

Article

Linguistic diversity and accessibility in Mexican government web sites: executive branch

GABRIEL PÉREZ-SALAZAR, ANDREA AGUILAR-EDWARDS, CYNTHIA NALLELY MATA-MARTÍNEZ

Abstract. In Mexico, linguistic diversity is a right protected by various initiatives and laws. However, the ethno-linguistic mosaic found in Mexico due to the multicultural nature of the population, has not been properly addressed by online public policies. This study presents an assessment of the indigenous language provision on Mexican government websites at a federal, state and local level. Its principal results show that practically no indigenous-language content is available on such e-Government sites, and highlight accessibility issues in some State Governments. This leaves the Mexican indigenous population in a situation of great inequality that poses a huge threat to their information access rights.

Keywords. Accessibility, Democracy, Digital Divide, Linguistic diversity, e-Government.

Resumen. A pesar de que la diversidad lingüística es un derecho protegido por la legislación mexicana, esto no ha sido atendido de manera suficiente en el acceso a la información pública en línea. A partir de un análisis de contenido, se hace una revisión de la presencia de lenguas indígenas en los portales gubernamentales del poder ejecutivo, en sus niveles federal, estatal y municipal. Los resultados muestran la casi completa ausencia de contenidos en estos idiomas autóctonos, lo que aunado a algunos problemas de accesibilidad, dejan a este sector de la población en una delicada situación de marginalización cultural.

Palabras clave. accesibilidad, brecha digital, democracia, diversidad lingüística, e-Gobierno.

1. Introduction

On the road toward the Information Society (Webster, 2007), many countries have incorporated the use of Information and Communication Technologies (ICTs) in their governmental communication strategies. Despite the promise of higher levels of democracy, these efforts have left many citizens behind and, in some cases, have caused significant marginalization of access, with INEGI (*Instituto Nacional de Estadística y Geografía*, or the National Institute of Statistics and Geography) estimating that, by the end of 2014, around 50% of the Mexican population were not Internet users (2015). However, there is also a cultural layer added to this issue of access: linguistic diversity. In Mexico, more than 89 different indigenous languages are spoken by 6.67 million people, which represents near-

ly 6% of the total population (INEGI, 2010a). How is Federal, State and Local Government responding to this challenge? The aim of this work is to assess the linguistic diversity found on Mexican government websites, within the e-Government accessibility framework, particularly on the websites of government bodies in the Executive branch that represent those regions with high levels of indigenous language use. As discussed below, legal framework promotes the use of native languages in public administration communications processes and platforms; however, the goals and good faith found in the spirit of the law are very different from the reality observed in this study.

2. Linguistic Diversity in Mexico: a snapshot

Mexico's political structure comprises three levels: federal (the highest level of political power in the country), state (Federative Entities) and local (known as *municipios*, or municipal authorities). The following linguistic diversity description refers to Federative Entities (Table 1), where southern States such as Chiapas, Guerrero and Oaxaca have very significant levels of monolingual native-language speakers.

This data barely reflects the cultural diversity found in Mexico, as drawn from a very complex ethno-linguistic mosaic composed of over 25 indigenous regions. In addition, 74.4% of this population live in *municipios* with high and very high levels of marginalization, making it one of the most vulnerable groups in the Mexican population. This group also suffers the highest levels of child mortality, partly due to living in the most inaccessible locations, with a severe lack of sanitary, communication and education facilities (CNDPI, 2006).

After the armed *Zapatista* uprising in 1994, the indigenous issue gained a significant position in media agenda. The next section presents a very brief review of some of the most relevant legal reforms that followed this event.

3. Legal Framework: the word of the law on linguistic diversity in Mexico

Current language policy in Mexico developed as a result of many years of civil mobilization, both nationally and internationally. However, despite the significant influence of events such as the Indigenous and Tribal Peoples Convention held in 1989 by the International Labor Organization – ratified by Mexico in 1990 – (Anaya, 2004), the policy language towards indigenous minorities in Mexico has been less than consistent over recent years.

Mexican Constitution has recognized, since 1992, the presence of indigenous peoples with distinct cultures and languages across various regions of the country. However, it was not until 2001 and the reform of Article 2, that, in addition to recognizing the multicultural composition of this nation, the constitution also acknowledged the governmental responsibility to identify and establish the policies necessary to guarantee the rights of indigenous peoples.

Perhaps the most significant historical reference moment is the San Andrés Accords, which were the product of negotiations between the Zapatista Army of National Liberation (EZLN) and the government of President Ernesto Zedillo (1994-2000). These accords did not begin to be fulfilled until President Fox took office in 2000 (Morris, 2007). With

Table 1. Indigenous Population and indigenous language speakers, by Federative Entity

| Federative Entity | Indigenous language speakers (5 years old and above) | | | | | | | | | | | | | |
|---------------------|--|------------|-----------------------|------------|----------------------------------|------|------------------------------------|------|-------------|------|-----------|---------------------|----------------------|----------|
| | Population | | Indigenous population | | Population 5 years old and above | | Total indigenous language speakers | | Monolingual | | Bilingual | | Main language spoken | |
| | Total | % | Total | % | Total | % | Total | % | Total | % | Total | % | Speakers | Language |
| Chiapas | 3,920,892 | 1,117,597 | 28.5 | 3,288,963 | 809,592 | 24.6 | 296,916 | 37.5 | 495,163 | 62.5 | 291,550 | Tzotzil | | |
| Guerrero | 3,079,649 | 529,780 | 17.2 | 2,646,132 | 367,110 | 13.9 | 125,510 | 35.1 | 231,858 | 64.9 | 136,681 | Náhuatl | | |
| Oaxaca | 3,438,765 | 1,648,426 | 47.9 | 3,019,103 | 1,120,312 | 37.1 | 220,577 | 20.0 | 884,395 | 80.0 | 377,936 | Zapotecas | | |
| Nayarit | 920,185 | 56,172 | 6.1 | 815,263 | 37,206 | 4.6 | 6,684 | 19.2 | 28,165 | 80.8 | 16,932 | Huichol | | |
| Durango | 1,448,661 | 39,545 | 2.7 | 1,264,011 | 24,934 | 2.0 | 4,345 | 18.1 | 17,051 | 82.5 | 17,051 | Tepehuán | | |
| Hidalgo | 2,235,591 | 546,834 | 24.5 | 1,973,968 | 339,866 | 17.2 | 58,587 | 17.5 | 277,090 | 82.5 | 221,684 | Náhuatl | | |
| Chihuahua | 3,052,907 | 136,589 | 4.5 | 2,621,057 | 84,086 | 3.2 | 14,203 | 17.4 | 67,339 | 82.6 | 70,842 | Tarahumara | | |
| Puebla | 5,076,686 | 957,650 | 18.9 | 4,337,362 | 565,509 | 13.0 | 76,503 | 13.8 | 477,167 | 86.2 | 416,968 | Náhuatl | | |
| Michoacán | 3,985,667 | 199,245 | 5.0 | 3,479,357 | 121,849 | 3.5 | 15,476 | 13.0 | 103,138 | 87.0 | 109,361 | Purépecha O Tarasco | | |
| Veracruz | 6,908,975 | 1,057,806 | 15.3 | 6,118,108 | 633,372 | 10.4 | 78,709 | 12.7 | 543,207 | 87.3 | 338,324 | Náhuatl | | |
| San Luis Potosí | 2,299,360 | 348,551 | 15.2 | 2,010,539 | 235,253 | 11.7 | 24,073 | 10.3 | 209,015 | 89.7 | 138,523 | Náhuatl | | |
| Sinaloa | 2,536,844 | 87,948 | 3.5 | 2,241,298 | 49,744 | 2.2 | 4,543 | 9.9 | 41,117 | 90.1 | 13,888 | Mixtecas | | |
| Jalisco | 6,322,002 | 75,122 | 1.2 | 5,541,480 | 39,259 | 0.7 | 3,247 | 8.9 | 33,174 | 91.1 | 10,976 | Huichol | | |
| Yucatán | 1,658,210 | 981,064 | 59.2 | 1,472,683 | 549,532 | 37.3 | 48,364 | 8.8 | 498,490 | 91.2 | 547,098 | Maya | | |
| Quintana Roo | 874,963 | 343,784 | 39.3 | 755,442 | 173,592 | 23.0 | 12,777 | 7.4 | 159,092 | 92.6 | 163,477 | Maya | | |
| Querétaro | 1,404,306 | 47,420 | 3.4 | 1,224,088 | 25,269 | 2.1 | 1,699 | 6.9 | 22,934 | 93.1 | 22,077 | Otomí | | |
| Zacatecas | 1,353,610 | 4,039 | 0.3 | 1,188,724 | 1,837 | 0.2 | 107 | 6.3 | 1,598 | 93.7 | 358 | Tepehuán | | |
| Campeche | 690,689 | 185,938 | 26.9 | 606,699 | 93,765 | 15.5 | 5,308 | 5.7 | 87,225 | 94.3 | 75,874 | Maya | | |
| Baja California | 2,487,367 | 81,679 | 3.3 | 2,010,869 | 37,685 | 1.9 | 1,146 | 3.2 | 34,822 | 96.8 | 14,184 | Mixtecas | | |
| Baja California Sur | 424,041 | 11,481 | 2.7 | 374,215 | 5,353 | 1.4 | 152 | 3.0 | 4,922 | 97.0 | 2,137 | Mixtecas | | |
| Colima | 542,627 | 6,472 | 1.2 | 457,777 | 2,932 | 0.6 | 62 | 2.7 | 2,211 | 97.3 | 1,028 | Náhuatl | | |
| Sonora | 2,216,969 | 126,535 | 5.7 | 1,956,617 | 55,694 | 2.8 | 1,277 | 2.4 | 51,383 | 97.6 | 24,114 | Mayo | | |
| Morelos | 1,555,296 | 72,435 | 4.7 | 1,334,892 | 30,896 | 2.3 | 624 | 2.2 | 27,718 | 97.8 | 18,656 | Náhuatl | | |
| Tlaxcala | 962,646 | 71,986 | 7.5 | 846,877 | 26,662 | 3.1 | 445 | 1.7 | 25,290 | 98.3 | 23,737 | Náhuatl | | |
| Tabasco | 1,891,829 | 130,896 | 6.9 | 1,664,366 | 62,027 | 3.7 | 815 | 1.4 | 58,994 | 98.6 | 38,342 | Chontal De Tabasco | | |
| México | 13,096,686 | 939,355 | 7.2 | 11,097,516 | 361,972 | 3.3 | 4,600 | 1.3 | 346,143 | 98.7 | 113,424 | Mazahua | | |
| Guajuato | 4,663,032 | 26,512 | 0.6 | 4,049,950 | 10,689 | 0.3 | 113 | 1.1 | 9,858 | 98.9 | 1,433 | Chichimeco Jonaz | | |
| Coahuila | 2,298,070 | 7,454 | 0.3 | 2,018,053 | 3,032 | 0.2 | 31 | 1.1 | 2,739 | 98.9 | 750 | Náhuatl | | |
| Agascalientes | 944,285 | 3,472 | 0.4 | 821,404 | 1,244 | 0.2 | 10 | 0.9 | 1,162 | 99.1 | 268 | Náhuatl | | |
| Nuevo León | 3,834,141 | 30,051 | 0.8 | 3,392,025 | 15,446 | 0.5 | 108 | 0.7 | 14,634 | 99.3 | 8,308 | Náhuatl | | |
| Distrito Federal | 8,605,239 | 339,931 | 4.0 | 7,738,307 | 141,710 | 1.8 | 725 | 0.5 | 136,812 | 99.5 | 37,450 | Náhuatl | | |
| Tamaulipas | 2,753,222 | 41,858 | 1.5 | 2,427,309 | 17,118 | 0.7 | 67 | 0.4 | 16,319 | 99.6 | 8,407 | Náhuatl | | |
| Total | 97,483,412 | 10,253,627 | | 84,794,454 | 6,044,547 | | 1,007,803 | | 4,912,896 | | 3,261,838 | | | |

Source: INEGI (2010b)

regard to language policy, these accords granted indigenous peoples the right to use, promote and develop their languages, cultures, customs and traditions, in political, economic, social, religious and cultural terms (Ocampo, 2005).

The General Law on Linguistic Rights of Indigenous Peoples was approved in March 2003. This law recognizes and protects the individual and collective linguistic rights of indigenous peoples and assumes the obligation to promote the use and practice of indigenous languages. Directly related to the topic of this study, Article 7 of this Law provides that the indigenous languages are valid, like the Spanish language, for any public matter or procedure, as well as providing full access to management, and public information services (General Law on Linguistic Rights of Indigenous Peoples, 2003).

It should be noted that while there are multiple projects at the level of both government and non-governmental organizations that address indigenous usage, these are isolated and lack the support and projection required to be described as *State policy*.

In 2012, the Mexican Senate created the Committee of Guarantee of Access and Transparency of Information, whose work plan, among other things, commits to the following:

Incorporate the Internet as a means, with greater reach, by which citizens can keep themselves informed.

Guarantee access to information for all, through simple and expeditious procedures.

Make information available to the public through local or remote electronic media.

Implement the necessary mechanisms to meet the requirement from Article 4 of the General Law on Linguistic Rights of Indigenous Peoples, which establishes that their languages have the same validity as the Spanish language.

Translate into indigenous languages all necessary documents in order to ensure access to information for a wider range of people (Senado de la República, 2013).

This document states explicitly that the State is obliged to fully guarantee the right to information in indigenous languages.

4. Theoretical framework

The use of government websites has been widely discussed as one of the possibilities that ICTs provide to enhance democracy and citizenship (Wilhelm, 2000; Papacharissi, 2010; Kö & Francesconi, 2014). In terms of perspectives on the digital divide (Norris, 2001; Servon, 2002), several analyses related to such websites have been conducted in recent years, focusing mostly on accessibility issues, in such countries as: Northern Ireland (Paris, 2005), China (Shi, 2006; Rau, Zhou, Sun, Zhong, 2014), Brazil (Freire, de Castro, de Mattos Fortes, 2009), the Czech Republic (Kopackova, Michalek, Cejna, 2010), the United Kingdom (Kuzma, 2010), Greece (Basdekis, Klironomos, Metaxas, Stephanidis, 2010), Spain (Lopez del Ramo, 2010), Iran (Hassanzadeh, Navidi, 2010), Dubai (Kamoun, Basel Almourad, 2014), Italy (Gambino, Pirrone, Di Giorgio, 2014), and Turkey (Karkin, Janssen, 2014). With specific reference to language, most authors in these studies highlight the low levels of compliance with W3C Accessibility Guidelines in terms of a proper declaration of the HTML code used. In the case of languages written in non-Roman characters (Chinese, Greek, Arabic, etc.), Shi (2006) and Basdekis, Klironomos, Metaxas

& Stephanidis (2010) mention an additional challenge to content representation as part of the accessibility problem.

Another related issue, relates to the way language is managed on some government websites. Cañavate & Navarro (2004) review the use of websites in the Spanish local government departments during the 1997-2002 period, finding that the Top Level Domain (TLD) *.es* has been increasingly used, and that the official languages of the autonomous provinces, such as Catalan, Basque and Gallego, are found on said websites. Cunliffe (2008, p. 200) examines the use of the Welsh language (*Cymraeg*) during the 2007 elections, and finds that, despite the Welsh Language Act of 1993 that requires public bodies to prepare Welsh Language schemes that detail how Welsh and English will be dealt with, either on websites or other media, Welsh language provision was entirely at the discretion of the individual political parties. Only four out of 18 party websites observed were Welsh/English bilingual.

Because of its multilingualism, India represents a special case in this area, where, as Bhattacharya, Gulla, Gupta (2012) suggest, this has been a significant challenge for ICT designers. Given the 22 official languages spoken in this country, these authors emphasize the need to develop multilingual versions of government web sites. Similarly, for Bouaziz, Fakhfakh (2007, p. 915), the availability of different languages is a basic usability issue to consider in the design of government portals when there is a multilingual population. Karkin & Janssen (2014) also considered the possibility of different language options as part of the indicators they applied, in their study of local government websites in Turkey.

5. Method

Three content-analyses (Krippendorff, 1990) were conducted, one for each level of government in Mexico, at the Executive branch:

a) Federal: The observation *corpus* comprised all 20 websites that constitute the Executive at this level (this included all 19 Federal Ministries, and the website of the Presidency).

b) Federative Entities: All 32 state-level websites were analyzed.

c) Local (*Municipio*): Mexico has 2,457 (N) *municipios*. With a confidence level of 90% and an error margin of 5%, the sample size obtained was $n = 247$. The sample was selected based on a multistage strategy. Firstly, we obtained the representative proportions of *municipios* for each Federative Entity. Then, within each State layer, we selected the *municipios* with the highest proportion of indigenous language speakers.

In all three cases, the period of observation was from May 25th to June 15th 2015. The content on each portal was verified in order to find information presented in an indigenous language, with every link on the home followed up to one level with the same objective. When indigenous language content was found, its specific content matter was specifically registered. As in Karkin & Janssen (2014), special attention was paid to the possibility of there being versions of these portals in different languages. When a URL gave a 404 error (site not found), a second attempt was made to access it at the end of the first observation round, and, if the problem persisted, this was correspondingly registered.

6. Results

The content-analysis carried out allowed us to gather significant information related to accessibility on these government websites, thus providing a general context for the identification of language provision. Data is presented according to the analysis of each level of government.

1. Federal government websites: While no indigenous language content was observed, half of them had a version in English. No information was found to be specifically addressed to indigenous people. All of the sites used the *.gob.mx* TLD in their URL, and no 404 errors were found.

2. Federative Entities: Again, no indigenous language content was observed on any site. One quarter of the sites ($qty = 8$) used the Google Translate Toolbar, in order to provide an automatic version in those languages supported by this free service, which includes none of the indigenous Mexican languages.¹ Since this feature is configured by the person who installs it, the possible translations observed ranged from 5 European languages (English, Italian, French, Russian and German) to every language offered by this tool. In 53.13% of the portals, information addressed to specific population groups was found, 23.53% of which were for indigenous people (with all content in Spanish). Table 2 shows the top five groups found during the analysis (out of 17 sites that offered this kind of information). All of the sites used the *.gob.mx* TLD in their URL. No 404 errors were found.

Table 2. Top 5 groups for targeted information in Federative Entities

| Group | f | % |
|--------------|----|--------|
| Young people | 14 | 82.35% |
| Women | 11 | 64.71% |
| Children | 11 | 64.71% |
| Seniors | 10 | 58.82% |
| Disabled | 10 | 58.82% |

3. *Municipal-level*: The *municipios*' web addresses were obtained using this algorithm: 1) Searching within each Federative Entity portal, and, when found, following the *municipio's* own URL. 2) When the *municipio's* own link was not available on the state's own sites, a query was made using the Google search engine. Results are divided into two categories: accessibility and indigenous language provision.

¹ Languages supported are: Afrikaans, Albanian, Arabic, Armenian, Azerbaijani, Basque, Belarusian, Bengali, Bosnian, Bulgarian, Catalan, Cebuano, Chichewa, Chinese (Simplified), Chinese (Traditional), Croatian Czech, Danish, Dutch, English, Esperanto, Estonian, Filipino, Finnish, French, Galician, Georgian, German, Greek, Gujarati, Haitian Creole, Hausa, Hebrew, Hindi, Hungarian, Icelandic, Igbo, Indonesian, Irish, Italian, Japanese, Javanese, Kannada, Kazakh, Khmer, Korean, Lao, Latin, Latvian, Lithuanian, Macedonian, Malagasy, Malay, Malayalam, Maltese, Maori, Marathi, Mongolian, Myanmar (Burmese), Nepali, Norwegian, Persian, Polish, Portuguese, Punjabi, Romanian, Russian, Serbian, Sesotho, Sinhala, Slovak, Slovenian, Somali, Spanish, Sundanese, Swahili, Swedish, Tajik, Tamil, Telugu, Thai, Turkish, Ukrainian, Urdu, Uzbek, Vietnamese, Welsh, Yiddish, Yoruba and Zulu.

a) Accessibility.

The general accessibility indicators obtained are shown in Table 3.

Table 3. Accessibility on the municipios' websites

| Municipios observed (n=247) | | % | Reported 404 error | Official site hosted at: | | |
|-----------------------------------|-----|---------|--------------------|--------------------------|------------------------------|----------|
| | | | | .gob.mx | Other TLD (.com, .net, .org) | Facebook |
| Municipios with official websites | 171 | 69.23% | 17 | 120 | 29 | 22 |
| Municipios without a website | 76 | 30.77% | 9.94% | 70.18% | 16.96% | 12.87% |
| Total | 247 | 100.00% | | | | |

The general data presented in the above table is analyzed more closely in Table 4, for which researchers built an Accessibility Error Proportion (AEP), obtained by dividing the number of total accessibility errors by the number of *municipios* in the sample that were taken from the Federative Entities with no *URL not found* or *Site not found* errors.

Table 4. Index of Accessibility Error Proportion (AEP), by selected Federative Entities

| Federative Entity | Number of municipios | Municipios in the sample | URL not found or non-existent | Site not found (404 error) | Total of accessibility errors | Index of accessibility errors |
|------------------------------|----------------------|--------------------------|-------------------------------|----------------------------|-------------------------------|-------------------------------|
| Oaxaca | 570 | 57 | 41 | 1 | 42 | 0.74 |
| Yucatán | 106 | 11 | 7 | | 7 | 0.64 |
| Chiapas | 118 | 12 | 3 | 4 | 7 | 0.58 |
| Durango | 39 | 4 | | 2 | 2 | 0.50 |
| Veracruz | 212 | 21 | 10 | | 10 | 0.48 |
| Guerrero | 81 | 8 | 3 | | 3 | 0.38 |
| Puebla | 217 | 22 | 7 | | 7 | 0.32 |
| Michoacán de Ocampo | 113 | 11 | 3 | | 3 | 0.27 |
| Coahuila de Zaragoza | 38 | 4 | | 1 | 1 | 0.25 |
| Tamaulipas | 43 | 4 | | 1 | 1 | 0.25 |
| México (State) | 125 | 12 | 1 | 1 | 2 | 0.17 |
| Sonora | 72 | 7 | 1 | | 1 | 0.14 |
| Chihuahua | 67 | 7 | | 1 | 1 | 0.14 |
| Jalisco | 125 | 12 | | 1 | 1 | 0.08 |
| TOTAL | 1926 | 192 | 76 | 12 | 88 | avg=0.40 |
| México (country level) total | 2457 | 247 | | | | |

In the case of the 76 *municipios* with URL not found or non-existent URLs, researchers cross-referenced the sample with the CONAPO (2010) database, in order to identify

a frequency correlation of this URL absence and the marginalization level.² Results are shown in Table 5.

Table 5. Marginalization levels in municipios with URL not found or non-existent URLs

| Federative Entities | Marginalization level | | | |
|---------------------|-----------------------|--------|--------|---------|
| | Very high | High | Medium | Total |
| Chiapas | 3 | | | 3 |
| Guerrero | 3 | | | 3 |
| México | | | 1 | 1 |
| Michoacán de Ocampo | | 1 | 2 | 3 |
| Oaxaca | 30 | 10 | 1 | 41 |
| Puebla | 4 | 3 | | 7 |
| Sonora | | | 1 | 1 |
| Veracruz | 8 | 2 | | 10 |
| Yucatán | 4 | 3 | | 7 |
| TOTAL | 52 | 19 | 5 | 76 |
| % | 68.42% | 25.00% | 6.58% | 100.00% |

This table shows that the higher marginalization levels are (as in *municipios* located in Oaxaca, Veracruz, Puebla or Yucatán), the more frequent is that their websites present accessibility issues.

b) Indigenous language provision.

The general results related to indigenous language are shown in Table 6.

Table 6. Indigenous language provision on municipio websites

| Municipios observed (n=247) | % | |
|---|-----|--------|
| Municipios without information in indigenous language | 243 | 98.38% |
| Municipios with some information in indigenous language | 4 | 1.62% |
| TOTAL | 247 | |

A detailed analysis of *municipio* websites with any indigenous language content shows that on three of these, this consisted of videos featuring the Mayor of each *municipio* (known as the *Presidente Municipal*), as shown in Table 7:

² CONAPO (2010) estimates the marginalization level based on: % of illiterate population over 15 years old; % of population with incomplete basic education; % of population living in households without drainage; % of population living in households without electricity supply; % of population living in households without running water; % of population living in households with some level of overcrowding; % of population living in houses with a dirt floor; % of population living in villages with under 5,000 inhabitants; and, % of population with wages of up to 10 USD/day. The given values for this variable are: Very high, high, medium and low.

Table 7. Municipio websites containing a video featuring the Mayor speaking in an indigenous language

| | Municipio | Federative Entity | URL |
|---|--------------------------------|-------------------|---|
| 1 | Mezquital | Durango | http://mezquital.durango.gob.mx/ |
| 2 | Tamazulápam del Espíritu Santo | Oaxaca | http://www.municipiotamazulapam.com/ |
| 3 | Nacajuca | Tabasco | http://www.ayuntamientonacajuca.org/ |

The fourth *municipio* website with some information in indigenous language was San Juan Yatzona (Oaxaca)³, which presented an image in celebration of Earth Day (Figure 1):

Figure 1. Image in Zapoteco and Mixe found on the San Juan Yatzonas Facebook page

Source: <<https://www.facebook.com/sanjuanyatzona/photos/a.1515895528685947.1073741828.1515876548687845/1584764565132376/>>

7. Discussion and conclusions

Multilingualism is very poorly addressed both in political, and in social life in Mexico. Even though there was a discussion about its cultural richness after the *Zapatista* uprising, sadly, our results are part of a tendency found in almost every aspect in everyday

³ The URL is: <<https://www.facebook.com/sanjuanyatzona>> (10/2016).

life. This is not just an issue in online contents, but in the majority of the cultural production in this country.

The lack of linguistic diversity found on Mexican government websites, at any level (federal, state and local), in their Executive branch, is therefore, more the rule than the exception. Despite the existence of legal grounds that proclaim indigenous language use as a right, the multicultural language policy has not yet been translated into practice. Even in Federative Entities with significant indigenous language speaking populations, with a high proportion of monolingual people (Chiapas, 37.5%; Guerrero, 35.1%; and, Oaxaca, 20%), almost no content in any language other than Spanish was found.

As Morris (2007) suggests, statements made in one official language typically have both a substantive and a symbolic effect. Substantively, this grants individuals the right to access government services in one specific language. Symbolically, this gesture can affect the way individuals identify with their state. In a multicultural country like Mexico, openness to linguistic diversity must be made a priority.

The observed absence of indigenous languages contrasts starkly with the 50% English language provision found on federal level websites and the use of the free web-based Google Translator on 25% of the portals of the Federative Entities. Lasswell's communication model (1948) clearly indicates to consider *who* a message is addressed to, and, in this case, the indigenous peoples of Mexico do not appear to be the intended recipients.

This cultural issue occurs in the context of a digital divide, with accessibility as a very important variable, particularly at the governmental level operating closest to the people themselves. As observed from the AEP analysis, at a *municipio* level in Federative Entities such as Oaxaca, Yucatán and Chiapas, there were very significant accessibility problems with the local government websites. The relatively high prevalence of non-existent government web sites significantly reduces the possibilities of populations in such locations, to exercise their information access rights, especially when those Federative Entities also have some of the lowest levels of Internet access (INEGI, 2013) and the highest positions on the marginalization index (CONAPO, 2010) in the country.

We suggest that this marginalization is likely to be one of the reasons why some local governments have created a Facebook account instead of any kind of website – let alone one with the *.gob.mx* TLD. While on the one hand, this has no cost for the *municipio*, and certainly provides a channel through which to interact with its citizens,⁴ on the other, this represents a form of mediatization where public information transmitted via a private-enterprise interface that has its own cultural bias. In any case, any non-*.gob.mx* domain (as well as Facebook pages) is open to legitimacy issues, given the fact that no verification process is followed in the registration of such *.com*, *.org* or *.net* URLs.⁵

As Servon (2002) has pointed out, the digital divide is a phenomena related to poverty, which seems to be supported by the results of our study. As our analysis indicates, the absence of government websites appears to be associated with the high marginality levels found in our sample. Thus, the indigenous population finds itself in a situation of significant inequality, where, along with very difficult living conditions, their cultural-linguistic rights are not properly respected by the Mexican State. The construction of a truly

⁴ According to AMIPCI (2015), over 90% of Mexican Internet users have a Facebook account.

⁵ In order to obtain an *.gob.mx* domain, the applicant must provide evidence of the legitimacy of their request to NIC-Mexico, the sole administrator of *.mx* domains.

inclusive Information Society needs to take this into consideration. We consider that the Mexican government, on all three levels, has a duty to develop public policies that provide public and governmental information in such a way that protects their linguistic rights as part of their cultural heritage.

8. Bibliography

- AMIPCI (2015), 11° estudio sobre los hábitos de los usuarios de internet en México; <https://www.amipci.org.mx/images/AMIPCI_HABITOS_DEL_INTERNAUTA_MEXICANO_2015.pdf>.
- Anaya, A. (2004), “Explaining the Politics of Recognition of Ethnic Diversity and Indigenous Peoples’ rights in Oaxaca, Mexico”, in *Bulletin of Latin American Research*, 23, 4, pp. 414-433.
- Basdekis, I., Klironomos, I., Metaxas, I., Stephanidis, C. (2010), “An overview of web accessibility in Greece: a comparative study 2004–2008”, in *Universal Access in the Information Society*, 9, pp. 185-190.
- Bhattacharya, D., Gulla, U., Gupta, M.P. (2012), “E-service quality model for Indian government portals: citizens’ perspective”, in *Journal of Enterprise Information Management*, 25(3), pp. 246-271.
- Bouaziz, F., Fakhfakh, R. (2007), “Service quality in e-Government portals”, in Tatnall, A. (ed.), *Encyclopedia of Portal Technologies and Applications*, IGI Global, Hershey(PA), pp. 912-917.
- Cañavate, A. M., Navarro, C. C. (2004), “La Administración local española en Internet: estudio cuantitativo de la evolución de los sistemas de información Web de los ayuntamientos (1997-2002)”, en *Ciencias de la Información*, 35(1), pp. 43-55.
- CNDPI (2006), *Regiones indígenas de México*. Comisión Nacional para el Desarrollo de los Pueblos Indígenas, México.
- CONAPO (2010), Índice de marginación por entidad federativa y municipio 2010; <http://www.conapo.gob.mx/en/CONAPO/Indices_de_Marginacion_2010_por_entidad_federativa_y_municipio>.
- Cunliffe, D. (2008), “Welsh-language provision on party web sites during the 2007 Welsh Assembly election”, in *Aslib Proceedings: New Information Perspectives*, 60, 3, pp. 199-215.
- Freire, A. P., de Castro, M., de Mattos Fortes, R. P. (2009), “Acessibilidade dos sites web dos governos estaduais brasileiros: uma análise quantitativa entre 1996 e 2007”, em *Revista de Administração Pública*, 43, 2, pp. 395-414.
- Gambino, O., Pirrone, R., Di Giorgio, F. (2014), “Accessibility of the Italian institutional web pages: a survey on the compliance of the Italian public administration web pages to the Stanca Act and its 22 technical requirements for web accessibility”, in *Universal Access in the Information Society*, pp. 1-8.
- General Law of Linguistic Rights of Indigenous Peoples (2003), as amended at *Diario Oficial de la Federación*, April 9th, 2012.
- Hassanzadeh, M., Navidi, F. (2010), “Web site accessibility evaluation methods in action: A comparative approach for ministerial web sites in Iran”, in *The Electronic Library*, 28, 6, pp. 789-803.

- INEGI (2015), Estadísticas a propósito del Día Mundial del Internet; <<http://www.inegi.org.mx/saladeprensa/aproposito/2015/internet0.pdf>>.
- _____ (2013), Estadísticas sobre Disponibilidad y uso de las Tecnologías de Información y Comunicaciones en los Hogares; <http://www.inegi.org.mx/prod_serv/contenidos/espanol/bvinegi/productos/metodologias/MODUTIH/MODUTIH2013/MODUTIH2013.pdf>.
- _____ (2010a), Censo de población y vivienda 2010. Lengua indígena; <http://cuentame.inegi.org.mx/hipertexto/todas_lenguas.htm>.
- _____ (2010b), *Panorama Sociodemográfico de México*, INEGI, Aguascalientes (México).
- Kamoun, F., Basel Almourad, M. (2014), "Accessibility as an integral factor in e-government web site evaluation: The case of Dubai e-government", in *Information Technology & People*, 27 (2), pp. 208-228.
- Karkin, N., Janssen, M. (2014), "Evaluating websites from a public value perspective: A review of Turkish local government websites", in *International Journal of Information Management*, 34 (3), pp. 351-363.
- Kö, A., Francesconi, E. (2014), *Electronic Government and the Information Systems Perspective*, Springer, Switzerland.
- Kopackova, H., Michalek, K., Cejna, K. (2010), Accessibility and findability of local e-government websites in the Czech Republic", in *Universal Access in the Information Society*, 9, pp. 51-61.
- Krippendorff, K. (1990), *Metodología de análisis de contenido. Teoría y práctica*, Paidós, Barcelona.
- Kuzma, J. M. (2010), "Accessibility design issues with UK e-government sites", in *Government Information Quarterly*, 27, pp. 141-146.
- Lasswell, H. D. (1948), "The structure and function of communication in society", in *The communication of ideas*, 37, pp. 215-228.
- López del Ramo, J. (2010), "Características estructurales de la web y su incidencia en la usabilidad. Análisis del caso en los portales municipales de la Comunidad de Madrid", in *Scire*, 16, 1, pp. 81-92.
- Morris, R. (2007), "Al borde del multiculturalismo: Evaluación de la política lingüística del estado Mexicano en torno a sus comunidades indígenas", en *Confines* 3, 5, pp. 59-73.
- Norris, P. (2001), *Digital Divide, Civil Engagement, Information Poverty, and the Internet Worldwide*, Cambridge University Press, Cambridge (MA).
- Ocampo, A. (2005), "El Interminable Debate de los pueblos indígenas o el vacío que la indefinición entre Rousseau y Taylor se vive en México", en *Razón y Palabra*, 45; <<http://www.razonypalabra.org.mx/antiores/n45/aocampo.html>>.
- Papacharissi, Z. A (2010), *A Private Sphere. Democracy in a Digital Age*, Polity Press, Cambridge (UK).
- Paris, M. (2005), "Website accessibility: a survey of local e-government websites and legislation in Northern Ireland", in *Universal Access in the Information Society*, 4, pp. 292-299.
- Rau, P. L. P., Zhou, L., Sun, N., Zhong, R. (2014), "Evaluation of web accessibility in China: changes from 2009 to 2013", *Universal Access in the Information Society*, pp. 1-7.
- Senado de la República (2013), "Acuerdo del Comité de Garantía de Acceso y Transparencia de la Información por el que se recomienda a la mesa directiva del Senado de la

República la celebración de la firma de un convenio de colaboración con el Instituto Nacional de Lenguas Indígenas”; <<http://www.senado.gob.mx/comisiones/cogati/reu/docs/acuerdo2-6.pdf>>.

Servon, L. (2002), *Bridging the Digital Divide*, Blackwell Publishing, London.

Shi, Y. (2006), “The accessibility of Chinese local government Web sites: An exploratory study”, in *Government Information Quarterly*, 24, pp. 377-403.

Webster, F. (2007), *Theories of the Information Society*, Routledge, London.

Wilhelm, A. G. (2000), *Democracy in the Digital Age: Challenges to Political Life in Cyberspace*, Routledge, New York.