rate	0.20	1.24
Duplication rate	0.14	0.44

03 Results in the 2010 Census

data quality

- ✓ The logic check functions of the Internet option worked effectively to secure accurate response.
- ✓ No. of edit specifications : Short form(88) , Long form(227)

No. of mean error	Internet	Interview
Short form	0.08	1.83
Long form	1.27	3.56

03 Results in the 2010 Census

success factors



81.6% Internet penetration rate



User-friendly questionnaire



Stable e-Census System



Campaign for Internet Option



Pull & Push strategy
– incentives / Internet option first

03 Results in the 2010 Census

success factors

Pull

- Incentives
 - Hand out gifts by drawings
 - Give students two hour credit for volunteer work
- Publicity Campaign
 - Campaign for Internet survey

Push

- Internet first



04 Internet Option in 2015 Census

targets for upgrading Internet questionnaire

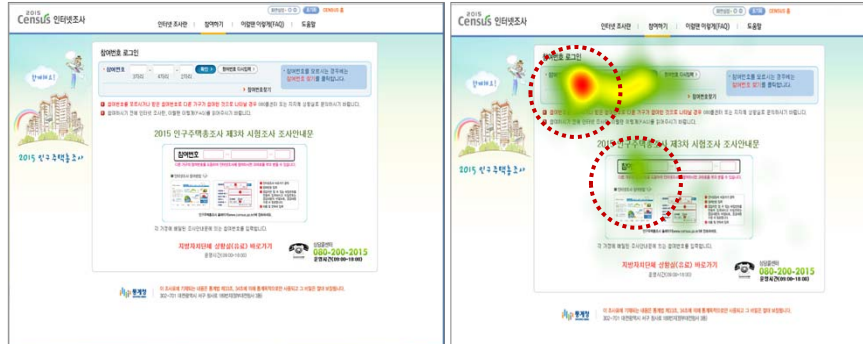
*Source : The evaluation of the Internet Questionnaire for 2015 Census,
Youngshil Park, Hyeonjeong Park, Hyejin Kim, Jinwoo Bae,
Deokho Kim, Statistical Research Institute (2014)*

- ✓ To design user-friendly questionnaire
 - eye tracking experiments
- ✓ To alleviate mode effect by designing questionnaire similar to paper mode
 - redesigning questionnaire pages from matrix form to topic based

04 Internet Option in 2015 Census

results on eye tracking experiments

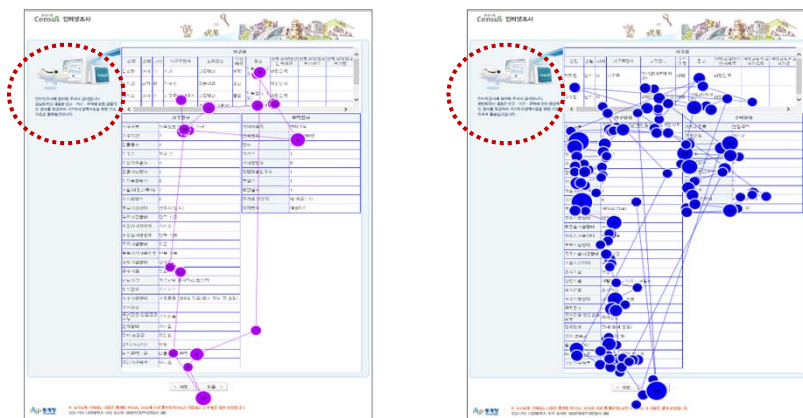
✓ Heat Map



04 Internet Option in 2015 Census

Results on eye tracking experiments

✓ Gaze Plot



mode effect

redesigning questionnaire page

✓ How to read the questionnaire

15

04 Internet Option in 2015 Census

Strategies for increasing uptake rate in 2015

- ✓ To design user-friendly questionnaire
 - reflecting the results of eye tracking experiments
 - transform to topic-based



User-friendly questionnaire

- ✓ To maximize success factors in 2010 census
 - pull strategy - incentives
 - push strategy – Internet option first



Pull & Push strategy

THANK YOU
감사합니다