



The Hidden Barriers: Assessing Usability of Government Websites for Asian Non-English Speakers

Y. Patrick Hsieh, Mandy Sha and Hyunjoo Park, RTI International
Patricia Goerman, US Census Bureau

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This paper is released to inform interested parties of research and to encourage discussion of work in progress. Any views expressed on (statistical, methodological, technical, or operational) issues are those of the authors and not necessarily those of the Census Bureau or RTI.

E-government and non-English speaker participation

- E-government: the utilization of information and communication technologies for delivering government information and services
- How can we encourage more non-English speakers to participate in the 2020 Census via the Web?
- Barriers to accessing electronic government information & services



Hidden barriers to engaging electronic government resources and services

- Section 508 compliance emphasizes the functional compatibility of E-government for disabled populations
- Executive Order 13166 (2000) requires “meaningful” access to government services for limited English proficient individuals
- Implicit assumption about users: **being fluent English speaker with above average literacy**



Hidden barriers to engaging electronic government resources and services

- **Hidden cognitive and language barriers** (Zarcadoolas, Blanco, Boyer, & Pleasant, 2002, Niehaves, 2011, Gallant, Irizarry, Boone, & Ruiz-Gordon, 2010: Neuhauser, Rothschild, & Rodríguez, 2007; Selden & Orenstein 2011)
 - **Users**
 - Low native language literacy: reading or writing ability in native language
 - Limited source language (English) proficiency: speak or read limited English
 - **Web sites**
 - Navigational usability
 - English content readability
 - Non-English content availability

Research questions and objective

- A case study using mockup Census Bureau website screens.
 - How do language barriers interact with usability and accessibility on draft Census Bureau landing page screens?
 - How do language barriers influence non-English speakers' engagement with a government website of this type?
 - What kinds of visual cues will help users engage with a government website of this type?

Data and method

- 45 in-depth usability/cognitive interviews with Asian men and women
 - April & May 2015.
 - Illinois, North Carolina, California, DC/Maryland.
 - 15 interviews each in Chinese, Korean & Vietnamese.
- Respondent profile
 - Native language reading literacy “very well” or “well”.
 - Limited English speaking & reading proficiency “not well” or “not at all”, except 3 bilingual participants.
 - Did not screen for internet proficiency


Testing procedures and materials

1. Advanced letter envelope with URL
2. Reminder post card with URL
3. Questionnaire home page with URLs in English and target languages
4. Target language questionnaire home page with URLs and security statement
5. Internet landing page with drop-down menu in English and tabs in target languages
 - Condition 1: **One of the tabs** shown in the target language
 - Condition 2: **None of the tabs** shown in the target language

All mockup materials shown on paper, not live Census Bureau websites.

Initial reaction to government web address

April 1, 2015



UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
 Washington, DC 20239-0001
 OFFICE OF THE DIRECTOR

You are required by law to respond to the 2015 Census Test. You can go online or call.

<https://respond.census.gov/censustest>

1-800-555-6892

Español: Según las leyes vigentes, usted está obligado a responder a la prueba del censo de 2015. Puede hacerlo en internet o llamar por teléfono.

中文: 法律规定您必须参加 2015 年人口普查测试。请上网或致电参加 (网址和电话号码在此卡上端)。

한국어: 연방법에 따라 귀하는 2015 년 인구 센서스 시범 조사에 참여할 의무가 있습니다. 위의 웹사이트를 방문하거나 전화하셔서 조사에 참여해 주십시오.

tiếng Việt: Luật pháp yêu cầu quý vị phải trả lời Thử Nghiệm Thống Kê Dân Số Quốc Gia 2015. Quý vị có thể trả lời trên mạng hoặc gọi điện. (Địa chỉ trang mạng và số điện thoại được ghi ở phía trên đầu trang.)

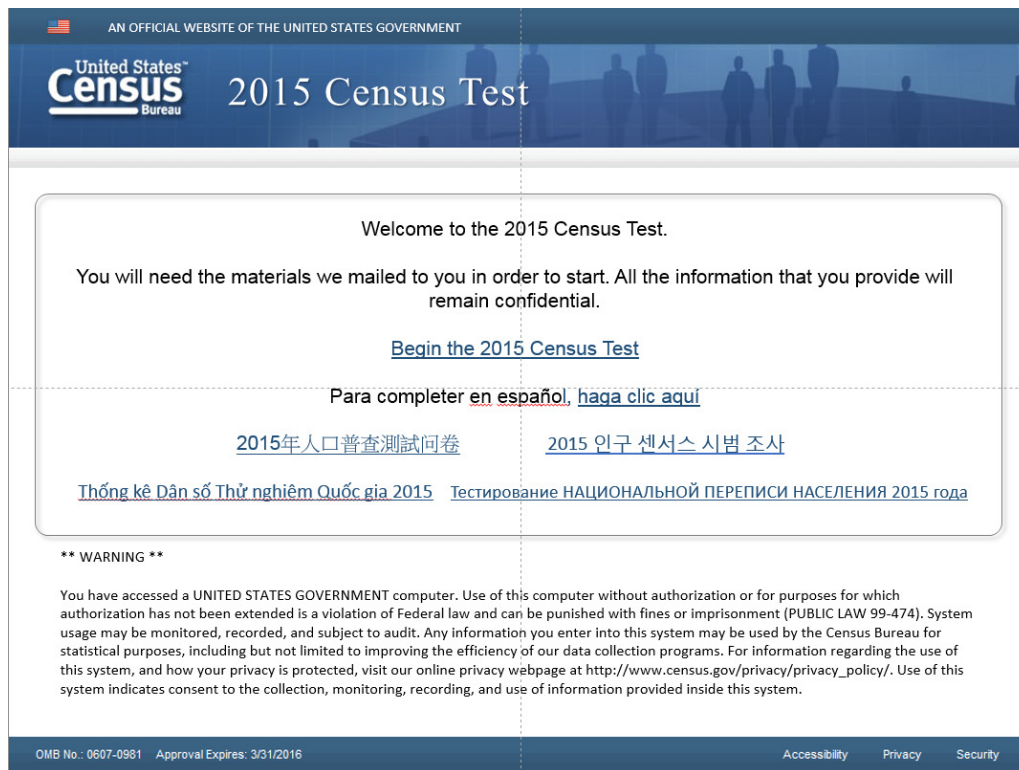
Русский: Согласно закону Вы обязаны принять участие в тестировании переписи населения 2015 г. Это можно сделать на сайте или по телефону.

العربية: استجابتك على التعداد السكاني التجريبي للولايات المتحدة الأمريكية لعام 2015 واجب قانوني. يمكن زيارة الموقع الإلكتروني أو الاتصال على رقم الهاتف المذكورين في أعلى البطاقة.

- Expect to see mainly English on the site
- Lack of computer and web experience and English proficiency may discourage people from accessing the website

Language of respondents	Expected to see:		
	English	English & Target Language	Target Language
Chinese	5	3	1
Korean	9	4	2
Vietnamese	6	3	6
Total	20	10	9

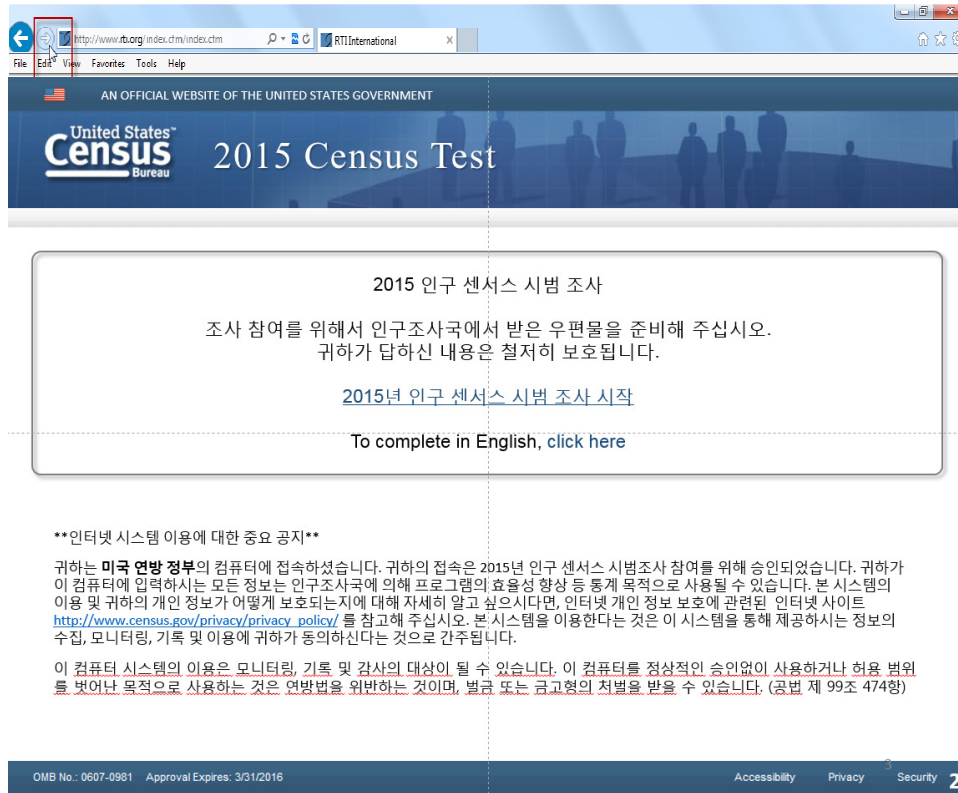
Engagement with URLs in non-English languages



- Clicking on URLs in non-English languages
- Clicking on English URLs
 - Some understanding
 - Placement of URLs

Language of respondents	Clicked on:	
	English	Target Language
Chinese	1	10
Korean	2	13
Vietnamese	7	8
Total	10	31

Content might be overwhelming regardless of design



Korean

IWR: At this page, where would you want to click?

R: One by one in a row. Because this is in Korean, I would like to click every title that draws my interest, and read everything.

IWR: If you want to see the next screen, where would you click?

R: On this [top] side, you see this arrow [arrow-shape cursor on the side menu]. I would press it all the way down to continue reading it.

IWR: What if you decided to click some text or wording?

R: I see "Begin the Pilot Survey" [in Korean] here in this menu. I think I would click it.

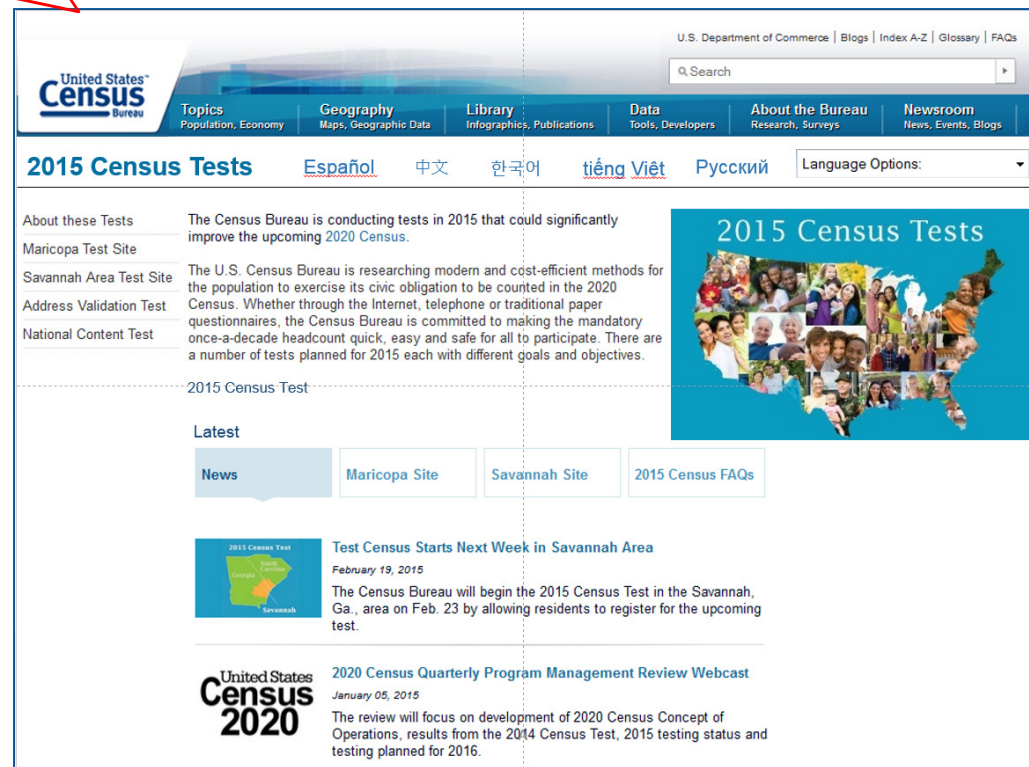
Critical roles of tabs and drop-down menu



R: I would [pointed to the Chinese tab] click the language tab 中文 (Chinese) to find more information because I understand Chinese

IWR: Did you notice that there are some language labels? What do you think they are for?

R: to let people select what [the languages] they need to understand the website

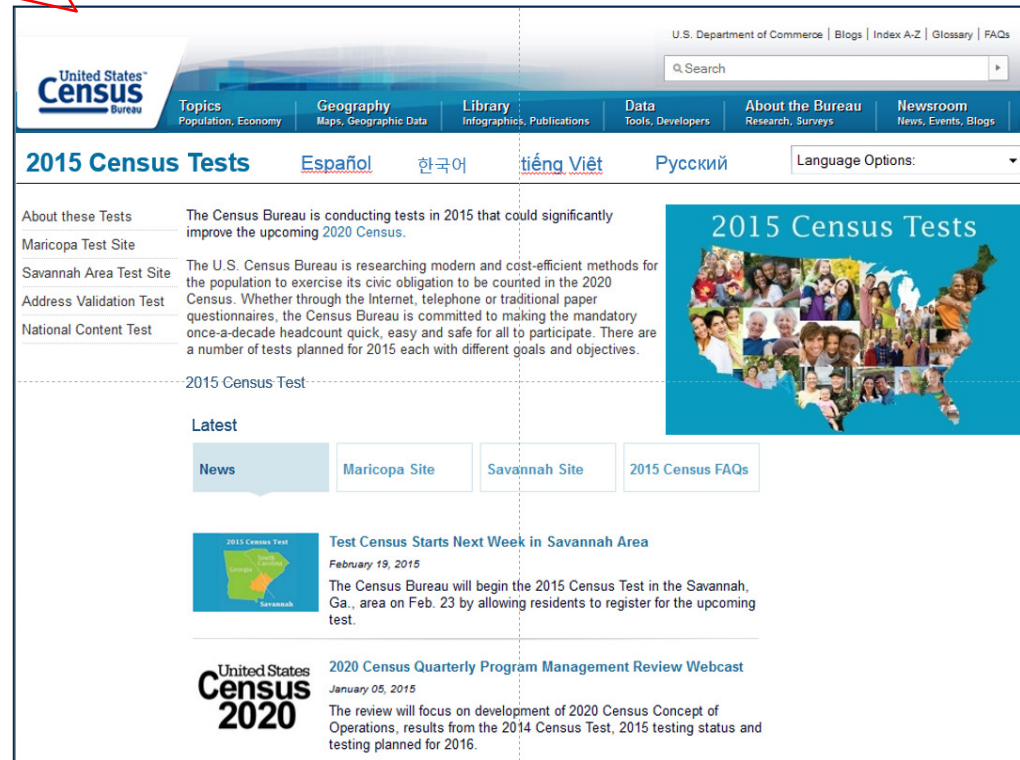


Mock-up design, not the actual Census Test website

Critical roles of tabs and drop-down menu

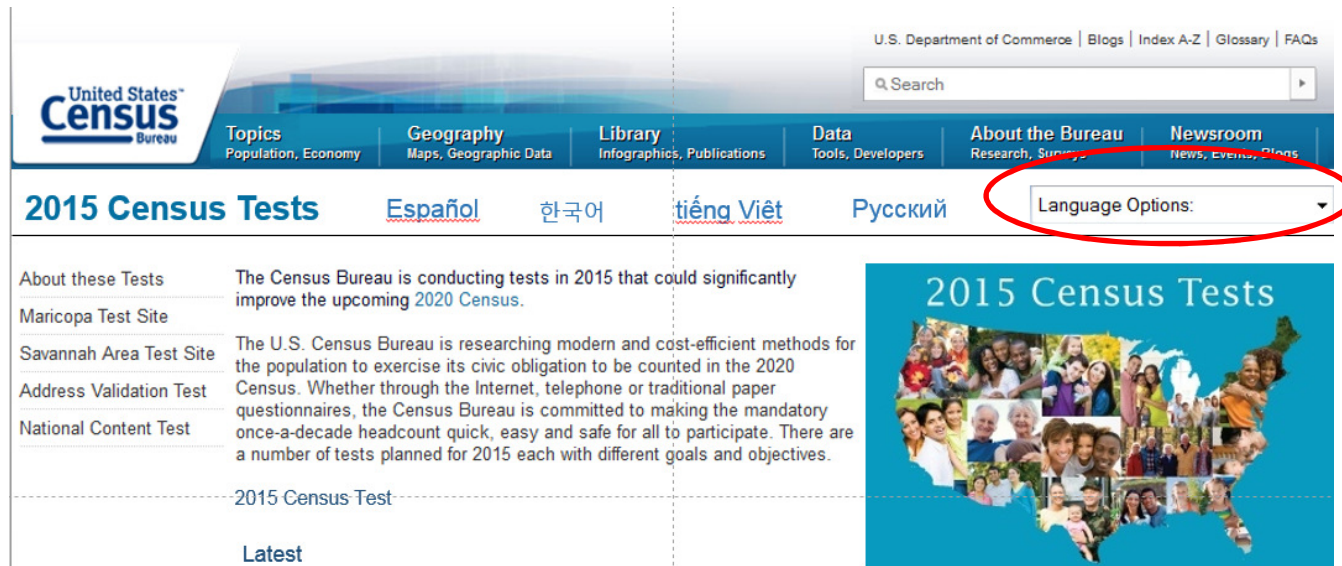


- 23 participants assigned
- Tabs noticed even when in a language not spoken by R.
- Most would click on drop-down menu to explore (14)
- Few tried using search function or clicking elsewhere to proceed
- All but one understood the purpose of the tabs (in both conditions)



Mock-up design, not the actual Census Test website

Critical roles of tabs and drop-down menu



- Web experience seems to be positively related to the understanding of the visual cues of the drop-down menu

- R said she saw an arrow, so she thought *there would be choices for her to choose.* (ID#64004)
- R : “I think I would see the map below. *This downward arrow is to see map below.*” (ID#63007)
- R said she might be curious and casually click to see “*what is in the drop-down menu.*” However, she also said she probably would not want to click on the menu since *she suspects there could still be English materials in the menu.* (ID#65003)

Discussion

- The **readability** of content needs improvement in all languages for lower literacy users
- **Usability and accessibility** can be improved by integrating non-English language translations into the functional features
- Beyond physical disabilities, **native language literacy, limited English proficiency, and web experience** may pose additional barriers to engaging with e-government services, even if *the translated materials are available and accessible online via “one click”*

Design implications for usability and accessibility

- Increase content readability in non-English languages
- Tabs provide great visual cues
- Placement of drop-down menu should stand out
- Tabs + drop-down menu = more effective visual cues
- Advanced techniques to detect language settings on respondents' devices
 - Impossible to have tabs in all non-English languages

For more information

Yuli Patrick Hsieh, PhD

yph@rti.org [@coolpat](https://www.instagram.com/coolpat)

