NON-USE AND NON-USERS OF THE INTERNET IN LATIN AMERICA AND THE CARIBBEAN: A CASE STUDY OF INDICATORS IN NATIONAL SAMPLE SURVEYS IN BRAZIL, MEXICO, AND COLOMBIA

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ABSTRACT

Discussions around the digital divide and digital inclusion have been of interest to many scholars since the 1990s and address various approaches to social inequality related to the inequality of access, use and/or appropriation of Information and Communication Technologies. It is still common among policymakers, however, to find a prevalence of proposals concerning access only. Recently authors in Human-Computer Interaction studies have proposed the study of non-use of technology and, particularly, of the Internet, as a phenomenon, not only a phase of technology dissemination. They argue that studying non-use would enable researchers and policymakers to understand how people engage or disengage with technologies, avoiding rhetoric of compulsory use. In this paper, we take this approach to analyze national sample surveys carried out in the three most populated countries in Latin America and the Caribbean (Brazil, Mexico, and Colombia). We seek to identify indicators related to non-use present in the surveys and analyze them, proposing a wider view on the phenomenon based on the literature about the subject. We find that although the surveys do have indicators to understand reasons for non-use of the Internet, they lack of deepness particularly considering the need to look at use/non-use beyond a binary equation. We claim that this fact is due to the foundational aspects of those surveys, which are intended to provide data to support public policies oriented to promote access and use of ICTs. At the background of the discussion, we propose that further studies on technology non-use should be done in order to promote a deeper critique of technology determinism.

KEYWORDS

Internet Non-User, Internet Non-Use, Digital Inclusion, Digital Divide, ICT Indicators

1. INTRODUCTION

The "digital divide" has been part of academic and policymaking interests since the 1990s and is commonly addressed as a social inequality regarding people who have and who not have access to digital technologies, particularly the Internet (Castells, 2001). Many scholars have argued, however, that access should be understood only as part of the equation concerning the social appropriation of those technologies, and even that the concept of digital divide is reductive because it addresses the question as a binary and physical issue (Silveira, 2008; Becker, 2009; Warschauer, 2003).

According to estimates from the International Telecommunication Union (ITU) — an agency from the United Nations that collects national Information and Communications Technologies (ICT) data —, at the end of 2019, 53.6% of the global population, or 4.1 billion people, are using the Internet (ITU, 2019a). The organization claims that "between 2005 and 2019, the number of Internet users grew on average by 10 per cent every year", and that "in recent years though, global growth rates are not as high as a decade ago because some parts of the world are reaching saturation levels" (idem). In fact, ITU estimation shows a considerable variation between socioeconomic groups of countries: 86.6% of the population in developed countries, 47.0% in developing countries and 19.1% in the least developed countries. That is a historical variation that has fostered the digital divide debate particularly in the national policymaking level: the main example was the two phases of the first World Summit on the Information Society (WSIS), held in 2003 and

2005 by United Nations. It was a global multilateral event where many recommendations were made to governments when it comes to policymaking intended to overcome the digital divide as a key strategy to social and economic development, particularly in developing countries (ITU, 2005).

Debates over Internet use, such as gradations, types or skills for use, have become more relevant in recent years while the access rate has increased, notably in developed countries: literacy, people empowerment, development of skills and even trust to use the Internet seem to become more meaningful as the access gap decreases (Scheerder, Deursen and Dijk, 2017; Barbosa *et al.*, 2016; Hargittai, Piper, and Morris, 2018; Internet Society, 2017). In this sense, terms such as "digital inclusion" seem more helpful to address the whole equation that deals with access and use, but also opportunities, knowledge, and skills, that should be considered in policies oriented to promote community development and opportunities (Maryland University, 2013).

Considering the need to discuss this dynamic, in this paper we take an alternative approach to the Internet usage debate, from "use" to "non-use", considering the latter as a complex phenomenon, not only a "phase" of technology dissemination. Recent studies in the Human-Computer Interaction (HCI) field, a research community in Computer Science, suggest that the study of non-use of technologies could help us to understand why and how people engage or disengage with technologies (Baumer *et al.*, 2015; Baumer and Brubaker, 2017; Satchell and Dourish, 2009). Additionally, those studies suggest that looking at non-use and non-users may help policymakers to become more aware of people's needs and interests instead of relying on technologies themselves as solutions to social inequalities.

2. LITERATURE REVIEW

2.1 From the "Digital Divide" to "Digital Inclusion"

In the 1990s, debates around a "digital divide" grew in relevance in the context of the USA to address a statistical disparity between people who had access to computers and to the Internet and people who did not (Castells, 2001; Warschauer, 2003). Within the academic literature, the discussion has become prominent, with authors approaching the social and economic consequences of "haves" and "haves not" when it comes to devices and broadband connection (Warschauer, 2003; DiMaggio and Hargittai, 2001; Dijk, 2005; Silveira, 2008; Becker, 2009). Warschauer (2003) argues that once the use of ICTs, in general, has become relevant in the current globalized world, the study of use, more than just access, is a key approach to address issues such as marginalization and social inclusion regarding technologies – the "social embeddedness of technology" (*ibid.*, p. 199 *et seq.*) and the "technology for social inclusion" (*ibid.*, p. 9 *et seq.*) thus appear as more relevant than just access analysis, especially considering a critique over a causality rhetoric, i.e., the idea that technology itself can bring social inclusion regardless of the social/cultural context around it. DiMaggio and Hargittai (2001) proposed the Digital Inequality Theory as an alternative lens to the concept of the digital divide, suggesting that if the access divide tends to decrease, other sorts of inequality arise among Internet users, related to patterns, purposes and skills for using the network, a framework of analysis also considered by authors such as Reisdorf and Groselj (2017), Hargittai, Piper and Morris (2018) and Barbosa *et al.* (2016). By his turn, Dijk (2005, 2006) also questions rhetorical around the concept, such as the idea that the "divide" is binary, ignoring that between having or not access there are fundamentally different experiences of use — and, we would add, non-use. He also emphasizes the importance of considering social markers such as race, ethnicity, gender, age, and income in the debate around differences in access and use of technology (Dijk, 2005, 2006), an approach also examined by authors such as Deursen and Helsper (2015).

It is important to note that most of those authors come from the context of the USA and Europe. In the LAC context, authors such as Silveira (2008) and Becker (2009) tend to advance toward a more socially-oriented approach considering the specific realities of the region. Silveira (2008) points out that the concept of "digital exclusion" has been used by Brazilian researchers as an alternative to the digital divide and connected to Social Sciences discussions around social inclusion and exclusion, that is, understanding factors related to poverty, misery, and prejudice that prevent people from experience full citizenship. The digital exclusion/inclusion debate would then focus on understanding how the use of digital technologies, particularly the Internet, has to do with social and economic development and empowerment for vulnerable

communities. Becker (2009) takes a similar approach when she argues that we should look at the digital exclusion as a type of social exclusion established as a result of the creation and dissemination of the use of digital technology: a phenomenon not only attached to individual use of those technologies, but to a wider context of citizenship opportunities.

Though the digital divide concept is notably still the most used at the policymaking level, the digital inclusion perspective has gained space, for example, at the Internet Governance Forum (IGF), an annual multistakeholder event held under the United Nations support and delivered as a WSIS outcome. Recently both 2018 (IGF, 2018) and 2019 (IGF, 2019) editions set digital inclusion as one of their main themes, addressing discussions particularly concerned with Internet use and skills for use.

2.2 Non-Use and Non-Users of the Internet: Beyond a Binary Look

Although the digital divide perspective still is the most used in the academic literature, alternative approaches to the debate have been considered. The study of non-use of the Internet as a phenomenon is particularly relevant considering the need for a non-binary look on the issue: once we understand better why people do not use the Internet, we may comprehend not only that the idea of "use" is complex (does everybody use the Internet in the same way? Is it possible to level it out?), but also that people negotiate their relation with technologies differently according to their individual and social context (what "part" of the Internet an individual uses and what part they do not, and why?). Those questions are not relevant only to regions, such as the USA and Europe, where access has become pervasive over the last decade; instead, we claim that even regions, such as LAC, that still lack infrastructure and affordability to access to the Internet, benefit from a broadening analysis of the non-use beyond a binary look.

Discussions around the concept of "user" have been predominant in research in HCI, a consolidated field of study of Computer Science (Baumer *et al.*, 2015, 2014; Satchell and Dourish, 2009). We argue that debates from this field are relevant once they are oriented to people and institutions concerned particularly with technology design and, by extension, with technology use. Indeed, Bødker (2006) explains that throughout HCI history, but particularly in what is called the "Third Wave of HCI", the study of "use" and the "user" have been expanded towards social and cultural contexts. That is a primary question to our approach once we analyze surveys intended to cover national populations and aimed to provide data to be used by governments and other institutions in policymaking processes.

According to Baumer *et al.* (2014, 2015), studying non-use allows understanding the wide range of possible negotiations and engagements/disengagements that people have with technologies, particularly considering the idea of agency, i.e., being able to choose using or not using a specific technology, as well as how to use it. In Baumer *et al.* (2015), the authors claim the need to scrutinize the rhetoric of a "digital imperative", that is, the compulsory use of certain technologies based on the idea of how relevant they are to society or individual's needs. The key question is not whether the Internet or other technologies may or may not be beneficial to people, but how a rhetoric of compulsory use – perceptible in many debates on the "digital divide" – does not address the whole question of social implications of using the Internet towards a real improvement of people's lives, particularly concerning developing countries. We also argue the need to take into consideration that "users" also means, for most countries, "consumers": if policymakers seek to consider Internet usage beyond the consumption of devices and services, that "usage" should be understood critically and around a framework of technology dissemination in a bottom-up perspective — examples are community networks initiatives (Belli, Echániz, Iribarren, 2016) and the Free Software Movement (FSF, 2019).

By proposing a look "beyond the user", Satchell and Dourish (2009) investigate six particular forms of technology non-use: "lagging adoption", which refers to people who are not users yet but will become in the near future, an "expected pattern of technology adoption and diffusion (*ibid.*, p. 2); "active resistance", people who deliberately choose not to become users, whether due concerns over privacy and control over their personal information or any other reason that stimulates a "positive effort to resist a technology" (*ibid.*, p. 3); "disenchantment", a variant of active refusal that refers to people who choose not to become users for a sense of nostalgia from an era prior to the technology; "disenfranchisement", people prevented from usage by economic, social, infrastructure and/or geographic factors, among others; "displacement", people who do not use a specific technology directly, but who can be as affected by it as a daily user; and "disinterest", which refers to non-use as a result of a feeling of irrelevance towards the technology. By their turn, Wyatt *et al.* (2002) propose four types of non-users of the Internet: "resisters", those who never used because they do not want to, even having easy access; "rejectors", those who stopped using voluntarily, for whatever reason; "excluded"; those who never used because they cannot get access, considering many possible reasons; and

"expelled", those who stopped using involuntarily, either because of costs or for having lost institutionally access.

Each of those categories opens a possible different approach to the non-use/non-user phenomena beyond a binary look and the idea that people do not use the Internet only due to lack of infrastructure, affordability or skills. We argue that those categories can also be expanded, mixed and changed according to each cultural and social reality. Moreover, we claim that studying non-use categories are relevant to policymakers not only as a tool to create policies so people will become users, but as a tool to better understand how people, in different contexts, engage or not with technologies — understanding, then, that public policies towards social inclusion are not necessarily attached to technology dissemination, and also that technology usage should be taken around a framework of people empowerment.

3. OUR APPROACH

The research question brought to this paper is whether and how non-use and non-users of the Internet are considered in surveys on ICT usage at a national level. We focused on the three most populated countries (United Nations, 2019) in the Latin American and the Caribbean (LAC) region — Brazil, Mexico, and Colombia — and examined indicators present in national sample surveys undertaken in these countries. Acknowledging the possibility of different data sources for each country, we considered the ones listed in the ITU Statistics Portal (ITU, 2019b). The final report of each national survey was obtained online, from the website of the organizations responsible for carrying them out. We reviewed each report separately, searching for, among all indicators present in the survey, the presence of indicators related to non-use of the Internet. We did not consider in this review indicators only on the number or percentage of people who do not use the Internet in each country. The indicators, if present, were then listed and we analyzed both the question asked and the possible answers. Finally, we compared the three surveys, registering possible similarities or differences in how they consider or not the non-use and non-user of the Internet.

4. RESULTS

A first analysis of the goals of each survey finds a similarity between them when it comes to producing data on ICT access and use and intended to support public policies (NIC.br, 2019, p. 143; INEGI, 2018; DANE, 2019, p. 2). Important to say that both Mexican and Colombian surveys are carried out by national governments, while the Brazilian survey is carried out by a multi-stakeholder organization with participation of representatives from the federal government (NIC.br, 2019, p. 5). Table 1 brings general information about each survey:

Table 1. National surveys considered in this paper

Country	Name of the survey	Type of survey	Organization responsible	Report
Brazil	"TIC Domicílios 2018 - Pesquisa Sobre o Uso de Tecnologias de Informação e Comunicação nos Domicílios Brasileiros"	National sample survey with 9+ years old people living in all Brazilian federative units, and urban and rural areas	Núcleo de Informação e Coordenação do Ponto BR (NIC.br) (Brazilian Network Information Center), the executive body of the Brazilian Internet Steering Committee (CGI.br), a multistakeholder organization	2018-2019 (NIC.br, 2019)
Mexico	"ENDUTIH - Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares"	National sample survey, 6+ years old people living in all Mexican regions, and urban and rural areas	Instituto Nacional de Estadística, Geografía e Informática (INEGI) (National Institute of Statistics, Geography and Information Technology), an autonomous public agency of Mexican government	2018 (INEGI, 2018)
Colombia	"Indicadores básicos de tenencia y uso de Tecnologías de la Información y Comunicación en hogares y personas de 5 y más años de edad – Año 2018"	National sample survey, 5+ years old people living in all Colombian regions, and urban and rural areas	Departamento Administrativo Nacional de Estadística (DANE) (National Administrative Department of Statistics), an agency of Colombian government	2018 (DANE, 2019)

In the case of the Brazilian survey, there are two indicators related to non-users: "C15 - Individuals who have never accessed the internet, by reasons for never having used it" (NIC.br, 2019, pp. 305-307) and "C15A - Individuals who have never accessed the internet, by main reason for never having used it" (NIC.br, 2019, pp. 308-310). In the first question, eight possible answers are presented: "Lack of need", "Lack of interest", "Lack of computer skills", "No place to use it", "Too expensive", "Concerns with security and privacy", "To avoid contact with dangerous content", and "Other reason". In this first question, the person surveyed could indicate as many reasons as they wanted. In the second question, only the main reason was asked, with two more possible answers: "Does not know" and "Did not answer". The main reasons pointed out were "Lack of interest" (27%), "Lack of computer skills" (27%) and "Too expensive" (16%). We understand as positive the possibility of choosing more than one reason at the same time, while also having a single indicator to determine the main reasons. Based on the literature on technology non-use, however, we suggest that the survey could broaden the discussion to also investigate non-use among people who have stopped using the Internet — "rejecters" or "expelled", according to Wyatt *et al.* (2002) —, or who use in periods of time shorter from the minimum to be considered a user according to the survey methodology (3 months) — here are 6% of the population analyzed, according to the indicator "C2 - Individuals who accessed the Internet by last access" (NIC.br, 2019, p. 286).

In the case of the Mexican survey, the indicator "Households with a computer and that do not have an Internet connection, according to main reasons", eight different reasons for non-use of the Internet are present, but attached only to households with a computer, which excludes those who neither have a computer and any other device nor an Internet connection (INEGI, 2018). The available reasons were: "lack of economic resources", "do not have interest or do not need it", "do not know how to use it", "not aware of its utility", "equipment insufficient or without capacity", "no provider or infrastructure available in the place", "other", and "not specified". We suggest that broadening this indicator to investigate why households, regardless of having a computer or not, do not have an Internet connection, may be useful to understand precisely why part of Mexican households owns neither the equipment nor the connection, and why.

In the case of the Colombian survey, the only indicator related to non-use is titled "Distribution of people who do not use the Internet, according to the main reason for non-use" (DANE, 2019, p. 24). Four possible answers were presented: "Do not know how to use it" (44.8% of total population who claimed that do not use the Internet), "Do not consider it needed" (24.2%), "It is too expensive", (18.1%), and "Other" (12.9%). According to a footnote, the last possible answer groups "lack of service coverage at the area, no permission for use, security and privacy reasons, and others" (idem). Compared to the surveys of the other two countries, the Colombian one offers a limited number of reasons for non-use (4 against 8 in both Brazilian and Mexican surveys). It is not clear if the reasons grouped in the "Other" option were presented in that way due to lower prevalence compared to the other options or any other reason. Notwithstanding, we argue that the reason "no permission for use" is vague, because it could embed many different reasons.

Lastly, it is needed to cite that those surveys consider "user" differently: while Brazilian (NIC.br, 2019) consider "Internet user" a person who has used the Internet at least once in the last 3 months prior to the survey, the Mexican (INEGI, 2018) survey considers a 12-month term. We did not find any similar information in the Colombian survey (DANE, 2019). We understand that taking this variation into consideration is crucial to any analysis regarding the percentage of Internet users and non-users in each country and that additional analysis of this data is needed in order to better understand, for example, ITU's statistics (ITU, 2019).

To summarize our analysis, we proposed Table 2, which relates each type of non-use or non-user categories cited in this paper and the categories presented in each national survey considered. We claim that it is not possible to correlate them individually since they all open many possibilities of analysis. Our exercise is intended only to point it out that further understanding of these complex phenomena, beyond a binary look on use/non-use or under a rhetoric of compulsory use of technology, is possible.

Table 2. Proposed relations between types of non-use/non-user from the literature and from national surveys

Author	Types	NIC.br survey (Brazil)	INEGI survey (Mexico)	DANE survey (Colombia)
Satchell and Dourish (2009)	Lagging adoption	All reasons	All reasons	All reasons
	Active resistance	"Lack of interest", "Concerns with security and privacy", "To avoid contact with dangerous content"	"Do not have interest or do not need it"	"Do not consider it needed", "Other (security and privacy reasons)"
	Disenchantment	"Lack of interest", "Concerns with security and privacy", "To avoid contact with dangerous content"	"Do not have interest or do not need it", "Not aware of its utility"	"Do not consider it needed", "Other (security and privacy reasons)"
	Disenfranchisement	"Lack of computer skills", "No place to use it", "Too expensive", "Concerns with security and privacy"	"Lack of economic resources", "Do not know how to use it", "Not aware of its utility", "Equipment insufficient or without capacity", "No provider or infrastructure available in the place"	"Do not know how to use it", "It is too expensive", "Other (lack of service coverage at the area)", "Other (no permission for use)", "Other (security and privacy reasons)"
	Displacement	"Lack of need", "Lack of computer skills", "Too expensive", "Concerns with security and privacy", "To avoid contact with dangerous content"	"Lack of economic resources", "Do not have interest or do not need it", "Do not know how to use it", "Not aware of its utility", "Equipment insufficient or without capacity", "No provider or infrastructure available in the place"	"Do not know how to use it", "Do not consider it needed", "It is too expensive", "Other (lack of service coverage at the area)", "Other (no permission for use)", "Other (security and privacy reasons)"
	Desinterest	"Lack of need", "Lack of interest", "Lack of computer skills"	"Do not have interest or do not need it", "Do not know how to use it", "Not aware of its utility"	"Do not know how to use it", "Do not consider it needed"
Wyatt et al. (2002)	Resisters	"Lack of need", "Lack of interest", "Concerns with security and privacy", "To avoid contact with dangerous content"	"Do not have interest or do not need it", "Not aware of its utility"	"Do not consider it needed", "Other (security and privacy reasons)"
	Rejectors	"Lack of need", "Lack of interest", "Concerns with security and privacy", "To avoid contact with dangerous content"	"Do not have interest or do not need it", "Not aware of its utility"	"Do not consider it needed", "Other (security and privacy reasons)"
	Excluded	"Lack of need", "Lack of computer skills", "No place to use it", "Too expensive", "Concerns with security and privacy", "To avoid contact with dangerous content"	"Lack of economic resources", "Do not know how to use it", "Not aware of its utility", "Equipment insufficient or without capacity", "No provider or infrastructure available in the place"	"Do not know how to use it", "It is too expensive", "Other (lack of service coverage at the area)", "Other (no permission for use)", "Other (security and privacy reasons)"
	Expelled	"Lack of computer skills", "No place to use it", "Too expensive", "Concerns with security and privacy", "To avoid contact with dangerous content"	"Lack of economic resources", "Do not know how to use it", "Not aware of its utility", "Equipment insufficient or without capacity", "No provider or infrastructure available in the place"	"Do not know how to use it", "It is too expensive", "Other (lack of service coverage at the area)", "Other (no permission for use)", "Other (security and privacy reasons)"
	Not possible to determine	"Other reason", "Does not know", "Did not answer"	"Other", "Not specified"	"Other"

5. CONCLUSION

In this paper, we chose an alternative path to the discussion on use and appropriation of the Internet to bring a recent approach to non-use and non-users of technology as phenomena. Focusing on non-use and non-users, as proposed in the literature review, enables us to identify that policymaking process often supports a rhetoric of compulsory use of technology as a direct measure of socioeconomic development, though discussions on digital inclusion claim that access and use without further qualitative action do not mean social inclusion in fact. Supporting social inclusion policies that stimulate access and use of the Internet should also mean discuss whether this inclusion is merely a telecommunications market issue or a broader social issue that connects inequality of technology dissemination to social marginalization.

By examining national sample surveys in the three most populated countries in Latin American and the Caribbean region, we see that even though they all have indicators related to non-use of the Internet, further indicators could be proposed in order to understand non-use as a phenomenon related to possible negotiations and engagements/disengagements that people have with the Internet. Understanding that those surveys provide data to researchers and policymakers, a broader consideration on the non-use of the Internet can have a positive impact on new research studies and new public policies in those countries.

That is particularly relevant considering that we are talking about a technology that enables a growing number of different services that people can engage with or not. Reasons concerning non-use as a deliberate choice, economic or cultural prevention, or even a temporary condition are equally relevant as the ones related to lack of infrastructure and affordability. And although the discussion on non-use of technology as a phenomenon has become relevant in the context of the USA and Europe, we understand that it is useful to also examine the context of developing countries. That is said considering that public policies intended to increase access could foster, in fact, a socially-oriented approach to technology dissemination, avoiding an acritical proposal that sees the technology itself as a solution — rhetoric widely scrutinized by scholars who critique technology determinism.

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