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Triply marked: Communicative disconnections in the southern Ecuadorian Amazonia

Triplemente marcadas: desconexiones comunicativas en la Amazonía sur ecuatoriana

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ABSTRACT

In the XXI century, the mobile age, it is worth revisiting the thesis of exclusive isolation in remote areas, or of "particularly difficult access" enunciated in the MacBride Report in the eighties. The objective of this investigation is to provide a snapshot of the disconnections and inequalities suffered in a technologically remote context: the southern Ecuadorian Amazonia. To carry out this study we chose a quantitative methodology. Considering the variables of gender, ethnicity (indigenous communities –Shuar and Kichwa-Saraguro– and non-indigenous) and age, we analyzed the penetration of mobile technologies (from the gap in the ownership of devices, access through loan and coverage), the cultural consumption of mass media (TV, radio, newspapers and magazines) and of the Internet. The results show a summative discrimination and a clear interaction or multiplicative effect between the study variables (gender, ethnicity and generation).

***Keywords**: Gender, ethnicity, age, media consumption, digital gaps, Internet, phone mobile.*

RESUMEN

En el siglo XXI, en la era móvil, cabe revisitar la tesis del aislamiento exclusivo de las zonas remotas, o "de acceso particularmente difícil" enunciada en el Informe MacBride en los ochenta. El objetivo de la presente investigación es ofrecer una radiografía de las desconexiones y desigualdades sufridas en un contexto tecnológicamente remoto, en la Amazonía sur ecuatoriana. Para llevar a cabo tal estudio usamos una metodología cuantitativa. Considerando las variables de género, etnia indígena (shuar y kichwa-saraguro) y no indígena, y edad, emprendimos un análisis de la penetración de la tecnología móvil (desde la brecha de acceso, desglosada en la propiedad de los dispositivos, el acceso mediante préstamo y la cobertura), del consumo cultural de los medios tradicionales (TV, radio, periódicos y revistas), hasta Internet. Los resultados apuntan no solo a una discriminación sumativa, sino a una clara interacción o efecto multiplicativo entre las variables de estudio (género, etnia y generación).

Palabras clave: Género, etnia, edad, consumo mediático, brechas digitales, Internet, móviles.

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INTRODUCTION: DISCONNECTIONS AND COMMUNICATIVE INEQUALITIES IN A SOUTH WITHIN THE SOUTH

> Henceforward, apart from a very few groups in areas to which access is particularly difficult, people cannot live in isolation. Every nation now forms part of the day-to-day reality of every other nation. Though it may not have a real awareness of its solidarity, the world continues to become increasingly interdependent. This interdependence, however, goes hand in hand with a host of imbalances and sometimes gives rise to grave inequalities. (MacBride, 1980, p. xiii)

Thirty-five years later, the futuristic thesis of the report of the MacBride Commission *One World, Many Voices*, presented to UNESCO in 1980, keeps its sense intact. Since it was formulated, at the beginning of the 1980s, there have been important milestones, such as the transition from the Gutenberg Galaxy to the Galaxy Internet (Castells, 2001). However, the thesis of the isolation of remote areas, or "of particularly difficult access", continues to gain interest. Thus, this maxim should be revisited in light of the current Internet Galaxy, and the contribution of MacBride to observe the inequalities predicted in 1980 should be analyzed according to the digital media ecosystem. In particular, we will focus on access to mobile electronic devices, the consumption of mass media and of the Internet in a remote context, in particular in the southern Ecuadorian Amazonia, a south within the South.

The 21st century is, for many, the Internet era, the time of mobile telephony, and the era of mediatization of the public sphere by the rapid expansion of the information and communication technologies (ICTs). The report prepared by the Commission for the study of communication problems (CIC), chaired by Sean MacBride, known as the MacBride report (1980), criticized already in the 1980s the technological fallacy as solution to social inequalities:

> In the search for answers to the problem of inequality, and especially the difficulties faced by developing countries, a primary or even exclusive emphasis is sometimes placed on technical assistance for the development of communication infrastructures, on material and finance assistance, and on transfer of technology. However, assistance of this kind, however necessary, cannot by itself lead to a new communication order that will intrinsically improve on the existing one. […] For the inequalities are not merely material: they relate also to broad questions of control, pressure and dependence (pp. 133-134)

It thus announced the critical pole of the communicative model of diffusion of innovations, spread in academic literature since the 1960s (Rogers, 1962). The mere access to technologies, in the line of the illustrious MacBride, does not guarantee the dissolution of inequalities, since these have structural roots well-anchored in socio-cultural and economic systems. However, access to communication, through different media, was one of the goals of the report, given its importance for social democratization, as shown in the following quote:

> It is possible to think of (a) the diffusion of power trough broader action to and participation in the communication process; (b) the benefits of communication used as an educational and socializing force; (c) the reduction of inequalities through democratization; (d) the abolition of the vestiges of domination as full national liberation becomes a reality (p.6)

Freedom of access, and the freedom of expression guaranteed by the latter, were required by the report to UNESCO as precepts of "human dignity" (MacBride, 1980, p. 18), not for utilitarian purposes. While the speech about access gaps had still not been set on the academic debate, the report had already put de facto limits, describing what we nowadays would call geographic gaps between rural and urban areas. Let us look at the data facilitated by this Commission in 1980:

> In many countries this growth is failing to keep pace with the increase in population, so that the provision for under-privileged groups and regions (people in remote rural areas, linguistic minorities, nomadic groups, and the poor in general) is on the decline. […] It is well known that more expensive media, like television receivers, are in many countries concentrated in towns. There are developing countries where TV transmitters cover only the main cities and the inmediate surroundings. Hundreds of thousands of villages have not a single telephone, the existing networks being for urban populations. In quite a few developing countries, more than nine-tenths of the daily press is regularly sold only in towns so circulation of the print media is confined to a small percentage of the population. (MacBride, 1980, p. 123)

Moving to the present, the fulfillment of the equalizing promise of digital media should be considered, and we will do it from one of those "zones of particularly difficult access" mentioned by the report, as marginalizated

from the global interconnected system. To do so, we will rely on the measurement of the digital gaps in access to mobile telephony and Internet, two of the nomadic devices which, a priori, would enable a greater chance of access to remote contexts, such as the southern jungle of Ecuador, where the indigenous Shuar and Kichwa-Saraguro reside, as well as populations of mestizos or tenants. We complete the study with data of the frequency of use or consumption of traditional media, i.e., TV, radio, press and magazines. Our aim is to present, through the results of an empirical study, an x-ray of inequalities, insofar as these are manifested in the inequity of access to media. Specifically, we will attend the resulting inequalities in access to property or use in loans of devices, as well as infrastructure –focused on the signal coverage–, media consumption and Internet access. We will use variables of gender, ethnicity and generation, transverse to the geographical location, tools that will enable us to establish a fixed picture about the situation of disconnection and unequal access to the communicative sphere in this south within the South, from where we stand.

THE CONTEXT: NOTES ON THE ECUADORIAN AMAZONIA INDIGENOUS COMMUNITIES

Ecuador is one of the nine countries (along with Brazil, Bolivia, Venezuela, Peru, Ecuador, Colombia, the French Guiana, Guyana and Suriname) that share the Amazon basin, territory that surrounds the Amazon River and represents the largest jungle planet. This country is divided into four regions; the most eastern of them is the Amazonia, habitat of dozens of indigenous ethnic groups. The Ecuadorian Amazonia is comprised by the provinces of Zamora-Chinchipe, Morona-Santiago, Pastaza, Napo, Sucumbíos and Orellana, where reside several indigenous communities in their ancestral communal lands. The indigenous ethnic groups that have their residence in the most southern province of the Ecuadorian Amazonia, Zamora-Chinchipe, are communities of Shuar nationality and several migrant of the Kichwa-Saraguro ethnicity. In any case, within the territory occupied by both ethnic communities, there are mestizos, which "have in their favor the complex to be dominant against the Saraguros and other groups" (Sarango, 1995, p. 359). At the linguistic level, Ecuador, along with the official Spanish language (language of mestizos), recognizes as "official languages of intercultural relationship" the Shuar and Kichwa.

THE SHUAR

The Shuar people belong to the family of the so-called Jivaro. The last state census, on 2010, counted 79.709 Shuar, of whom 5.474 resided in Zamora Chinchipe, one of the seven provinces in Shuar lives and where this research was developed.

The term Shuar is the self-designation employed by that people to identify themselves. The Shuar word, meaning 'person', resulted in the "Jivaro" hetero-designation from "xivar", characterized with some savagery by the ancestral practice of the *tsantsa* or reduction of the enemies' heads. Their worldview contemplates that the world of life (*nunka*) is a rehearsal for the real world or heaven (*nayaimp*), which is accessed through a vine and connects through the consumption of certain substances, taken in the company of a wise old man (*unwea*).

Shuar are, traditionally, semi-nomadic people who moved their palm shoots homes (*uwi-gea*) after about five years, when the resources of hunting, fishing and gathering of an Amazonian soil, of slow regeneration, began to scarce. Currently, the presence of extractive mining companies has reduced their ancestral lands of community ownership, pushing them to seek economic and livelihood alternatives in the surroundings of the semi-urban centers that supply food, combined with the small agriculture and other trades. Migration to the cities, with business or academic purposes, have helped to change the organization and dynamics of this ancestral nationality, that vividly retains its distinctly political and organizational features, as well as the defense of their cultural and linguistic identity. The Shuar preserved their language, oral-based, the *shuar chicham*, and use it as a vehicle of communication, despite the growing influence of Spanish in the communities.

The Shuar socio-cultural system is organized around the extended family (formed with or without blood ties), and political organization is democratic and strongly associative (Barriga, 1986). Each Shuar community has an administrator, elected by vote every two years by its cohabitants in the community, who delegate to these representative tasks of guidance and public management. At the same time, the administrators are grouped into zonal associations, which depend on a federation that represents them, both nationally and internationally.

The Shuar communities are dispersed in the Amazonia and the access to them depends on how deep they are into the jungle. There are communities that only have access via air, with small planes, or by the

river, with *peque-peque* (small boats made of wood or metal) that are directed with small propulsion engines or a long cane. There are also communities with access via suspension bridges crossing the tributaries of the Amazon River, as well as communities with access by rural roads of recent construction. In particular, the pathways that connect the southern Amazonia region of Zamora Chinchipe were under construction during the time of data collection, and thus continue during the writing of this text.

THE KICHWA-SARAGURO

Runa Saraguro is the term used by the indigenous Kichwa, originally settled in Saraguro, city of the Ecuadorian sierra, to denominate themselves. In kichwa, *runa* means person. These people are known in Ecuador as "Saraguros", to distinguish them from other kichwas ethnic groups present in the country. According to the last census (2010), there are 30.183 kichwa-saraguros in Ecuador. Regardless of their origin, "the truth is that the current Kichwa-Saraguros are a product of miscegenation between the Mitmakuna that came with the Incas and the peoples inhabiting these areas and towns, currently known as Saraguro canton" (Paqui & Poma, 2013, p. 108). The majority of the Kichwa-Saraguro resides in the province of Loja, Saraguro Canton, but since the 19th century there is a significant population of this ethnic community in the province of Zamora Chinchipe, who has migrated to the cantons of Zamora and Yantzaza, Yacuambi, Nangaritza, Paquisha, El Pangui and Centinela del Cóndor (Paqui & Poma, 2013). Migrations to the East (Southern Amazonia) originated for expanding their livestock capacity, after long periods of drought in their original Ecuadorian province, Loja. National, and especially international migrations to Spain, have allowed a series of cultural appropriations by this community, of strong conservative imprint.

The runa Saraguro or Kichwa-Saraguro is "a collective subject living in community" (*llakta*) and which assigns –accordingly with the Andean worldview of which it nurtures itself– material and spiritual connotations to the Earth (Martín, 2007). The Kichwa-Saraguro community works in group (*mingas*), and cultivates the land, from which it is a small owner, as opposed to other rural Ecuadorian and Andean groups, resulting in greater stability (Smith & Belote, 2000).

The sociopolitical organization of the Kichwa-Saraguro is participatory and consensual. Every two years they are due to be presidents or vice presidents of the parish councils, board members, treasurers and secretaries and they rotate in these political tasks. Also, they preserve their cultural traditions, such as traditional dress with very few changes, and their language, *kichwa shimi* or *runa shimi*, which currently lives in bilingualism with Spanish for the exchange of their handicrafts, agricultural products and livestock in fairs and markets.

Unlike the Shuar, Kichwua-Saraguro settlements are easily accessible, since they are located in suburban areas, next to the semi-urban parishes, inhabited mostly by mestizos, interconnected with tertiary roads or unpaved roads, accessible with 4x4 cars. Another differential feature concerns the literacy programs in kichwa which, since the 1980s, with the support of the State Government, were deployed in the bilingual schools, as well as the creation of the Provincial Directorate of Bilingual Cultural Education.

The Saraguro worldview, transmitted by the *taitas* to new generations, is not dynamic nor dichotomous, but relational. There are three worlds to the Kichwa-Saraguro: upper world (*Hanan Pacha*), human world (*Kay Pacha*) and underground world (*Uku Pacha*) world. The *runa* is a bridge between the microcosm, governed by the *Allpamama* (or Mother Earth) that originates life (*Kawsay*), according to the models of the macrocosm, where the Pachamama (co-creative mother of the *Pachakamak*) rules. This system of thought highlights the principle *kichwua* which governs life: *Sumak Kawsay* or good living.

THE ECUADORIAN LEGAL FRAMEWORK FOR COMMUNICATIVE INEQUALITIES FROM THE STANDPOINT OF GENDER AND ETHNICITY

One of the achievements of the Ecuadorian indigenous movement has been reflected in the introduction of the *Sumak Kawsay* concept in the Ecuadorian Constitution of 2008. The *Magna Carta* made in Montecristi, makes a right of the extended principle of Good Living or *Sumak Kawsay*, heir of the indigenous worldview (Acosta, 2010) of Andean influence. This term is governed by inclusive principles, of a solidarity-based economy that respects the diversity of nature –established as subject of rights– at the same time that advocates equality of gender. In fact, freedom, equality and solidarity are the guiding elements of Good Living (Acosta, 2010). Principles of equity of gender and ethnicity, two of the variable

object of this study, are specifically established in article 11, point 2, which states that: "All persons are equal and shall enjoy the same rights, duties and opportunities. No one may be discriminated against for reasons of ethnicity, place of birth, age, gender, gender identity, cultural identity..." In particular, regarding education, Art. 27 emphasizes the necessarily "intercultural" character and the importance of "gender equity" in the public school system, which later, in Art. 347, is matched up with the term coeducation. Regarding public policies, the Ecuadorian State, according to articles 38, 57, 70 and 156, establishes mechanisms to combat gender and ethnic inequality. Article 46 establishes the protection of infants against discriminatory contents of gender or ethnic group in the media.

In order to analyze communication from the rights and duties perspective, in addition to the Constitution of 2008, the Organic Law of Communication (LOC) of 2013 –created on the recommendation of the articles of the Constitution– must be studied. The Ecuadorian LOC, following the norms of the American Convention on Human Rights, recognizes the rights to communication, freedom of expression, information and access on equal terms to radio spectrum and information and communication technologies. The provisions of law defend the principle of affirmative action (Art. 11), in order to "improve the conditions for access to and exercise of the rights to communication of human groups that are with good reason considered in a situation of real inequality, regarding the generality of citizens". Section II, concerning the rights of equality and multiculturalism, guarantees the rights of media creation (Art. 33), universal access to technologies (Art. 35) and to multinational and intercultural communication (Art. 36). Also (Art. 68) discriminatory content is censored and the common responsibilities of the media are established (Art. 71) to prevent, among other forms of discrimination, "misleading, discriminatory, sexist, or racist advertising, or that violates the rights of the people" (point 7) to guarantee the rights of communication and good living. On the other hand, point 8 promotes "intercultural dialogue and the notions of unity and equality in diversity and intercultural relations", in accordance with article 80, which establishes in its 4th point as one of the objectives of the social media, "fostering gender equality and multiculturalism".

The Ecuadorian legislative reality, concerning gender and ethnic equity, places us, as we have seen, in to a macro-discourse where inequalities that affect indigenous people and women are rejected. In the specific case of the communicative legal discourse, Ecuador, with its LOC (2013), establishes the desideratum of an egalitarian and intercultural communication, in terms of access and non-discriminatory content representation. However, a realistic assessment of gender and ethnic disparities requires making a leap from the legal to the realm of everyday reality.

METHODOLOGY

This article presents some partial results of the research "Mobile ontology and nomad techno-citizenship. Study cases of the Shuar and Saraguro communities", funded by the V Internal Call for Research Projects of the Universidad Técnica Particular de Loja (UTPL). The study was conducted between the months of March and July 2014, using quantitative and qualitative research techniques, i.e. following a methodological triangulation. On the one hand, we made participant observation, in-depth interviews and ad hoc dynamics in the framework of training workshops on techno-citizenship, understood as access to and exercise of citizenship through technological appropriation. On the other hand, we collected data through surveys with structured questionnaires[1], composed of the following sections: personal data, family data, access and use of telephony, socialization in the public sphere, media consumption, sociability in the virtual environment, access to the public sphere and techno-citizenship, among others. The selection of the sample for surveys was made with participating volunteers of the training workshops on techno-citizenship (communities of Shaime, Tsarunts, Guayzimi, Zurmi, Nuevo Paraíso, Wants, San Carlos de las Minas and Achunts), as well as residents of the communities we visited (in addition to those mentioned, Tiukcha, Zhacay, San Vicente de Caney, Yacuambi, Zamora, Zumbi, La Paz and Guadalupe) considering the variables of gender, age, ethnicity[2], occupation and geographic place of residence. The field work was conducted in the southernmost province of Ecuador, Zamora-Chinchipe, bordering Peru and composed of nine cantons, in seven of which this empirical study has been developed (Zamora, Yantzaza, Centinela del Cóndor, Paquisha, Yacuambi, El Pangui and Nangaritza). The uniqueness of the sample demanded a methodological approach, designed

for the occasion, which began with the signing of a collaboration agreement with the Provincial Federation of the Shuar Nationality of Zamora-Chinchipe (FEPNASH-ZCH). This allowed us to access the communities to conduct workshops and surveys. The workshops were thus institutionally advertised through online and offline community meetings, in an open call for all audiences.

We present here the partial results of the quantitative part, resulting from the analysis of the questionnaire data, structured through the SPSS 22 program. We worked with two samples. Table 1 refers to the sample of directly surveyed subjects, who added a total of 406 persons (135 Shuar, 119 Kichwa-Saraguro and 152 mestizos). These individuals provided information on the use/property of mobile phones of the persons that they live with. This information allowed us to build a larger sample, whose data are shown in table 3. This enlarged sample consists of 1515 subjects, broken down by ethnic groups as follows: 530 Shuar, 444 Kichwa-Saraguro and 541 mestizos.

The ethnic distribution by sex of the surveyed sample can be seen in table 1. We see, therefore, that it is a sample balanced by sex and ethnicity, since in the area where the study has been conducted there is a higher percentage of mestizos and less Kichwa-Saraguro.

The real sample of surveyed people or surveyed sample (see table 2) is located in the range of age between 10 and 80 years. In particular, the global average age is around 30 years. It is worth noting that, according to data from the National Institute of Statistics and Censuses (INEC 2010), Ecuador is a young country (28.4 years old average).

Table 3 shows the distribution of ethnic identities disaggregated by sex, relative to the enlarged sample composed by the subjects of the surveyed sample and people with which they coexist, considering only those older than 5 years.

Table 1. Distribution of ethnicity by sex (surveyed sample)

		Ethnic identity			
		Mestizos	Saraguros	Shuar	Total
Sex	Men	67	62	65	194 47,8%
	Women	85	57	70	212 52,2%
Total		152 37,4%	119 29,3%	135 33,3%	406

Source: Own elaboration

REAL COMMUNICATION DISCONNECTIONS IN THE SHUAR AND KICHWA-SARAGURO FROM THE STANDPOINT OF GENDER, ETHNICITY AND GENERATION

The distances or communication gaps are a reflection of a series of discriminations present in society, reinforcing or even creating new segregations between a marked, designated or stereotyped collective, and one that is not, that is stigma-free.

The interactions between multiple discriminations affecting women, and that have impact on their analog communication access (TV, radio, press, magazines) and digital (mobile phone and Internet), will be the object that will guide the quantitative analysis, in order to understand how the gaps and their consequential inequality act in access to the various media and their derived applications. To analyze the digital divides it is necessary to contemplate the number of intersections of the gender variable, given its transversal nature, since the intention is not to do an isolated approach to each of the variables and their corresponding gaps, but to perform an analysis of the interactions between the gaps, considering their transversality.

The existence of communication gaps or the distance of "a situation or behavior in relation to another within a same communicative indicator" (Calfio & Velasco, 2005, p. 4), revitalizes with the arrival of the digital era, although they emerged in academic discourse decades ago. The above-mentioned report of the MacBride Commission already denounced, in 1980, the lack of access to analogue media by certain groups. Similarly –as precedent to the claim for the rights of women to access the media–, we must mention the Conference of Beijing (1995) and, in particular, the wording of point J of the Statement of objectives, which includes for the first time in a formal way the need for women's to access media newsrooms, as well as the need to represent them without stereotypes (Martínez, 2014). Also, it should be noted how, in the same *IV World Conference on Women*, held in Beijing (United Nations, 1996), special attention is paid to indigenous women. Point 32 sets the interaction of gender and ethnic gaps and in point 58 –about the measures that must be imple-

Table 2. Statistics of the age distribution by ethnic groups (surveyed sample)

Ethnic identity	Average age	N	Q1 percentile 25	Q3 percentile 75	Minimum	Maximum
Mestizo	29,82	152	18,85	37,33	10	76
Saraguro	32,05	119	20,07	42,08	15	64
Shuar	28,74	135	16,68	38,63	12	80
Total	30,12	406	18,37	39,44	10	80

Source: Own elaboration.

Table 3. Distribution of ethnicity by sex (expanded sample)

		Ethnic identity			
		Mestizos	Saraguros	Shuar	Total
Sex	Men	291	242	274	807 53,3%
	Women	250	202	256	708 46,7%
Total		541 35,7%	444 29,3%	530 35,0%	1515

Source: Own elaboration.

mented to counteract discrimination– the "q" paragraph is dedicated to indigenous women. In addition, actions and recommendations are included in other points of the mentioned articles, as 60a (non-governmental organizations), 61c (governments), 83n (education), 83o (culture), 89, 106y and 109b (health), 116 (vulnerability to violence), 167c and 175f (economy), 225 and 232o (rights), 253a, 253c, 256a, 256c and 256f (environment). The document of the *IX Regional Conference on Women in Latin America and the Caribbean* conducted in 2004 by the Economic Commission for Latin America and the Caribbean (ECLAC), *Caminos hacia la equidad de género en América Latina y el Caribe*, (Pathways towards gender equality in Latin America and the Caribbean) (ECLAC, 2004), reported that young, elderly, and indigenous women were the most afflicted members by a series of discrimination starting from poverty. The document recalls the relationship between poverty, number of descendants and education, being indigenous women the ones with higher percentages of birth and, in consequence, with the highest rates of poverty.

The digital divide, defined by Benítez (2011) as "a complex series of symbolic elements, power relations and regulations which allow or exclude certain groups from full participation in connectivity networks that give way to the network society" (p. 44), generates old and new forms of inequality resulting from current disconnections. Old ways reproduce the existing discriminations (Norris, 2001), also shaping nuances and new modalities. When analyzing the digital divide from its multidimensional character, as presented by Pippa Norris (2001), we must look at the multiple conditions that generate inequities regarding ICTs, and which we can identify with a number of dimensions[3] that intersect each other, thus serving as a breeding ground to these old and new differences and social disconnection.

Many factors and variables intersected in the digital divide are present in previous gaps of media access in the analogue context. To address the nature of the intersectionality of communicative inequalities we will focus on the most transversal variable, gender, and the relationships with other variables, such as age and ethnicity.

The digital gender gap is the one regarding inequalities of access and use of or abilities in digital technologies by women. This shows the correlative allocation of gender in public and private spheres, excluding women of the technological field, of strong patriarchal imprint. Cecilia Castaño (2005) establishes a taxonomy of digital divides: the first version, or access, and the second version, or uses. Here we will take care of the first, i.e., the one regarding primarily infrastructure (equipment, signal, etc.) against the second, which cares about digital literacy or media literacy.

The digital divide of ethnicity is a phenomenon that implies both unequal access and uses, in the first and second level established by Castaño, among indigenous

users or from minority groups, against the privileged ethnic group, one that is not marked. "Belonging to an ethnic group is another factor of the digital divide in Latin America and the Caribbean", since, as Hernández and Calcagno (2003) indicate based on an ECLAC analysis of the same year, "the probability of having a computer at home is five times greater in the non-indigenous population than in the indigenous population" (p. 16).

The generation gap is the one that, following the proposal of Marc Prensky (2001), states a difference of access and uses between digital natives (the generation that was born in the digital culture) and digital migrants (which, on the contrary, have adopted technological culture at a relatively advanced age).

To analyze the digital gaps we will attend the intersection of the mentioned categories (ethnicity, gender, age). I.e., considering the mentioned gender transversality, we will approximate to this variable interaction with the others (ethnicity and age).

THE MOBILE TELEPHONY ACCESS GAP: WIRELESS DISCONNECTIONS

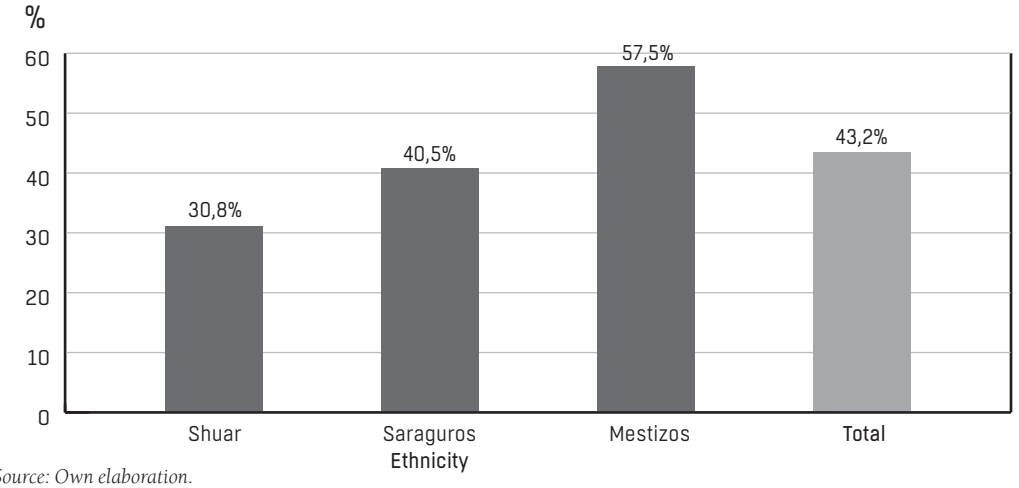
After the brief theoretical introduction to communicative gaps in the perspective of gender, ethnicity and generation, we started our analysis of disconnections from an approximation to mobile phones, the most updated media device. Considering that mobile phones are, nowadays, the most advanced communication devices, and have experienced an unprecedented expansion in the international media system (Kalba, 2008), we wanted to examine its rates of access and ownership. To do this, we focused on three aspects of the access gap, from ethnicity and gender: (1) ownership of devices, (2) access to the device through loan, and (3) infrastructure, i.e. cover or signal that allow to make a communicative use of the device.

Access gaps regarding property of devices

Starting the analysis of devices access gap, we have to analyze the influence of the variables under study (ethnicity and gender) in the ownership of mobile phones on the expanded sample (N 1515 subjects).

In relation to the first variable, Figure 1 shows statistically significant differences between ethnic groups (Kruskal-Wallis test: 79.69, gl=2, p=0.000). Mestizos are the ones with more mobile phones and Shuar the ones with less. I.e., non-indigenous have a mobile phone in greater proportion than indigenous, which reveals the existence of the ethnic gap in property. As for differences regarding the gender variable, we observed (table 4) that men (47.1%) own mobile phones in a more significant percentage than women (38.7%). There is a difference of 8.4 percentage points of having mobile phones between men and women (difference of proportions: Z=3.311, p=0.002). These discrepancies reveal a gender gap in ownership of mobile phones in the context of the study.

Chart 1. Percentages of mobile phone owners by ethnic groups.



Source: Own elaboration.

If we examine the joint influence of gender and ethnicity (independent variables) in owning or not a mobile phone (dependent variable), from a logit model, we need to design it as a saturated model (with interaction between ethnicity and gender) so the model fits the data, i.e., differential behavior between ethnic groups are produced both in men and women, but in a different way. While in women the difference among the three ethnic groups is more accused, in men there is only differences between indigenous (Shuar and Kichwa-Saraguros) and non-indigenous (mestizos), but not between indigenous (figure 2).

The results reflect the existence of the multiplication of the discrimination that afflicts the subjects of the sample, marked by their ethnic group and gender. In other words, an indigenous woman suffers greater discrimination than a subject that only has one of the marks (gender or ethnic group, i.e, only women or only indigenous), as the effects of the access gap multiply by the transversal nature of gender.

Access gaps in the loan of devices

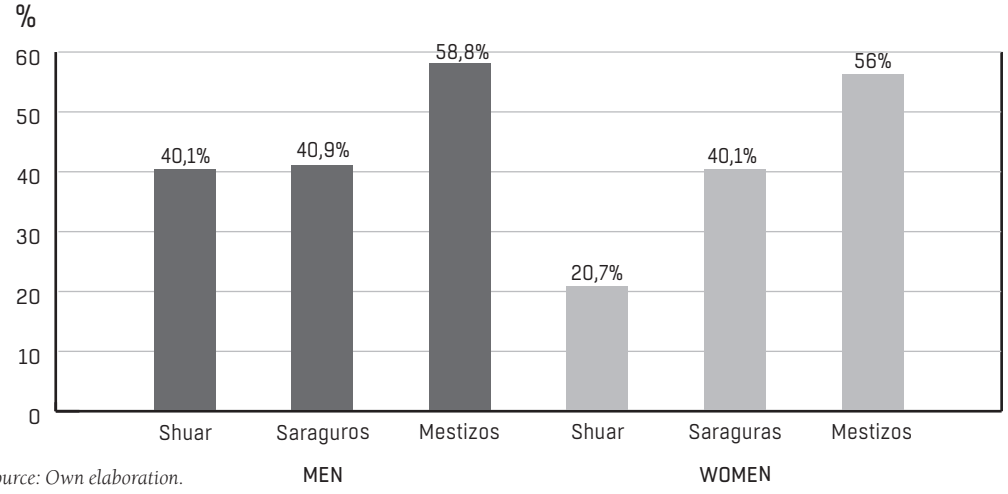
After approaching the gap of access from the devices ownership factor, we studied other inequalities in access that take place in similar contexts. As several literature collects, in certain geographical areas it is common that members of large families (Kalba, 2008) of rural societies (Bidwell et al., 2011; Kalba, 2008), with remote access and marked socio-economic conditions (among other factors) resort to the loan of devices to be able to circumvent, in part, the gap of digital mobile access. The reality of the nomadic indigenous communities (De Salvador & Martínez, 2015), in line with the theory of increasing mobility and nomadism of contemporary societies (Axup, Viller & Bidwell, 2005), also appears in our context of study, with 62.8% of members of the enlarged sample using mobile phones. Of these, 31.3% makes it through the loan of the device. Collaboration and the community feeling (De Salvador & Martínez, 2015) arises from the extremely poor material conditions of the studied indigenous communities, as well as of a number of factors that respond to their socio-political tradition (for example, the possession of communal lands, the concept of distribution of wealth,

Table 4. Distribution of mobile phones ownership by sex (expanded sample)

		Owns a mobile phone		
		NO	YES	Total
Sex	Men	427	380	807
		52,9%	47,1%	100,0%
	Women	434	274	708
		61,3%	38,7%	100,0%
Total		861	654	1515
		56,8%	43,2%	100,0%

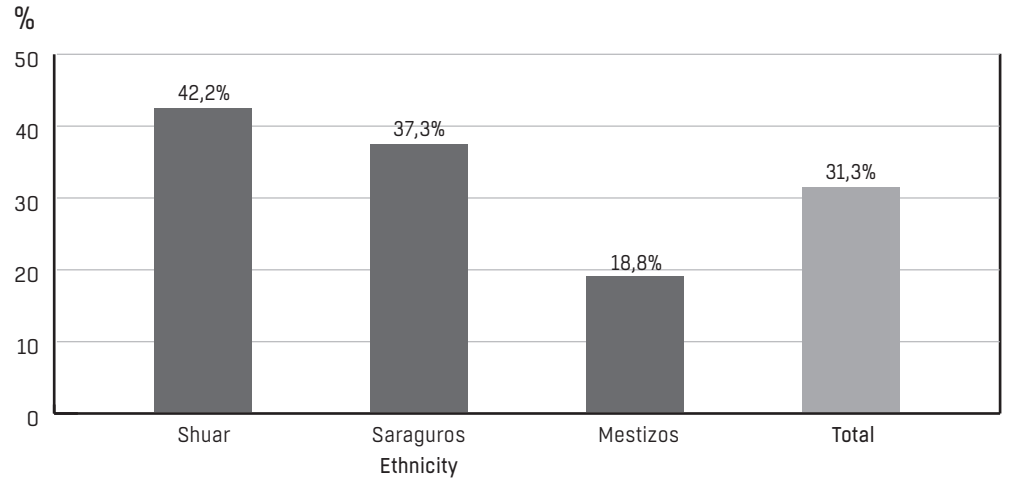
Source: Own elaboration.

Chart 2. Percentage of mobile phone owners according to ethnic groups by sex



Source: Own elaboration.

Chart 3. Percentage of loan use by ethnic groups



Source: Own elaboration

Table 5. Loan use by sex

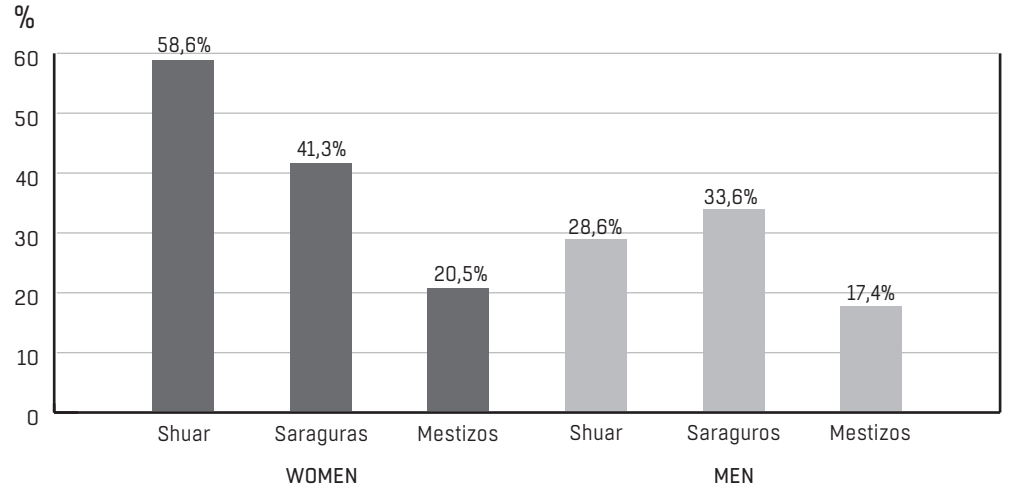
Sex	Loan use	Use	% of loan use
Men	130	510	25,5%
Women	168	442	38,0%
Total	298	952	31,3%

Source: Own elaboration

etc.) Strategies to palliate this situation of inequality are cooperation, as well as tactics that ensure communication (De Salvador & Martínez, 2015).

Following the same scheme than in the previous section, we will begin by analyzing the gap of ethnicity on mobile phones loans. As we can see in figure 3, indigenous people (Shuar and Kichwa-Saraguros) have a similar loan use. Specifically, nearly 40% of those using mobile phones access to them trough loans (difference of proportions: Z=1.20; p=0.195). However, there are differences in the loan between indigenous

Chart 4. Percentage of loan use by ethnic groups according to sex



Source: Own elaboration.

and non-indigenous (mestizos) people; the latter use loans significantly less: only 18.8% (difference of proportions: Z=5.31; p=0. 000).

Considering loan use by sex (table 5), we see that women are the ones that make further, meaningful employment, of loans: 38.0% of women who use mobile phones recurs to someone else's device, whereas only 25.5% of men who use a mobile phone borrows it (difference of proportions: Z=4.16; p=0.000). This inequality could point to different causes, related to the detention of women in the private sphere, the differences in salary, and structures of poverty that collide with the socioeconomic status of the mobile phone.

As we have done in the analysis of the mobile phone ownership, it is relevant to examine the joint influence of gender and ethnicity (independent variables) in loan use (dependent variable) from a logit model. To do this, we need to design it as a saturated model (with interaction between ethnicity and gender). Thus, the model fits the data. The findings of this interaction suggest that there are differential behaviors between ethnic groups both in men and women, but in a different way. Namely, while in women the differences occur clearly between the three groups, in men the differences are between indigenous (Shuar and Saraguros) and non-indigenous (mestizos), as shown in figure 4. Such results suggest, therefore, the existence of the multiplicative effect of the gender and ethnicity gaps.

Infrastructure access gaps

Because of its geo-location, Zamora Chinchipe is the southernmost province of Ecuador, and due to its Amazonian or jungle composition, it has particular characteristics of connectivity regarding its state context. (While) in Ecuador mobile phone penetration rate is high, exceeding 100% –an example of the technological vanguard– disconnected regions are not an exception. This quote of Chilean researchers Hernández and Calcagno (2003) that explain the lack of infrastructure in indigenous populations applies to our study context (indigenous communities of Zamora Chinchipe):

> The high costs of incorporation of the technological infrastructure in the areas of indigenous population are associated with the geographical isolation of rural communities, lack of basic infrastructure services and/or its shortcomings. (p 15)

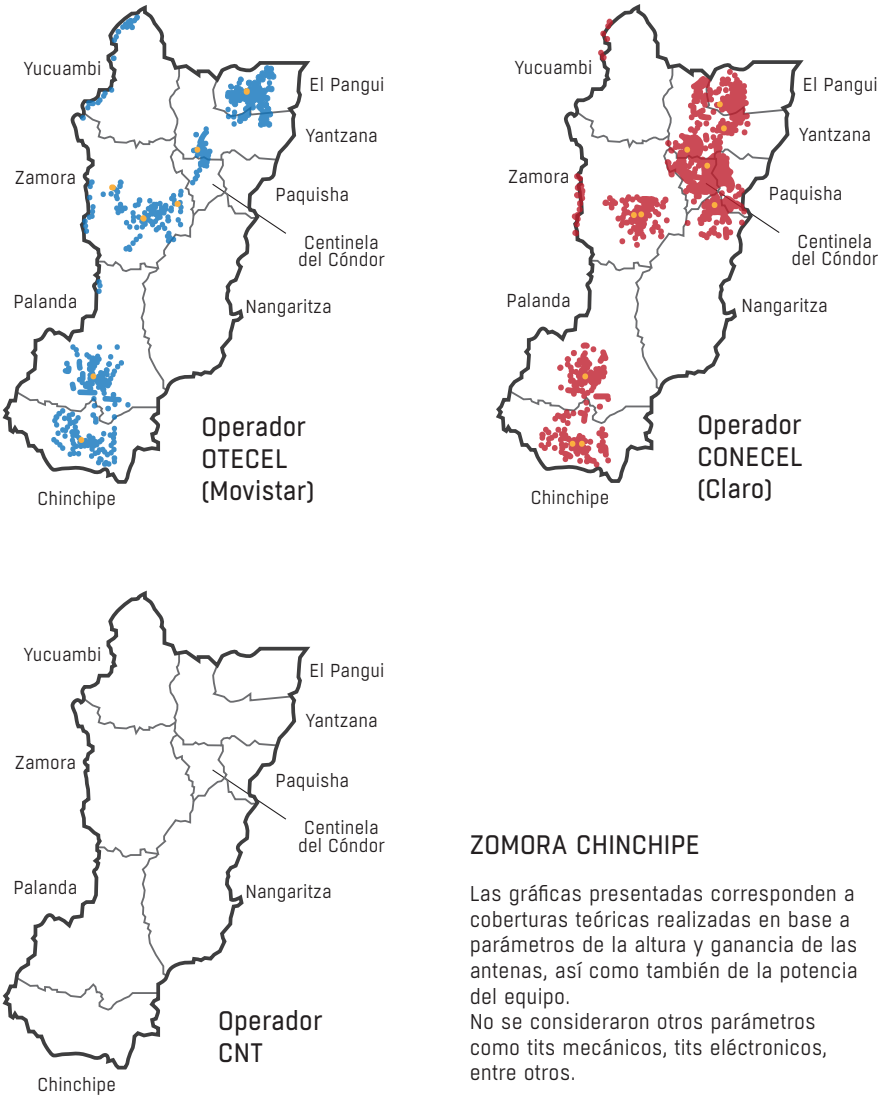
The State of Ecuador, through the public operator, National Corporation for Telecommunications (CNT), is investing in the implementation of connectivity for mobile and fixed telephony in the province, although the state of infrastructure is still incipient. In 2013, two antennas of mobile phones were placed in two of the cantons of Zamora-Chinchipe (Yantzatza and Zamora), disconnected until then. Also, they promoted the construction of several infocenters, that is, public facilities equipped with digital technologies at the service of citizens, for Internet consultation, printing, viewing movies, media literacy training, etc. However, and despite the State investment, the Zamora-Chinchipe province preserves several areas of total absence of coverage (the canton of Río Nangaritza virtually in its entirety) and various areas of other cities in the province, as well as many points of "discontinuous connection" or "intermittent coverage" (De Salvador & Martínez, 2015). Nor the private company with greater penetration in the Amazonia, Claro, nor CNT, provides data on the actual connectivity of this province broken down by ethnic group or sex. This and the fact that the latest available official data are of 2010 (INEC, 2010: Census), led us to include in the structured questionnaire a question about the perception of coverage of users in their homes, in order to alleviate this statistical diagnosis deficit.

The results of this item, in the surveyed sample (N=406 subjects), reflected in figure 5, indicate that those with greater mobile coverage at home are non-indigenous (mestizos); indigenous (Shuar and Kichwa-Saraguros) do not show significant differences among them in the global assessment of mobile coverage at home. The answer "sometimes" includes outcomes that support the existence of intermittent coverage. This difference may reflect the commercial policies of telephone companies of expanding into the residence areas of mestizos –with better electrical infrastructure, roads, etc. – to the detriment of indigenous populations, where there is a smaller presence of the ground and wireless infrastructure.

ACCESS LIMITATIONS AND CULTURAL CONSUMPTION: MEDIA DISCONNECTIONS

Let us now consider media consumption, determined in large part by the above mentioned access to devices or coverage signals. In the questionnaire we raised the following closed-answer question: "How long do you consult the following media?": 0 (never or

Figure 1. SMA 2013 coverage maps. Operators from left to right: Movistar, Claro and CNT.

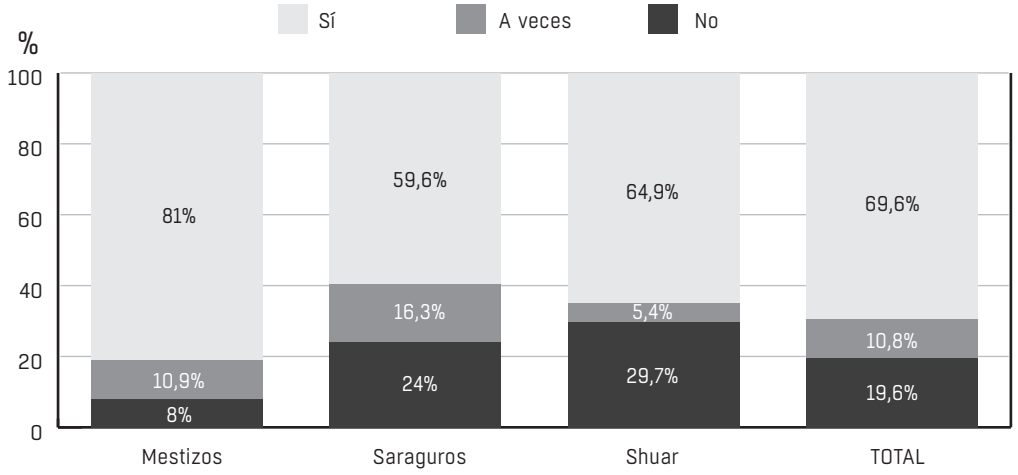


Source: Ministry of Telecommunications and Information Society, Ecuador.

almost never), 1 (once a month), 2 (every 2 weeks), 3 (once a week), 4 (2 days a week), 5 (daily). The results show that TV is the communication media to which most time is dedicated, followed by radio and Internet and, to a lesser extent, consumption of magazines and newspapers, without significant time differences between these last two. TV, magazines and newspapers are the media with minor consumption discrepancies. The radio and, above all, the Internet are the media where there is greater variability in use. If we analyze the results depending on the ethnic group, we observe that there are significant differences in the frequencies of access or time of use according to ethnic groups –except in magazines, showing no significant differences for a confidence level of 95% (table 6). Mestizos show a consumption level of TV, newspapers and the Internet significantly higher than non-indigenous.

As we can see in table 6, the three ethnic groups sort

Chart 5. Percentages in the assessment of mobile coverage according to ethnic groups



Source: Own elaboration.

Table 6. Statistics of the time of use of the media by ethnic groups (surveyed sample)

TIME	Ethnicity	N	Media	Average range	Kruskal Wallis test
TV	Mestizo	152	4,05	222,76	Chi2=8,290
	Saraguro	119	3,55	188,49	Gl=2
	Shuar	135	3,69	195,05	P=0,016
RADIO	Mestizo	152	3,21	199,65	Chi2=9,865
	Saraguro	119	3,60	228,75	Gl=2
	Shuar	135	2,85	185,57	P=0,007
MAGAZINES	Mestizo	152	1,35	218,86	Chi2=4,829
	Saraguro	119	1,09	196,31	Gl=2
	Shuar	135	1,04	192,54	P=0,089
NEWSPAPERS	Mestizo	152	1,55	229,81	Chi2=13,71
	Saraguro	119	1,06	186,68	Gl=2
	Shuar	135	1,01	188,70	P=0,001
INTERNET	Mestizo	152	3,00	241,06	Chi2=39,10
	Saraguro	119	2,31	206,29	Gl=2
	Shuar	135	1,39	158,76	P=0,000

Source: Own elaboration.

in the same way the media consultation time. During the conduct of the surveys the subjects of the sample indicated that residual access to print media –which they only see when they go to cities or when and old exemplary arrives to their community– is the reason for the lack of this type of cultural consumption. This fact could be explained by several reasons, including factors of literacy, language, distribution (geographical access), cultural (orality instead of writing), and economics.

Table 7. Statistics of the time of use of the media by sex

TIME	Sex	N	Average range	Media	Mann-Whitney U-test
TV	Men	194	207,77	3,82	Z=-0,777
	Women	212	199,59	3,75	P=0,437
RADIO	Men	194	217,40	3,48	Z=-2,414
	Women	212	190,78	2,95	P=0,016
MAGAZINES	Men	194	200,23	1,10	Z=-0,573
	Women	212	206,49	1,24	P=0,566
NEWSPAPERS	Men	194	216,45	1,39	Z=-2,252
	Women	212	191,65	1,08	P=0,024
INTERNET	Men	194	222,43	2,64	Z=-3,274
	Women	212	186,18	1,92	P=0,001

Source: Own elaboration.

Table 8. Statistics of the distribution of the time of use of the Internet by ethnic groups (surveyed sample)

Ethnicity	N	Median	Media	Average range	H Kruskal Wallis test
Mestizos	152	4	3,00	241,06	Chi-2=39,097 gl=2 p= 0,000
Saraguros	119	2	2,31	206,29	
Shuar	135	0	1,39	158,76	
Total	406	2	3,26		

Source: Own elaboration.

Breaking down the results by sex, we see that for magazines and TV there are no inequalities in the times of use/frequency of access. However, there are significant differences in time of use of radio, newspapers and Internet, in which men indicate a greater use than women, as shown in table 7. Less leisure time for women, as well as earlier school dropout rate and highest levels of illiteracy, could be possible causes of this lower media consumption.

DIGITAL DIVIDES: NETWORK DISCONNECTIONS

Focusing on access to the Internet, it is interesting to analyze the influence of ethnicity, gender and age to not only see if there is a plurality of discrimination, but also whether the differences imply a double or even triple interactive exclusion. We will begin the analysis focusing in each of the variables, and then we will analyze them combined.

Starting with the ethnic gap, and after the data analysis reflected in table 8, we note that mestizos indicate a greater Internet use than indigenous (Kichwa- Saraguros and Shuar). Within the marked collective, the indigenous, Shuar are the subjects that use the Internet the less. The valuation difference in times of consumption is significant for an NC of 95%. Therefore, we can conclude that Internet usage time has a significant relationship with the ethnic group, demonstrating again, the gap relating to ethnicity.

Continuing with the gender gap, table 9 shows that Internet usage time has a significant relationship with the gender variable. Men indicate a higher frequency of access to the Internet than women, with a difference in the significant valuation of time of use for an NC of 95%. Therefore, data show the existence of a gender gap for access to the digital sphere.

Table 9. Statistics of the distribution of the time of use of the Internet by sex (surveyed sample)

Sex	N	Median	Media	Average range	U Mann-Whitney test
Men	194	4	3,64	222,43	Z= -3,274
Women	212	1	2,92	186,18	p= 0,001
Total	406	2	3,26		

Source: Own elaboration.

Table 10. Statistics of the distribution of the time of use of the Internet by age (surveyed sample)

Age	N	Median	Media	Average range	H Kruskal Wallis test
≤ 21 years	143	4	2,98	239,88	Chi-2=47,455
22-35	133	3	2,48	216,96	gl=2
>35 years	120	0	1,25	149,72	p= 0,000
Total	406	2	3,26		

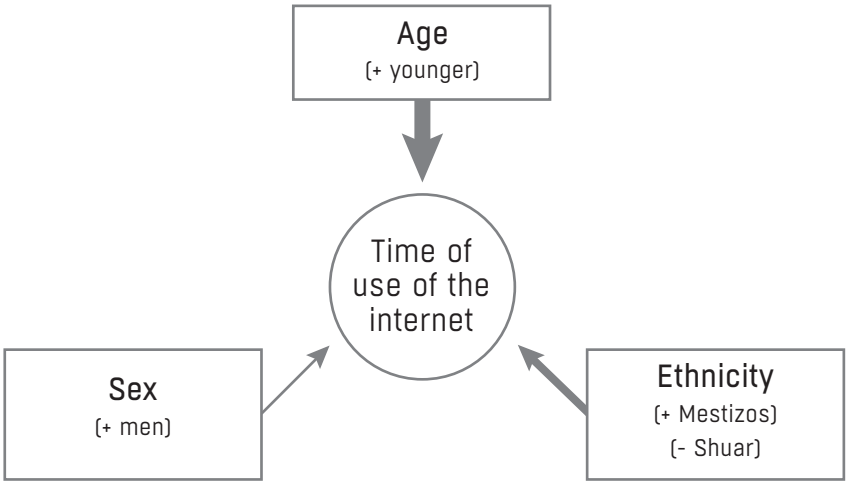
Source: Own elaboration.

Table 11. Regression coefficients.

	CStandardized coefficients			
	Beta	gl	F	Sig.
Age	-0,427	1	112,663	0,000
Sex	0,178	1	15,721	0,000
Ethnicity	0,337	2	66,351	0,000
Dependent variable: Internet time.				

Source: Own elaboration.

Figure 2. Incidence of age, ethnicity and gender in the time of use of the Internet



Source: Own elaboration.

We end this approach with the age gap. To do so, we used the celebrated and criticized taxonomy of Marc Prensky (2001), establishing the division between natives and digital immigrants as fundamental data in access and uses of digital electronic devices. In our context of study, we see the incidence of the age variable, since young women, as well as the elderly and indigenous, are those identified by the ECLAC report (2004) as most vulnerable. Analyzed data confirms that the consumption of Internet also has a significant relationship with age (Spearman's correlation coefficient = 0.357; p=0.000). This means that younger people spend more time on the Internet. If we recode the age into three categories of similar size (≤21 years, between 22 and 35 years and >35 years), use time decay significantly from lowest to higher age (table 10).

If we make a joint analysis of the incidence of sex-gender, ethnicity, and age in the time of use of Internet, from a regression model for variables with different types of level of measurement, as in our case (optimal scaling procedure: CATREG), we obtain a multiple R of 0.561 with a significant regression effect (ANOVA: F=46.061; p=0.000), and whose coefficients (table 11) indicate a greater importance of age, followed by the ethnic group and the gender (figure 6 shows the different impact with the thickness of the arrows) in the time of use of the Internet. Therefore, the existence of a triple discrimination is extracted from the data obtained from the intersection of the three analysis variables.

CONCLUSIONS: THE TRIPLE DIGITAL DIVIDE

As with other gaps, "the digital divide is not only a problem of technological rejection, but an expression of the profound inequalities existing in the society" (Jiménez, 2010, p. 94). Far from an objective neutrality of technologies, these seem to reinforce the existing gaps, which add-up in the context of remote access presented here. The map puts us in specific economic conditions, what is called "info-poverty", the poverty of access. The studied geo-location, the southern Ecuadorian Amazonia, is shared by the three analyzed groups. However, the breadth and diversity of the Amazonia implies the existence of a series of distinctive features between each of the communities. Their geographical location puts on the table again the results already announced in the eighties: the MacBride report insisted on territorial gaps that technologically distanced some people from others. Thirty-five years later, and in a different media ecosystem, with a more advanced technological situation, already in the digital mobile age, the analysis of our 'particularly difficult access area" –in terms of the report to UNESCO (MacBride, 1980) – shows a reality of disconnections and inequalities that recalls the report prepared by the Commission for the study of communication problems. Skipping the contextual differences, the logic of the MacBride report applies to the context of the southern Ecuadorian Amazonia.

The analysis drawn in this article shows a situation of inequality between indigenous and non-indigenous; a gender gap within the members of the indigenous groups that belong to the marked gender, women, and a gradation within the indigenous groups, which puts Shuar women in last place, staggered after Kichwa-Saraguro women, both, respectively, behind Shuar men and Kichwa-Saraguro men. Despite the recent efforts of fairness in the legal framework, the reality is distant from the speech, collected both in the Ecuadorian Constitution and in the LOC.

The initial hypothesis of the digital divides of gender, ethnicity and generation is confirmed after our analysis. It concludes, first, that those gaps are produced in each of the indicators that we analyzed (wireless disconnections –property and loan–, infrastructure, media disconnections and network disconnections), and second, that there are interactions between the gaps, i.e. there is a transversality among them with multiplicative effect. The analysis further emphasizes the importance, strength and sense of each of these gaps (gender, ethnicity and generation).

As indicated, there is a multiplicative effect of gaps in the case of access to mobile devices (mobile phones), being Shuar women the less represented among owners. This situation points to Shuar women as major users of loan as a way of access to mobile telephony. In terms of infrastructure, regarding the signal or coverage of the mobile phone, again rural villages where there is majority of Shuar are the most discriminated against. The greater disconnection of this community, even major in the case of women, has several causes: (i) cultural (among indigenous groups, Kichwa-Saraguro enjoy a status of greater social recognition than the rest of the indigenous communities; (ii) Shuar are one of the communities more marked by the stigma, as they are hetero-designated);

(iii) economic (communal ownership of the land against private property); (iv) educational (Kichwa have bilingual education programs from the eighties and a schooling rate much higher than the one of Shuar); (v) access (Shuar communities live more inside the jungle and are worst connected than Kichwa-Saraguro and mestizos, again the difference already indicated in the MacBride report between urban and rural, here identified as jungle and semi-urban), etc. These differences involve an augmentation of disconnections.

The low rate of cultural consumption by indigenous against non-indigenous strengthens the previous hypothesis, especially for Internet. The behavior of the use of the Internet is prototypical of the results shown in this study, and shows how, once again, Shuar women are located on the last step of disconnections and communicative and social inequalities. The confluence of the ethnic group, gender and age has a concrete face: women, older and Shuar. A triply-marked woman.

FOOTNOTES

1. Both on the workshops and the questionnaire the language used was Spanish. However, in exceptional cases, and given that the Shuar and Kichwa culture are oral, we used the support of native interpreters.

2. On the ethnic variable we chose the self-designation of the subject, i.e. how they identified themselves.

3. According to political scientist Pippa Norris (2001), there are three subtypes of deficiencies reflected in the digital divide: from global division (among countries), social division (between info-rich and info-poor), and democratic division (between participants and non-participants).

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