Comunicación y Sociedad
Departamento de Estudios de la Comunicación Social
Universidad de Guadalajara

Information and Communication Technologies as mediators of public policies for the reduction of poverty in two Colombian-Venezuelan border municipalities

Las Tecnologías de Información y Comunicación como mediadoras de políticas públicas para la reducción de la pobreza en dos municipios fronterizos colombo-venezolanos

DOI: https://doi.org/10.32870/cys.v2019i0.6374

María-Antonia Cuberos
https://orcid.org/0000-0002-5235-552X
Marisela Vivas-García
https://orcid.org/0000-0002-8941-4562
Rina Mazuera-Arias[1]
https://orcid.org/0000-0002-9888-5833

The article shows an analysis of the role of the Information and Communication Technologies (ICT) as mediators of public policies aimed at reducing poverty in the Bolívar and Villa del Rosario municipalities of the Colombian-Venezuelan border. When following the quantitative methodology, its communicational influence when providing information was discovered, bridging the digital gap and encouraging empowerment.
Keywords: Mediation, ICT, Poverty, Public policies, Colombia, Venezuela.

El artículo muestra el análisis del papel de las Tecnologías de la Información y Comunicación (TIC) como mediadoras de políticas públicas dirigidas a la reducción de la pobreza en los municipios Bolívar y Villa del Rosario de la frontera colombo venezolana; al seguir la metodología cuantitativa se halló su influencia comunicacional al proveer información, acortando la brecha digital e incitando el empoderamiento.
Palabras clave: Mediación, TIC, pobreza, políticas públicas, Colombia, Venezuela.

How to cite:
Cuberos, M. A., Vivas García, M. & Mazuera-Arias, R. (2019). Information and Communication Technologies as mediators of public policies for the reduction of poverty in two Colombian-Venezuelan border municipalities. *Comunicación y Sociedad*, e6374. DOI: https://doi.org/10.32870/cys.v2019i0.6374

[1] Universidad Simón Bolívar, Colombia.
E-mails: m.cuberos@unisimonBolívar.edu.co, m.vivas@unisimonBolívar.edu.co and r.mazuera@unisimonBolívar.edu.co
Submitted: 12/06/16. Accepted: 05/20/17. Published: 03/04/2019.

Introduction

The condition of poverty is established in dimensions that range from "basic subsistence needs to moral evaluations in a context of social justice" (Caballero, 2007, p. 152); thus, it is related to the lack of basic skills that prevent the individual from entering society through the exercise of their will (Sen, 1992) and the inability to obtain well-being due to lack of resources. In this way, information and communication emerge as transversal axes so that the individual can increase/empower the skills that allow them to improve living conditions, conducive to human development (United Nations Development Program [UNDP], 2001).

Information and communication technologies (ICT)[2] have generated a striking connectivity in all dimensions of society, facilitating the creation and socialization of information and knowledge before the new forms of interaction between the different actors-governmental, non-governmental organizations and social movements, becoming tools for economic development and promotion of democracy; for citizenship when implemented in combination with public policies in the provision of public services with efficiency and transparency; in the education sector to achieve quality and also to strengthen the capacities of local governments and increase regional cooperation through networks or other technological mechanisms (Palacios, Flores-Roux & García Zaballos, 2013).

In this way, accessing and using information and communication as a transversal axis, is a basic condition for development, and to that purpose a tool to prevent the poverty. In the field of the society ICTs have represented transformational instruments that promote social change and they lead people to make real improvements in their lives by presenting options and opportunities (Crovi, 2010). All that is an implicit obligation in the eight United Nations Millennium Development Goals

[2] Defined as "technological systems through which information is received, manipulated and processed, and facilitates communication between two or more interlocutors" (Economic Commission for Latin America and the Caribbean [ECLAC], 2003, p. 12).

Report 2015; a document that had set out the reduction of extreme poverty by fifty percent (United Nations Organization [UN], 2016).

In the search for global and sustainable human development and to reduce poverty in all its dimensions, governments design public policies represented by actions that respond to the diverse demands of society. They use strategic resources that allow alleviating the problems of the population context (Roth, 2016), ICT in government entities can be part of these resources by relating them to the set of public policies, since there are reasons explained by the UNDP (2001) that can be considered to contribute to the elimination of poverty in the 21st century, among them: its presence in almost all human activities, strengthen democracy, eliminate obstacles to human development when confronting limitations opposed to knowledge, to participation and economic opportunities. Thus, civil society, governments and international organizations see elements that can be used to strengthen development processes in technological tools.

In view of the above, an investigation was carried out that raised as a general objective to analyse the role of ICT as mediators of public policies aimed at reducing poverty in the municipalities of Bolívar and Villa del Rosario of the Colombian-Venezuelan border, towards reflection and debate for their incorporation as allies in sustainable development of its inhabitants.

The municipalities mentioned as research context are geographically adjacent and border, with high rate of extreme poverty index. The Municipality Villa del Rosario is characterized as a population in extreme poverty, regarding Unsatisfied Basic Needs (UBN), 5.22% of its population lives in inadequate housing and 11.28% live in conditions of critical overcrowding, likewise, 3.56% of households do not have access to the minimum conditions of health. In rural areas, the deficiencies are greater in all components analysed; the proportion of people who have needs unsatisfied basic services equals 22.85% of the population of the municipality approximately (Ministry of Labor, 2013).

In the Bolívar Municipality, according to the UBN measurement, 2 of its 4 civil parishes have a high level of extreme poverty: 7.27% and 8.91%; and the other two, 3.05% and 3.12% (considered low levels of extreme poverty); extreme poverty corresponds to households that do

not achieve to bring together in a relatively stable manner the resources needed to meet the basic needs of its components and, therefore, not having the means, they are not able to achieve well-being (Bolívarian Government of Táchira State, 2014).

Theoretical and methodological framework

Theoretical basis

The research was based on the general theory of systems (Bertalanffy, 2006), the systemic approach (Senge, 2006) and critical theory (Habermas, 1982), to consider an organic whole between the mayoralties and the society where relations are established influenced by forces that they include interests associated with the resolution of social problems, having as components in these relationships the ICT that are organized in coordination to achieve a set of objectives.

The investigation analysed the external interactions that take place from public policies destined to reduce the poverty in the mayoralties of the municipalities contexts of study, in order to establish the mediating action of the ICT in those relational processes, and that therefore have an internal source of interrelations among those responsible for creating and implementing public policies to reduce poverty in the local public entity of both municipalities.

In the search for knowledge, orienting interests were related to the natural ones of life that go beyond satisfaction of immediately empirical needs, looking for some solution to systematic problems in general. There was a technical interest rooted in anthropology, linking science and technology, since both transcend and are inseparable from the human species and its conservation (Quintanilla, 2016). Knowledge was apprehended from an objective and concrete reality, linking it teleological with the demands of the Knowledge Society for the emancipation of the social problem of poverty since the informationalism established as an effect of the use of ICT (Rodríguez & Sánchez-Riofrío, 2017).

The interpretation of the data collected, seeking to find the mediating role of ICT in public policies for the reduction of poverty, required a critique on its use to overcome the existing reality in terms of poverty conditions.

In the philosophical and epistemological basis, which takes place in a globalized context, research is based on trans-modernity by assuming ideas of modernity and postmodernism in the face of the emerging culture of interconnectivity. In this way, there was an abstraction of notions of both paradigms that they flowed interdependently (Rodríguez, 2004).

In addition, a set of approaches by various authors was used to configure the theoretical scaffolding of the research, considering mediation, ICT, poverty and public policies to reduce poverty.

Conceptual foundation

Mediation

The mediation was assumed as the new ways that the subjects have of interpellation on common purposes, representing links for social cohesion; in this sense, mediation is a process that structures communication through a set of elements, procedures and practices, guiding the individuals located in the societies of today in the appropriation of the contents communicated by diverse means and types of mediatic and technological referents (Badillo Mendoza, 2011; Castellano Ascencio, 2016).

Now the society is organized and interacts through networks, the chat and the incursion in sites of the network; technologies have become products and processes that intervene in a favourable way to know, feel, like, in scenarios where the borders between producers and consumers of knowledge dissolve; thus, there is a specific and technological media and digital dependence in daily life. Currently in the discourse, the media makes possible the gestures, the corporeal and not only orality, incorporating into the habitual social interaction what materializes in it. Therefore, the research considered ICTs as elements of mediation, with which communication procedures and practices arise directed to the appropriation of information concerning public policies for the reduction of poverty.

Information and Communication Technologies

Currently the prevailing technological paradigm is the interaction between users and the development of social networks or social

technologies with applications to express themselves, create/publish and disseminate, others to publish/disseminate and search for information. Thus tending towards the democratization of the tools of access to information and the attention to problems of all kinds, specifically of a social nature, in the areas of education, health, government management and protection of the environment (Castellano Ascencio, 2016).

For the information to flow, the technologies use unidirectional, bi or multidirectional synchronous channels that involve simultaneous connection to the interveners; asynchronous channels in which those involved do not necessarily have to be connected, being able to be limited or open multidirectional (Crystal, cited in López, 2017). In this technological paradigm, according to the Federal Communications Commission (FCC, 2016), high-speed access is required in the so-called broadband,[3] which can be achieved through various service platforms: digital subscriber line (Digital Subscriber Line, DSL), cable modem, fibre optic, wireless (Wi-Fi) and satellite.

Poverty

Sen (1992) said that poverty is linked to the deprivation of capacities in an individual to perform activities that they value in order to achieve a state that satisfies his well-being, taking into account the circumstances and social requirements of the environment where they live. Poverty involves not possessing capacities and opportunities to achieve subsistence levels and satisfy minimum needs that allow to enjoy a dignified life (Caballero, 2007; Campana, 2014); therefore, it is related to the possibility of reaching both goods and services for human and cultural development, in such a way that there is inclusion instead of discrimination, guaranteeing the dignity of human beings as the most transcendent of society. In addition, poverty is the result of concrete social relationships that are unequal, asymmetrical and violent, from the perspective of assistance among the poor and society (Paugam, cited in Campana, 2014), thus, each author proposes a relationship with

[3] It involves digital transmission of texts, images and sound in bits of information through transmission technologies that make transportation possible faster than traditional telephone or mobile connections.

the expression of standard of living, which, according to the United Nations Organization [UN] (1961) is represented by the real conditions in which a life lives and therefore integrated by elements such as health, nutrition, housing, employment conditions and education, which in turn become its indicators.

It is in this sense that individuals and groups from the social and economic sphere they require guidance so that they advance in their capacities in search of a creative life, through the development of its potentialities with respect to the indicators formulated by the human capital, emphasizing the bonds of trust, cooperation and solidarity between members of society and political institutions (the State) (Borja, cited in Gutiérrez & Rodríguez, 2010). In this way, individual and collective benefits are achieved that lead to the establishment of favourable conditions of development for the State and nation.

Consequently, in order to overcome poverty, the State must promote networks between communities that in turn are networked, so that those that correspond to groups of poor people are integrated and initiate a transformative process conducive to their well-being (Gutiérrez & Rodríguez, 2010). Such a possibility involves the presence of ways of creating innovative policies, so that the political-social entities consider the individual as an ally in strengthening ties of cooperation, solidarity and co-responsibility in addressing the poverty phenomenon; since the capacities of the poor to organize themselves and the mechanisms used for this are very interdependent of the State profile or regime, the type of public policies and the behaviour of those who govern (Moore & Putzel, 2000). In this way communication becomes an ally of great value, since the generation of information and knowledge increases the capacities that in some way are going to satisfy levels of well-being.

Public policies to reduce poverty

The appropriation of technologies by individuals and organizations in the globalized environment requires a relationship between the State-society-poverty in order to generate advantages to compete and grow in the global economic sphere, seeking to reduce the digital divide that reflects an imbalance of access to knowledge between different countries or social groups and organizations (Ministry of Communications of

Colombia, cited in Polanco, 2011). Then, new communicative models supported by ICT have to be considered, in affinity with conditions that institute relationships mediated by these technologies (Rodríguez & Sánchez-Riofrío, 2017).

In this way, governmental actions emerge, understood as public policies that increase the opportunities for people to progress and shorten the digital divide, improving education, integrating training to reduce technological illiteracy,[4] so that appropriation processes take place in cultural events leading to the evolution of the person in everyday life, as expressed by Crovi (2010). Actions such as the provision of programs for entrepreneurship and employment, health assistance, information provision, citizen empowerment –including in this the development of political capacities in the poor, since power in itself is a dimension to appease poverty (Murolo, 2010)– they must be, according to Zambrano (2009), continuous and directed through programs from the government to a sector of society or to a geographic space and in whose mediation ICTs must intervene.

Consequently, it is understood that public policy is oriented towards a specific social sector, impacting actions in certain minimum units, but in turn in the conglomerate of society; that is, in the public. Thus, policies aimed at penetration and connectivity, and appropriation of ICT in the daily use of citizens arise (Zambrano, 2009); in both, public information plays an important role in the relations between State and civil society, as well as in politics, since it is from this that existing organizations in civil society can gain knowledge about public management (López & García Bustamante, 2016), being there implicit the result of the actions that the State takes against of poverty.

Therefore, it could be argued that the existence of public policies to counteract or reduce poverty involves an interaction between institutions and the poor, who, because they do not possess basic skills, are prevented from entering society voluntarily, it is in such an area where ICT mediate, since from the intervention of technological

---

4 It refers to the differences in access that exist between citizens because they are not trained to manage the devices or due to lack of technological infrastructure.

devices, the poor obtain information and create knowledge about the policies, covering a certain portion of the basic communication need.

Methodological foundation

The research was carried out under a quantitative approach with a field-transactional, correlational design and at an analytical depth level (Hernández, Fernández & Baptista, 2006). The data collection technique was the survey using a structured questionnaire, applied to the people involved in the associated government entities with the implementation of public policies aimed at reducing poverty in the municipalities in the context of the research; a census sample was considered. For the statistical processing of the data the Statistical Package for the Social Sciences (SPSS) was used. The analysis and processing of the results was supported in deductive and objective inference. For the validity of the research, interpretative rigor was sought, quality in the design, from internal consistency, its adjustment in design, fidelity and analytical adequacy (Hernández, Fernández & Baptista, 2006).

In the study carried out, the following questions were answered: What are the ICTs present for the provision of information of community interest in the municipalities of the Bolívar and Villa del Rosario municipalities? How do the municipal governments of the Bolívar and Villa del Rosario municipalities use ICT in the implementation of public policies aimed at the reduction of poverty in the population of both municipalities? What is the relationship that ICTs have as mediators of public policies for the reduction of poverty in the population, in the Bolívar and Villa del Rosario municipalities of the Colombian-Venezuelan border?

RESULTS

Information and communication technologies present for the provision of information of community interest

When inquiring about the access platforms, considering the FCC's (2016) proposals, the results presented in Table 1 were obtained.

In both municipalities, the use of Wi-Fi is evident in the urban area, in the Bolívar Municipality there is greater access in the squares and a

little less in the public institutions, in the Villa del Rosario Municipality the opposite happens: it is more present in the institutions than in the public squares. Regarding the use of data and Internet, voice telephony and community radio, in the urban area in the Bolívar Municipality it is lower than in Villa del Rosario. In rural areas, the Internet is present at an important level in the Municipality of Bolívar and in a lower one in Villa del Rosario; rural Wi-Fi is used in both municipalities in a very similar way; in addition, the use of data and Internet from community networks in Bolívar is significantly higher compared to Villa del Rosario where it does not reach 50%; .community radio is located in both municipalities very evenly, and voice telephony in Bolívar has a much lower presence in relation to Villa del Rosario.

It is by virtue of these access platforms that a set of ICTs is used in each town hall to provide information of community interest. In Table 2, the ICT present for the supply of information of community interest are listed in the municipal governments of the Bolívar and Villa del Rosario municipalities. As can be seen in the Bolívar Municipality, technological resources are employed with one-dimensional, bidirectional, multidirectional asynchronous communication channels limited as open, implying there is no need to be connected live with the entity to effect some interpellation, with which the limits of separation between producers and consumers of information are diluted; although there is evidence of the presence of technologies related to synchronous channels that do involve direct connection with the participants in the communication. The use of conventional media such as radio and television is unidirectional and only mediate information in the entity-society sense. Likewise, the importance that its website has for the entity is denoted, since it is the medium that is most used to inform.

In the Villa del Rosario Municipality, technologies are used in the communication channels already mentioned; however, Facebook, followed by its web site (Mayoralty of Villa del Rosario, n. d.) are the most used to inform about aspects of community interest. Conventional radio and television together with digital television have less use and a trend towards the use of newer technologies can be seen. The scarce use given to both urban and rural telecentres stands out in both municipalities.

TABLE 1
EXISTING ACCESS PLATFORMS IN THE MUNICIPALITIES BOLÍVAR (VENEZUELA) AND VILLA DEL ROSARIO (COLOMBIA)

Municipality	Access technological platform according to Local Government's Office	Percentage	Municipality	Access technological platform according to Local Government's Office	Percentage
Bolívar	Urban Wi-Fi (in public places and institutions).	80% in public places and 50% in public institutions	Villa del Rosario	Urban Wi-Fi (in public places and institutions)	90% in public institutions and 65% in public places
	Urban community networks with data and Internet use, voice telephony and community radio.	60% with data and Internet use, 45% with voice telephony and 55% with community radio		Urban community networks with data and Internet use, voice telephony and community radio.	65% with voice telephony, 70% with radio and 65% with data and Internet use.
	Internet in rural areas	90 %		Internet in rural areas	75%
	Rural Wi-Fi	70%		Rural Wi-Fi	65%
	Rural community networks with data and Internet use, community radio and voice telephony.	75% with data and Internet use, 55% with community radio and 30% with voice telephony		Rural community networks with data and Internet use, community radio and voice telephony.	55% with use of community radio, 50% with voice telephony and 45% with use of data and Internet

Source: The authors.

Employment in the municipalities Bolívar and Villa del Rosario of technologies of information and communication in the implementation of public policies aimed at reducing poverty in the population

Table 3 shows the actions carried out by the municipal governments of the Bolívar and Villa del Rosario municipalities, with the intervention of ICTs, linked to public policies for the reduction of poverty.

The conventional and digital radio and television are the most used ICT to provide information on public policies to reduce poverty in both municipalities. Although its use is less in the Municipality of Bolívar, in the Municipality of Villa del Rosario is almost double. On the other hand, conventional radio and mobile phones are the ICT most used in the Bolívar Municipality to inform about social programs days; in the mayoralties of Villa del Rosario is the e-mail where this information flows most, as well as conventional radio.

Informing about support programs for citizens in situations of poverty, as shown in Table 4, there is more use of the ICT in the town hall of Villa del Rosario, the e-mail, conventional radio, instant messaging and conventional television are the most used. In the mayor's office of Bolívar, the use of ICT is precarious, being digital and traditional radio along with traditional television those that are applied.

To inform about citizen security programs, it is again in the City Hall of Villa del Rosario where there is the more use of ICT, although in the conventional way with television and radio. These same technologies are used in the Bolívar municipality, but in a lesser proportion.

As evidenced in Table 5, the mobile phone technology is used in both municipalities to raise complaints, claims, opinions, suggestions, alternative solutions to problems about aspects of community life, community and personal problems, although, with more employment on the Colombian side.

Conventional and digital television along with digital radio, are the ICT most used in mayoralty of Bolívar to hold calls to citizen participation meetings; the e-mail and digital television in Villa del Rosario, calling the attention that in both is used video/audio conference considerably. In addition, little is used in the Bolívar City Hall ICT to post notices

TABLE 2
INFORMATION AND COMMUNICATION TECHNOLOGIES PRESENT FOR THE SUPPLY OF INFORMATION OF COMMUNITY INTEREST IN THE BOLÍVAR AND VILLA DEL ROSARIO MUNICIPALITIES

Mayor	ICT	Communication channels	Mayor	ICT	Communication channels
Bolívar	14.Facebook	Limited multidirectional asynchronous	Villa del Rosario	16.Facebook	Limited multidirectional Asynchronous
	13.Conventional radio	Unidirectional synchronous		15. Web site	Unidirectional asynchronous
	12.Conventional TV			14.E-mail	Bidirectional Asynchronous
	11.Digital TV			13.Phone /Mobile telephone	Bi or multidirectional synchronous
	10.Phone/Mobile telephone	Bi or multidirectional synchronous		12. Instant messaging (SMS)	
	9. E-mail.	Bidirectional asynchronous		11.WhatsApp	Bi or multidirectional synchronous
	8.WhatsApp	Bi or multidirectional synchronous		10.Forums	Limited multidirectional asynchronous
	7.Twitter	Opened multidirectional asynchronous		9.Blogs 8.Video/ audio conference	

Mayor	ICT	Communication channels	Mayor	ICT	Communication channels
	6.Instant messaging (SMS)	Bi or multidirectional synchronous		7.YouTube	Opened multidirectional asynchronous
	5.Video/ audioconference			6.Conventional radio	Unidirectional synchronous
	4. Chat			5.Conventional TV	
	3. YouTube	Opened multidirectional asynchronous		4.Chat	Bi or multidirectional synchronous
	2. Telecentres in urban areas			3.Digital TV	Unidirectional synchronous
	1.Telecentres in rural areas			2. Telecentres in urban areas	
				1.Telecentres in rural areas	

Note: In the table the use given to the ICT in the mayoralties of the study context is shown in descending order.
Source: The authors.

TABLE 3

ACTIONS WITH THE INTERVENTION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE MUNICIPALITIES OF BOLÍVAR (VENEZUELA) AND VILLA DEL ROSARIO (COLOMBIA) LINKED TO PUBLIC POLICIES TO REDUCE THE POVERTY

Actions	Mayoralty of the Municipality of Bolívar		Mayoralty of the Municipality of Villa del Rosario	
	Medium	Percentages	Medium	Percentages
Provision of information on public policies to reduce the poverty	Conventional Radio	35	Conventional Radio	50
	Conventional TV	30	Conventional TV	70
	Digital radio digital	30	Digital radio	15
	Digital TV	30	Digital TV	25
Inform about social programs days	Conventional Radio	90	Conventional Radio	75
	Digital radio	75	Digital radio	30
	Conventional TV	75	Conventional TV	70
	Chat	40	Chat	40
	Mobile telephone	90	Mobile telephone	65
	Email	65	Email	80
	Instant messaging (SMS)	65	Instant messaging (SMS)	70
	Video/audio-conference	50	Video/audio-conference	50
	Digital TV	85	Conventional Radio	25
	Chat	5	Chat	35
	Mobile telephone	30	Mobile telephone	55

Note: The actions are directed to the provision of information on public policies and programs social days.

Source: The authors.

of jobs or job vacancies, as shown in Table 5, the mobile telephone, conventional television and digital radio moderately. Instead, in the town hall of Villa del Rosario the use of ICT is greater, using e-mail, telephone mobile, conventional radio and instant messaging.

It is evident in Table 6 that the mobile telephone and email are the technologies used to communicate about education to the community leader in both municipal governments.

The community leader is given information about recreation, road/mobility, health, public lighting system and environment by telephone mobile, e-mail and video/audio conference in both city halls.

However, the same technologies are used in a smaller proportion to inform about nutrition, communication and access to technology and supply, but in the nutrition aspect manifests little use of technology in the Bolívar municipality. It is revealed the use of a single technological resource to inform about Security: video/audio conference.

Also the video/audio conference is the means used in the two municipalities for the reception of complaints and claims on aspects of community life, as shown in Table 7. For the reception of community or personal problems, email is the most used medium in both municipal governments; chat is another mechanism, and the video/audio conference has more use in the Mayoralty of Bolívar.

Facebook is the technological tool and sector of greater use in both mayoralties, for the circulation of official information, reports, notices, calls, offers, surveys, respond to requests, official communications, explanations, reception of complaints, claims, talk about problems, suggestions and solutions. Facebook are followed by the web sites of Bolívar and Villa del Rosario Municipalities, and other technological tools such as Twitter and WhatsApp, and in a lesser proportion, YouTube. However, blogs and forums are also used into Villa del Rosario Municipality.

When observing the contents of Tables 3, 4, 5, 6 and 7 it can be affirmed that in both mayoralties new modes of interpellation of the subjects are being produced for common purposes, representing links for social cohesion, reducing limits between producers and consumers of knowledge, with greater incidence in Villa del Rosario municipality when using more current technologies. In the municipality of Bolívar there is still rooted in the use of static or low interactivity technologies.

TABLE 4

ACTIONS WITH INTERVENTION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE MUNICIPALITIES BOLÍVAR (VENEZUELA) AND VILLA DEL ROSARIO (COLOMBIA) LINKED TO CITIZEN SUPPORT AND SECURITY PROGRAMS

Actions	Mayoralty of the Municipality of Bolívar		Mayoralty of the Municipality of Bolívar	
	Medium	Percentages	Medium	Percentages
Report support programs to citizens in poverty	Conventional TV	20	Conventional TV	65
	Conventional radio	20	Conventional radio	75
	Chat	15		
	Digital radio	20	Digital radio	30
	Digital TV	15	Digital TV	20
	Instant messaging (SMS)	10	Instant messaging (SMS)	65
	E-mail	5	Email	90
	Video/audio-conference	5	Video/audio-conference	35
Report citizen security programs	Conventional radio	35	Conventional radio	70
	Conventional TV	35	Conventional TV	65
	Digital radio	35	Digital radio	20
	Digital TV	40	Digital TV	15
	Video/audio-conference	35	Video/audio-conference	40
	Chat	15	Chat	35

Source: The authors.

TABLE 5
ACTIONS WITH INTERVENTION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE MUNICIPALITIES BOLÍVAR (VENEZUELA) AND VILLA DEL ROSARIO (COLOMBIA) LINKED TO INFORMATION OF COMMUNITY AND CITIZEN LIFE

Actions	Mayoralty of the Municipality of Bolívar		Mayoralty of the Municipality of Bolívar	
	Medium	Percentages	Medium	Percentages
Posing complaints / claims, opinions / suggestions, alternative solutions to problems about aspects of community life, community and personal problems	Mobile telephone	55	Mobile telephone	90
Convene meetings with citizen participation	Conventional radio	35	Conventional radio	50
	Chat	35	Chat	40
	Email	60	Email	80
	Conventional TV	70	Conventional TV	70
	Digital radio	70	Digital radio	30
	Digital TV	70	Digital TV	20
	Video/audio conference	55	Video/audio conference	50
Post notices of jobs/job vacancies	Conventional radio	15	Conventional radio	55
	Conventional TV	25	Conventional TV	80
	Digital radio	25	Digital radio	25
	Digital TV	20	Digital TV	20

	Video/audio conference	15	Video/audio conference	35
	Instant messaging (SMS)	5	Instant messaging (SMS)	50
	Chat	5	Chat	35
	Mobile telephone	30	Mobile telephone	55

Source: The authors.

TABLE 6

ACTIONS WITH INTERVENTION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE MUNICIPALITIES BOLÍVAR (VENEZUELA) AND VILLA DEL ROSARIO (COLOMBIA) RELATED TO COMMUNICATION WITH COMMUNITY LEADERS

Actions	Mayoralty of the Municipality of Bolívar		Mayoralty of the Municipality of Villa del Rosario	
	Medium	Percentages	Medium	Percentages
Education	Mobile telephone	90	Mobile telephone	75
	Video/audio-conference	80	Video/audio-conference	50
	Instant messaging (SMS)	70	Instant messaging (SMS)	70
	E-mail	90	E-mail	90
Recreation	Mobile telephone	85	Mobile telephone	75
	Video/audio-conference	65	Video/audio-conference	50
	E-mail	55	E-mail	85
Roads/mobility	E-mail	80	E-mail	75
	Video/audio-conference	65	Video/audio-conference	30
Health	E-mail	70	E-mail	90
	Video/audio-conference	25	Video/audio-conference	55
	Mobile telephone	50	Mobile telephone	75
Public lighting system	E-mail	85	E-mail	70
	Video/audio-conference	75	Video/audio-conference	25
Environment	E-mail	55	E-mail	80

	Mobile telephone	55	Mobile telephone	70
	Video/audio-conference	50	Video/audio-conference	50
Nutrition	E-mail	5	E-mail	85
	Video/audio-conference	0	Video/audio-conference	40
Communication and access to technology	E-mail	25	E-mail	80
	Video/audio-conference	25	Video/audio-conference	40
	Mobile telephone	25	Mobile telephone	60
Supply	E-mail	15	E-mail	75
	Video/audio-conference	20	Video/audio-conference	25
Security	Video/audio-conference	30	Video/audio-conference	55

Source: The authors.

In this way it is visualized that the Mayoralty of Villa del Rosario has already undertaken a path that seeks to strengthen networks of trust between the members of society to facilitate contacts and relations with the public entity, thus following a new communication model, such as Murolo formulates it (2010), supported in cooperation and solidarity seeking individual and collective benefits that favour the establishment of favourable conditions of development to the municipality and the welfare of the groups of poor as expressed by Gutiérrez and Rodríguez (2010). The Mayor's office of Bolívar, although it has initiated the route that transits that of Villa del Rosario, has not yet debased old ways of managing information of community interest.

The relationship that information and communication technologies have as mediators of public policies for the reduction of poverty

In the study carried out, there is evidence of a set of actions that are found in the first column of Table 8; each one has goals associated with the reduction of poverty, since by providing information the knowledge cycle begins in the people who receive it, which gives an impulse to shorten the digital divide between the countries, in addition, it is strengthened the empowerment of the citizens, because when seeking inclusion and information, political capacities are increased in the less favoured groups; this is how the proposals of Rodríguez & Sánchez-Riofrío (2017) and Murolo (2010) are ratified.

Table 8 shows that in the municipalities of Bolívar and Villa del Rosario, Colombian-Venezuelan border municipalities, ICTs mediate public policies to reduce poverty in terms of bridging the digital divide, empowering and facilitating information, aspects that point authors considered in the theoretical foundation as actions components of those policies.

Final reflexion

In the Bolívar and Villa del Rosario municipalities, considering the new technological paradigm, it is being offered WiFi in the urban area in public places, which can be seen as an access opportunity for the

TABLE 7

ACTIONS WITH INTERVENTION OF INFORMATION AND COMMUNICATION TECHNOLOGIES LINKED TO COMMUNICATION OF INFORMATION ON PUBLIC POLICIES ADDRESSED TO THE REDUCTION OF POVERTY

Actions	Mayoralty of the Municipality of Bolívar		Mayoralty of the Municipality of Villa del Rosario	
	Medium	Percentages	Medium	Percentages
Receive complaints / claims about aspects of community life.	Video/audio conference	50	Video/audio conference	35
Receive approaches of community or personal problems.	Email	55	Email	90
	Chat	30	Chat	30
	Video/audio conference	40	Video/audio conference	25
Reveal official information, reports, notices, calls, offers; raise surveys; response requests, communications; process clarifications, receive complaints, claims, problems, suggestions, solution options	Facebook	100	Facebook	90
	Official Web site	85	Official Web site	90
	Twitter	80	WhatsApp	65
			Forums	65
			Blogs	65
	YouTube	40	YouTube	50

Source: The authors.

poor in the sense that it increases the capacity for the establishment of contacts with public and social entities that to a certain extent are welfare facilitators. In the same way, community networks support the use of data and the Internet, presenting a very similar situation in both contexts; the same happens with community radio where the difference in percentage in both municipalities is only 10%, not so with respect to voice telephony, which is a big difference because in Villa del Rosario its presence is significant in comparison with the Bolívar Municipality.

In the rural area there are discrepancies regarding the use of data and the Internet promoted by community networks, since in the municipality of Bolívar implementation is high, in opposition to Villa del Rosario; in relation to voice telephony, the urban situation is maintained, since its use is much lower in the Bolívar municipality than in the municipality of Villa del Rosario, although a decrease in the rural area is noted. As far as rural community radio is concerned, there is a certain similarity in both municipalities. In any case, it is evident in terms of voice telephony from community networks, seen as an important factor to reduce poverty, that there is a greater rootedness in Villa del Rosario; however, the balance of the urban area in relation to the use of data and Internet is broken in the rural area in the two municipalities, which implies a point of attention because according to the data held by the Ministry of Labor (2013), deficiencies in the rural area are greater in the municipality of Villa del Rosario in all the components of poverty.

In this way, it is derived that the existing access platform is the product of penetration and connectivity policies aimed at citizens so that they become accustomed to their appropriation and thus achieve knowledge that facilitates their well-being. However, new transmission technologies and the introduction of advanced services have to be projected in the radio spectrum so that mobile telephony, which has a wide use in both municipalities, responds to the growth of data traffic and extends the coverage of the broadband in order to strengthen the use of web 2.0 technology and thus dilute barriers between producers and consumers of information, being able to expand its application to other actions that are integrated into public policies to combat poverty in a model innovative communicative.

TABLE 8
THE RELATIONSHIP THAT INFORMATION AND COMMUNICATION TECHNOLOGIES HAVE AS MEDIATORS OF PUBLIC POLICIES FOR THE REDUCTION OF POVERTY IN THE BOLÍVAR (VENEZUELA) AND VILLA DEL ROSARIO (COLOMBIA) MUNICIPALITIES

Action (Through ICT)	Local government policy for the reduction of poverty		
	Information provision	Empowerment	Close the digital gap
Provision of information on public policies to reduce poverty			
Information about social working day programs.			
Report support programs to citizens in poverty			
Report citizen security programs			
Communicate community leaders aspects of community interest			
Convene meetings with citizen participation.			
Post notices of jobs / job vacancies.			
Disclose official information, reports, notices, calls, offers; raise surveys; answer requests, communications; process clarifications, receive complaints, claims, problems, suggestions, solution options.			
Posing complaints / claims, opinions / suggestions, alternative solutions to problems about aspects of community life, community and personal problems.			
Receive complaints / claims about aspects of community life			
Receiving expositions about communitarian or personal problems.			

Source: The authors.

From this perspective, it is expected that the penetration of information and communication technologies will contribute significantly to the fight against poverty and social exclusion, favouring, on the one hand, production and commercial exchange by providing monetary resources, access to employment on equal terms, the redistribution of products obtained in both municipalities, and access to political (participation) and social rights (health, education, culture, housing). On the other hand, in the correspondence of public policies to favour existing relationships and social networks and, above all, avoiding communicational isolation, in such a way that the content that flows in the existing interaction between the institutions and the poor is appropriated that they are inserted in the society, with the obtaining of knowledge-generating information about the existing policies and thus one of their basic needs such as communication is covered.

Considering the multidimensional concept of integration that provide the technologies and diagnosis of exclusion that underlies the theme of poverty, as a multidimensional problem of a transdisciplinary nature that goes beyond economic deprivation and social exclusion, refers to measures to guarantee inclusion and participation in the processes productive and intervention of citizens in decision-making, leading to the economic, social, educational and cultural integration of the municipalities under study. It is thus urgent the proposal of an innovative communicative model that seeks the welfare of the poor settled in both municipalities by strengthening ties of cooperation and solidarity, considering the capacities of the poor to organize and include themselves as digital citizens and, among others elements, aspects and practices that in a very superficial way have been made visible in this investigation.

Bibliogaphic references

Badillo Mendoza, M. E. (2011). Estrategia de comunicación y educación mediada por TIC para el fomento del desarrollo sostenible en cinco colegios de Palmira. Entramado, *7*(1), 128-145. Retrieved on June 1st, 2017 from http://www.unilibrecali.edu.co/images2/revista-entramado/pdf/pdf_articulos/volumen7/Entramado_19003803_Enero_Junio_2011_128-145.pdf

Bertalanffy, L. V. (2006). *Teoría general de los sistemas. Fundamentos, desarrollo, aplicaciones*. Ciudad de México: Fondo de Cultura Económica.

Bolívarian Government of Táchira State. (2014). Necesidades básicas insatisfechas (NBI) Estado Táchira. Retrieved on August 19th, 2016 from http://es.slideshare.net/Gobiernotachira/anlisis-territorial-pobreza-extrema-estado-tchira

Caballero, J. F. (2007). La política integral como respuesta a la multidimensionalidad de la pobreza. *Espacios Públicos*, *10*(19), 150-168. Retrieved on October 18 th, 2016 from http://www.redalyc.org/articulo.oa?id=67601909

Campana, M. (2014). Desarrollo humano, producción social de la pobreza y gobierno de la pobreza. *Revista Trabajo Social*, *16*, 79-89. Retrieved on June 1st. 2017 from https://revistas.unal.edu.co/index.php/tsocial/article/view/47059

Castellano Ascencio, M. D. (2016). Aspectos pedagógicos del diseño de contenidos digitales interactivos, consideraciones sobre el proceso de mediación. *Revista Virtual Universidad Católica del Norte*, *49*, 51-71. Retrieved on May 30th, 2017 from http://revistavirtual.ucn.edu.co/index.php/RevistaUCN/article/view/797/1317

Crovi, D. M. (2010). Jóvenes, migraciones digitales y brecha tecnológica. *Revista Mexicana de Ciencias Políticas y Sociales*, *52*(209). Retrieved on May 31st, 2017 from http://www.revistas.unam.mx/index.php/rmcpys/article/viewFile/25967/24446

Economic Commission for Latin America and the Caribbean–ECLAC. (2003). *Los caminos hacia una sociedad de la información en América Latina y el Caribe*. Retrieved on September 5th, 2016 from https://www.cepal.org/publicaciones/xml/5/11575/DGE2195-CONF91-3.pdf

Federal Communications Commission-FCC. (2016). Obtenga banda ancha. Retrieved on October 30th, 2016 from https://www.fcc.gov/consumers/guides/la-banda-ancha

Gutiérrez, D. & Rodríguez, E. (2010). Políticas públicas vs pobreza. *Espacios Públicos*, *13*(29), 8-25. Retrieved on October 18th, 2016 from http://www.redalyc.org/articulo.oa?id=67616330002.pdf

Habermas, J. (1982). *Conocimiento e Interés*. Madrid: Taurus.

Hernández, R., Fernández, C. & Baptista, P. (2006). *Metodología de la Investigación*. Mexico City: McGraw Hill.

López, A. M. & García Bustamante, E. M. (2016). La comunicación y la información en Gobiernos locales persistencia de prácticas difusionistas de comunicación en organizaciones gubernamentales del Valle del Cauca (Colombia). *Signo y Pensamiento*, *35*(69), 118-139. DOI: http://dx.doi.org/10.11144/Javeriana.syp35-69.cigl

López, S. L. (2017). Conversación escrita y conversación oral: análisis comparativo. *Tonos Digital*, *32*. Retrieved on May 31st, 2017 from http://www.tonosdigital.com/ojs/index.php/tonos/article/view/1638/896

Mayoralty of Villa del Rosario. (n. d.). Web site: http://www.villadelrosario-nortedesantander.gov.co/.

Ministry of Labor (2013). Perfil productivo. Municipio de Villa del Rosario: Caracterización productiva local. Retrieved on August 19th, 2016 from https://issuu.com/pnudcol/docs/perfil_productivo_municipio_villa_d

Moore, M. & Putzel, J. (2000). Políticas y pobreza: trabajo de preparación para el Reporte de Desarrollo Mundial 2000/1. *Revista Mexicana de Ciencias Políticas y Sociales*, *44*(179), 215-260. Retrieved October 19th, 2016 from http://www.revistas.unam.mx/index.php/rmcpys/article/view/48895

Murolo, N. (2010). Políticas públicas para la inclusión a la sociedad de la información. En *Congreso Iberoamericano de Educación*. Retrieved on May 30th, 2017 from http://www.adeepra.com.ar/congresos/Congreso%20IBEROAMERICANO/TICEDUCACION/R1550_Murolo.pdf

Palacios, J., Flores-Roux, E. & García Zaballos, A. (2013). Diagnóstico del sector TIC en México. Conectividad e inclusión social para la mejora de la productividad y el crecimiento económico. Banco Interamericano de Desarrollo. Retrieved May 30th, 2017 from https://publications.iadb.org/bitstream/handle/11319/5707/Diagn%C3%B3stico%20del%20sector%20TIC%20en%20M%C3%A9xico%202013.pdf?sequence=1

Polanco, C. (2011). Políticas Públicas y TIC en la Educación. *Revista Iberoamericana de Ciencia, Tecnología y Sociedad*, *6*(18), 221-239.

Retrieved on August 3rd, 2016 from www.revistacts.net/volumen-6-numero-18/103-dossier/412-politicas-publicas-y-tic-en-la-educacion

Quintanilla, M. Á. (2016). *Tecnología: un enfoque filosófico y otros ensayos de filosofía de la tecnología*. Mexico: Fondo de Cultura Económica.

Rodríguez, J. G. & Sánchez-Riofrío, A. (2017). TIC y pobreza en América Latina. Íconos-Revista de Ciencias Sociales, *57*, 141-160. DOI: https://doi.org/10.17141/iconos.57.2017.2095

Rodríguez, R. (2004). *Transmodernidad*. Barcelona: Anthropos.

Roth, A. N. (2016). *Políticas públicas: formulación, implementación y evaluación*. Bogotá: Aurora.

Sen, A. (1992). Sobre conceptos y medidas de pobreza. *Comercio exterior*, *42*(4), 310-322.

Senge, P. (2006). *La quinta disciplina en la práctica*. Buenos Aires: Ediciones Granica.

United Nations Development Program-UNDP. (2001). *Informe sobre desarrollo Humano 2001*. Retrieved on August 3rd, 2016 from http://hdr.undp.org/sites/default/files/hdr_2001_es.pdf

United Nations Organization-UN. (2016). *Desarrollo*. Retrieved on September 22nd, 2016 from http://www.un.org/es/sections/what-we-do/promote-sustainable-development/index.html

United Nations Organization-UN. (1961). *Definición y medición internacional del nivel de vida. Guía provisional*. Retrieved on August 3rd, 2016 from http://unstats.un.org/unsd/publication/seriese/seriese_cn3_270_rev1s.pdf

Zambrano, J. (2009). Buenas prácticas de políticas públicas en TIC: experiencias internacionales exitosas. *Revista Virtual Universidad Católica del Norte*, *28*, 1-23. Retrieved on October 18th, 2016 from http://revistavirtual.ucn.edu.co/index.php/RevistaUCN/article/view/84/174