

# Digital gender divide or technologically empowered women in developing countries?

## A typical case of lies, damned lies, and statistics

Martin Hilbert\*

\*University of Southern California (USC); United Nations Economic Commission for Latin America and the Caribbean (ECLAC/CEPAL)



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### ABSTRACT

The discussion about women's access to and use of digital Information and Communication Technologies (ICT) in developing countries has been inconclusive so far. Some claim that women are rather technophobic and that men are much better users of digital tools, while others argue that women enthusiastically embrace digital communication. This article puts this question to an empirical test. We analyze data sets from 12 Latin American and 13 African countries from 2005-08. This is believed to be the most extensive empirical study in this field so far. The results are surprisingly consistent and revealing: the reason why fewer women access and use ICT is a direct result of their unfavorable conditions with respect to employment, education and income. When controlling for these variables, women turn out to be more active users of digital tools than men. This turns the alleged digital gender divide into an opportunity: given women's affinity for ICT, and given that digital technologies are tools that can improve living conditions, ICT represent a concrete and tangible opportunity to tackle longstanding challenges of gender inequalities in developing countries, including access to employment, income, education and health services.

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During the second half of the last century, human kind has turned to the “massive task of making our bewildering store of knowledge more accessible” (Bush, 1945). The result has brought on irrevocable social, productive, political and cultural transformations, which are based on a global communication infrastructure that includes innovations like the Internet, mobile telephony and social networking applications in all shapes and sizes. During the beginning of this new century, society at large is starting to embrace these new tools, changing forever the way we communicate, coordinate our activities and organize social interactions (Bell, 1973; Perez, 1983; Webster, 1995; Negroponte, 1995; Castells, 1996; Freeman and Louça, 2001). At the core is the question of access to digital networks, and, in particular, who gets empowered and who is informationally marginalized by use of these new tools.

As a contribution to this ongoing discussion, this article analyzes the differences between men’s and women’s access to and use of Information and Communication Technology (ICT) in developing countries. We start with a literature review that shows that some see digital technologies as practical and tangible tools for women to overcome longstanding inequalities. ICT can help women to gain employment (for example through telework or newly created information jobs), obtain cost-effective health services and education (such as through online courses or software-based literacy programs) and to increase their income (such as through e-business channels and online transactions). In contrast to this glass-half-full outlook stands the pervasive and persistent counterargument that women are at a natural disadvantage to benefit from the digital revolution because they are less tech savvy, and more technophobic, and because the technology is not built for their needs and intuition. If this were the case, the increasing socio-economic importance of ICT would add a new dimension to the already existing vicious circle between discrimination and women’s backwardness, which can be expected to be particularly severe in developing countries, where four out of five women live worldwide. Unfortunately very few of the related studies control for potentially confounding variables.<sup>1</sup> We know that the lack of employment, income and education affect ICT usage negatively (e.g. NTIA, 1999; Cullen, 2001; Warschauer, 2003; Mossberger, et.al., 2003; OSILAC, 2007). We also know that women are discriminated against in many aspects of social life, including employment, income and education. Given these potential confounders, it is not clear if being a woman per se has a negative, neutral or positive

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<sup>1</sup> A notable exception for the case of the United States is Rice and Katz (2003), which, after control, do not detect any significant digital divide between men and women. The author is not aware of any controlled studies for the digital gender divide on the international level.

effect on ICT usage. In the first case, the digital revolution would pose a severe threat to women. In the latter case, the increasing socio-economic importance of ICT would pose a unique opportunity: the new tools would be a perfect tool to fight existing inequalities between men and women.

To this point, lack of adequate statistical data had prevented us from testing this question empirically. Arguments were often based on anecdotal evidence from case studies or uncontrolled correlations, which sometimes lead to contradictory results. In recent years, statistical institutes and academic research centers in the developing world have made a significant effort to collect adequate statistical information. For this study we employ 25 datasets from 12 Latin American and 13 African countries (total of 1,176,816 observations), which allows us to execute a series of uncontrolled and controlled empirical tests that will provide further insight into this unresolved question.

### ***What is the digital divide?***

The unfolding of the digital revolution is happening at unprecedented speed (for ICT penetration rates during the past 15 years, see ITU, 2010). However fast, it is not immediate and the related diffusion process follows the form of a well-known S-shaped curve, which distinguishes between early adopters and latecomers (Rogers, 2003). While this process unfolds, a new form of inequality is added to all the existing forms of discrimination: an inequality in the power to communicate and to process information digitally. The term “digital divide” has been coined to refer to this concept (e.g. NTIA, 1995, 1999; OECD, 2001).

Studies on the digital divide differ in their focus and methodological approach. Despite their differences, all of them answer (part of) the following questions: who (individuals vs. organizations/communities, vs. societies/countries/ world regions, etc.), with which attributes (income, education, geography, age, gender, or type of ownership, size, profitability, sector, etc.), connect how (pain access vs. usage vs. real impact), to what kind of technology (phone, Internet, computer, digital TV, etc.) (see Hilbert, 2011). In this article we test for one specific attribute of ICT users: their gender.

The main focus of this article is set on analyzing access to ICT in Latin America and Africa, while we also sneak an exploratory peak into how men and women use the Internet in Latin America. This is important because literature has shown that access and usage foster the well-being in multiple aspects of life (e.g. Castells, 1996; Webster, 1995;

Waverman, et.al. 2005; Cimoli, et.al, 2010; Hilbert and Peres, 2010). Previous research has shown that ICT adoption patterns are characterized by the same long established determinants of inequality as other aspects of social life, such as those related to income, education, skills, employment, geography, age and ethnicity, and gender, among others (e.g. Cullen, 2001; Compaine, 2001; OECD, 2002; Warschauer, 2003; Mossberger, et.at., 2003; van Dijk, 2005; OSILAC, 2007; Hilbert, 2010).

### **What do we know about the digital gender divide?**

Let us begin with clarifying that most literature in this field refer to ICT access and usage patterns among biologically identifiable men and women (sex), not the self-identified gender identity of an individual, such as understood in the field of gender studies. While it would be very interesting to explore the relationship between the digital divide and gender identity, the paucity of data on the last variable forces us to follow most existing research and equate gender with sex in this article.

During the 1990s, researchers were quick to observe that women tend to be latecomers to the digital age (e.g. Dholakia, 1994; NTIA, 1999). As a consequence, the new technology was popularly portrayed as a male domain (Badagliacco, 1990). Bimber (2000: 2) concluded that the gap in ICT usage between women and men “is the product of both socioeconomic differences and some combination of underlying, gender-specific effects”. Researchers claimed that those gender-specific differences had their origins in the fact that women underestimated their actual usage skills, which lead to lower self-efficacy to use ICT (Busch, 1995; Joiner, et.al, 1996; Hargittai and Shafer, 2006), as well as in their general attitudes toward computers (Shashaani, 1994). It was concluded that “men are more interested in technology than women, and they are also more tech savvy” (Fallows, 2005: 5). In short, women were seen as being more likely to be technophobic and were ascribed a certain computer anxiety. This type of reasoning is in line with a longstanding argument that technology is gendered (Lohan and Faulkner, 2004; Puente, 2008). ICT are seen as yet another “toy for the boys” (Faulkner, 2001).

As more statistics became available and Internet and mobile telephony penetration rates began to rise, women started to catch up in many developed countries (Rice and Katz, 2003). In the United States, most new users were women around the year 2000 (Cummings and Krout, 2002). Gender differences remained, but were smaller (Leggon, 2006) and mainly concentrated on marginalized groups, such as ethnic minorities (Tolbert, et.al., 2007). However, once online, women remained less frequent and less

intense users of the Internet (Ono and Zavodny, 2003; Wasserman and Richmond-Abbott, 2005). The focus of attention started to shift towards differences in how men and women use ICT (Bonfadelli, 2002). For example, it was found that girls use the Internet for instant messaging and chat-rooms, whereas boys downloaded games and music, engaged in online trading, and created Web pages (Lenhart, Rainie, & Lewis, 2001; Roberts and Foehr, 2004). Fallows (2005: 1) summarized a survey in the United States with the conclusion: “men like the internet for the experiences it offers, while women like it for the human connections it promotes”. As already mentioned, we will look at both aspects in our subsequent analysis: access and usage, with a focus on the first one.

Statistical data from the USC led World Internet Project (2009) reconfirm these findings. In Canada, 79% of men and 75% of women were online in 2007. This difference grows to 56% to 46% for citizens of 60 years and older. The study also confirms differences in usage. In 2004, Canadian men spent on average more time online than women (14.3 to 12.0 hours per week). This difference increased from 2.3 to 3.5 hours in 2007 (18.8 hours to 15.3 hours). As the main reasons for non-usage, Australian women state lack of interest (35%), not having a computer or Internet connection (26%) or lack of skills (16%). The percentage of men to women who use the Internet is reported for the following developed countries: Australia: 74% to 71%. Czech Republic: 55% to 46%; Hungary: 45% to 39%; Israel: 71% to 64%; New Zealand: 78% to 77%; Singapore: 69% to 54%; United Kingdom: 68% to 65%. The two exceptions to this trend seem to be Sweden (with 75% of men online and 78% of women) and the United States (71% to 73%). However, even in these countries, men are more frequent and more intense users. In 2008, men from the U.S. are more likely than women to surf the web “at least daily” (54 to 41 percent) and men spend 1.5 hours more than women at their monitors reading. In short, differences have become smaller in developed countries, but still remain, especially in usage.

### ***What about women and ICT in developing countries?***

Due to the paucity of adequate statistics about the world’s poor, technology-related research and respective policy-advice is often exclusively focusing on the roughly 20 % of the world population living in the most industrialized countries<sup>2</sup>, while the remaining

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<sup>2</sup> In 2006, the countries member countries of the Organisation for Economic Co-operation and Development (OECD), which represents the world’s “industrialized countries”, was home to 1,184 million inhabitants, within a world population of 6,555 million (18 %).

80 % of the global population is frequently ignored or inappropriately subsumed under these findings. This is delicate, because living conditions, opportunities and threats differ decisively in developed and developing countries. The vast majority of women live in developing countries and they often suffer even more gender related discrimination than their counterparts in developed countries. At the same time, if ICT were to hold a promise to empower women, than this promise is much larger in the developing world, given that the lower starting point provides for greater potential gains.

### **ICT: a threat for women**

Similar to the above-cited data from developed countries (World Internet Project, 2009), existing data from developing countries show that women are less likely than men to use ICT. This leads related research to the conclusion that a digital gender divide clearly exists and is a severe threat to women: “In many countries such gaps become dramatic, putting women at a significant disadvantage” (Hafkin and Huyer, 2007: 33). Similar to findings in developed countries, this divide applies to access and to the frequency and intensity of usage (Park, 2009). Looking for reasons, researchers normally fall back on anecdotal case studies and local evidence, which found that women face barriers that include lack of access and training, and that they were confronted with software and hardware applications that did not reflect their female interests and needs (Arun and Arun, 2002; Ng and Mitter, 2005; Best and Maier, 2007). In this sense, the same technophobic arguments that had been raised in the developed world during the 1990s, have been transferred to women in the developing world in recent years. It is argued that women have a negative attitude toward ICT (Varank, 2007) and that the introduction of technologies has often implicitly been designed to meet the needs of men, not of women (Basu, 2000; Hafkin, 2000).

### **ICT: an opportunity for women**

In contrary to these findings, some case studies and anecdotal evidence show that ICT can and are empowering women in developing countries. For example, ICT provide women entrepreneurs with access to worldwide e-business channels, which and can be operated 24 hours a day from home in real-time (Heeks, et.al. 2004; Schaefer Davis, 2007; Brodman and Berazneva, 2007). Ng and Mitter (2005) look beyond ICT’s contributions to economic well-being, and show how ICT are used by women for the purposes of community building and political organization. ICT enable meaningful

participation and make female voices heard, as proven by the role of digital networks in feminist movements (Harcourt, 1999). Others have argued that ICT have the potential to completely redefine traditional gender roles, especially for women who have limited skills or who lack the resources to invest in higher education (Kelkar and Nathan, 2002). In short, ICT can be “powerful tools for women to overcome discrimination, achieve full equality, well-being and participation in the decisions that determine their lives and the future of their communities. [...] ICT [...] opens up a direct window for women to the outside world. Information flows to them without distortion or any form of censoring, and they have access to the same information as their counterparts” (Sharma 2003: 1). However, this potential to empower women in the developing world depends on access to and actual usage of these technologies, which is a necessary first step (see e.g. Scott, 2001).

### **How can misleading statistics mask the reality about the gender divide?**

We have seen that the literature is inconclusive. We do not know if ICT are a severe threat or an opportunity for women. What could be the reason for this apparent contradiction?

There is a subtle message that can often be read between the lines of research related to the digital gender divide. For example, Sharma (2003) points out that “women have less online access than men, for all the usual gender-related reasons—time, money, control, learning opportunities, other commitments, prioritising others’ needs”. Arguing that longstanding gender-related inequalities are the reason for less usage is very different from arguing that women are naturally technophobic. It has widely been measured that women around the world are discriminated in fields like employment, income and education (see e.g. Anand and Sen, 1995). It is therefore not clear if these existing inequalities lead to the fact that women make less usage of ICT or, if being a woman per se has a negative effect on ICT usage. This problem is well known in statistics and is treated under the topic of so-called “confounding variables” (e.g. Freedman, et.al., 2007).

Often the confounder is easy to spot. For example, if somebody would realize that children’s ICT usage is positively correlated to the size of their shoes, most people would become suspicious and reason that age, and therefore literacy skills, might confound this



relation. There is no reason to believe that the shoe size of children with the same level of schooling would make any significant difference. Often it is not as easy. But the cure remains the same: as soon as there is a suspicion of confounding variables, it is wise to control for them and to compare subjects on the same level of such variables. If the result still makes a difference, it is more probable that the original variable has explanatory power. If not, the confounder made the difference.<sup>3</sup>

### ***What does the data say?***

The most frequently analyzed statistics so far have been collected by telecommunication administrative authorities and have been harmonized by the United Nations Telecommunications Union (e.g. ITU, 2010). Traditionally, these administrative registers collect the national aggregates of the numbers of subscriptions, connections and devices and therefore do not allow detailed cross-tabulations with user attributes (like gender, income, employment, education, etc). Those are provided by the household surveys that we will use.

Our databases are both products of the initial seed funding of Canada's International Development Research Centre (IDRC). In Latin America, IDRC has cooperated since 2002 with the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) to operate OSILAC (Observatory for the Information Society in Latin America and the Caribbean)<sup>4</sup>. During the last decade, OSILAC has successfully worked with National Statistics Offices all over the region to include ICT indicators in existing household surveys. Given the large samples of official household surveys, this data is very robust (all used sample sizes are between 21,000 and 408,000)<sup>5</sup>. Parts of these databases are publicly available (OSILAC, 2009). In Africa, IDRC is cooperating with the Research ICT Africa Network<sup>6</sup>, which has conducted their own household and individual user surveys of ICT access and usage between 2007 and 2008 (sample sizes

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<sup>3</sup> This does not change the fact that children with larger shoes will have better ICT usage scores. Same accounts for the case of ICT and women: might be that women use ICT less than men, but the question is why: because they are women, or because of some other reason that come with being a woman?

<sup>4</sup> OSILAC: <http://www.eclac.org/SocInfo/OSILAC/>

<sup>5</sup> Sample sizes: Brazil 2005: 408,148; Chile 2006: 268,873; Costa Rica 2005: 43,682; Ecuador 2006: 55,666; El Salvador 2006: 68,312; Honduras 2007: 100,028; Mexico 2007: 21,292; Nicaragua 2006: 40,190; Panama 2007: 48,295; Paraguay 2007: 21,053; Dominican Republic 2005: 20,610; Uruguay 2006: 64,164.

<sup>6</sup> Research ICT Africa: <http://www.researchICTafrica.net/>

between 819 and 2,355).<sup>7</sup> Despite the smaller sample size, this is nonetheless an important effort, as Africa is normally considered a black hole for technology related statistics (for overview of these surveys see Gillwald and Stork, 2008).

## Controlling correlations in Latin America

Let us start with a series of simple correlations between gender and both, Internet usage and mobile phone usage. It is important to underline that we use the question of active usage by a specific person as an indicator for access, not the plain existence of equipment in a household. We use the Pearson correlation coefficient to measure the degree of association between two correlation coefficients (e.g. Williams and Monge, 2001; Freedman, et.al., 2007), in our case between being a woman and using the Internet. We code in a way that a negative correlations ( $r < 0$ ) means that women use less Internet than men, while  $r > 0$  implies that Internet usage is positively correlated with being a woman.<sup>8</sup>

A first look at the upper two rows of Table 1 reveals that most of the correlations between ICT usage and being a woman turn out to be negative. In agreement with previous findings, the overall data show that women are less likely than men to use the Internet or a mobile phone. In Brazil, for example, the region's largest country with over a third of the region's GDP and population, being a women is negatively correlated with using the Internet (with a correlation coefficient of  $r = -0.022$ ), and with using a mobile phone (with  $r = -0.029$ ).<sup>9</sup>

In the following rows of Table 1 show two kinds of the inequalities between men and women in percentage points. It is shown that there are real inequalities between men and women regarding their working status (being employed or self-employed) and their current attendance at an educational institution. Continuing with the example of Brazil, 92.2% of all men are actively working, compared to only 83.7% of women, and 31.6% of

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<sup>7</sup> Sample sizes: Benin: 1101; Botswana: 818; Cote d'Ivoire: 1112; Ethiopia: 2355; Ghana: 1092; Kenya: 1461; Mozambique: 1131; Namibia: 885; Rwanda: 1078; Senegal: 1081; South Africa: 1771; Tanzania: 1490; Uganda: 1127.

<sup>8</sup> Pearson's  $r$  is normalized between +1 and -1, where +1 is a perfect positive association and -1 is a perfect negative association. A correlation near zero indicates that there is no relationship between the two variables.

<sup>9</sup> A second look at the data reveals that the identified correlations are not very strong (even though they are all statistically significant, weighted and stratified samples with  $p < .001$ ). Squaring Pearson's correlation coefficient tells us how much of the variation in ICT usage can be explained by variation in being male or female. In all cases, less than 0.5% of the variation in ICT usage can be explained by gender (for example, in Chile  $r^2 = -0.047^2 = 0.2\%$ ). There must be much more powerful explanatory variables that determine ICT usage than gender.

all men currently attend an educational establishments, compared to 30.8% of all women. These differences do not seem to be very large, but let us see what happens when we control for them. This can be done with a partial correlation, which measures the degree of association between two variables when the effects of a third variable are removed (see e.g. Williams and Monge, 2001). To be more precise: what is the relationship between being a women and ICT usage when the effect of work or current schooling is removed?

Table 1 shows that in the controlled environment, being a woman is positively correlated with using the Internet (for Brazil  $r = +0.056$ ) and with using a mobile phone (for Brazil  $r = +0.033$ ). While this correlation is still very low, it is striking that this turn-around effect is consistent throughout almost all analyzed countries, which represent a very heterogeneous group of socio-demographic and cultural societies. There are some countries in which women are more active Internet users to begin with (Panama, Honduras, Nicaragua) or more active mobile phone users (Dominican Republic, Panama, Nicaragua), which of course naturally argues in favor of women being more active ICT users to begin with. There are also cases in which women are not discriminated in the fields of employment status (Nicaragua) or current attendance at an educational establishment (Panama and Ecuador). This does not affect the logic of our result. The overwhelming majority of the cases show that, when controlling for working and educational enrollment conditions, women make more use of digital ICT than men. The only exception in the 20 changes in tendency that can be observed in Table 1 is mobile phone usage in Ecuador: the correlation coefficient becomes weaker in the controlled test, but continues to stay negative ( $r = -0.037$ ). This reminds us of the fact that social science is not an exact science.

Table 1: Correlations and controlled correlations of gender with ICT usage in Latin America; working and studying populations by men and women.

|   |                                     | Chile 2006 | Brazil 2005 | Uruguay 2006 | Mexico 2007 | Paraguay 2007 | El Salvador 2006 | Costa Rica 2005 | Dominican Rep. 2005 | Panama 2007 | Honduras 2007 | Nicaragua 2006 | Ecuador 2006 |             |
|---|-------------------------------------|------------|-------------|--------------|-------------|---------------|------------------|-----------------|---------------------|-------------|---------------|----------------|--------------|-------------|
| Correlation coefficient, r  | Internet use with being a woman     | -.047      | -.022       | -.024        | -.045       | -.002/        | -.023            | -.032           | -.033               | <b>.020</b> | <b>.008</b>   | <b>.004</b>    | -.026        |             |
|   | Mobile use with being a woman       | -.004      | -.029       | n.a.         | n.a.        | n.a.          | n.a.             | -.044           | <b>.009</b>         | <b>.011</b> | -.029         | <b>.013</b>    | -.070        |             |
| Real world inequalities (in %)  | Actively working                    | % of Men   | <b>98.0</b> | <b>92.2</b>  | <b>98.7</b> | <b>95.1</b>   | <b>88.0</b>      | <b>89.3</b>     | <b>98.3</b>         | <b>93.7</b> | <b>95.8</b>   | <b>87.3</b>    | 88.3         | <b>86.5</b> |
|   |                                     | % of Women | <b>98.0</b> | 83.7         | 96.3        | 90.4          | 74.0             | 79.3            | 96.5                | 78.0        | 85.0          | 81.3           | <b>91.7</b>  | 64.8        |
|   | Attending educational establishment | % of Men   | <b>31.1</b> | <b>31.6</b>  | <b>29.6</b> | <b>33.0</b>   | <b>44.2</b>      | <b>34.5</b>     | <b>35.0</b>         | <b>34.2</b> | 28.6          | <b>31.4</b>    | <b>34.7</b>  | 10.8        |
|   |                                     | % of Women | 28.2        | 30.8         | 27.6        | 29.3          | 44.1             | 30.3            | 34.2                | 34.3        | <b>29.9</b>   | 31.2           | 33.1         | <b>11.3</b> |
| Correlation coefficient, r: being a woman, controlled for working and assisting educ. establishment | Internet use                        | .050       | .056        | .047         | .048        | .088          | .030             | .047            | .082                | .148        | .093          | .066           | .007         |             |
|   | Mobile use                          | .039       | .033        | n.a.         | n.a.        | n.a.          | n.a.             | .019            | .094                | .139        | .069          | .085           | <b>-.037</b> |             |

Source: own elaboration, based on OSILAC, 2009.

Let us dig deeper into this question and open up this statistical black box to see what actually accounts for these results. The first two rows of Table 2 show the actual percentages that lead to the previous finding that in most countries more men than women use the Internet. Continuing with our example of Brazil, 22.0% of men use the Internet compared to 20.2% of women. In mobile phone usage the divide is at 38.5% to 35.4%. In agreement with the results from Table 1, the notable exceptions for Internet usage are Panama, Honduras and Nicaragua, and for cell phone users, Dominican Republic, Panama and Nicaragua. The following rows show what happens if we put men and women on “equal footing” regarding their working condition. We only consider men and women who are either employed or self-employed, neglecting those who are unemployed, retired or stay at home without salary. Based on this condition, it turns out that in all countries more women than men use ICT actively, again with the sole exception of mobile phone usage in Ecuador. In Brazil, only 22.8% of all working men use the Internet, while 28.5% of all working women are online. Only 47.0% of all Brazilian working men use a mobile phone, while 50.6% of all working women telecommunicate on the go. The same general change in direction accounts for ICT when

controlled for current attendance at an educational establishment. Once in school, women turn out to be more active users of digital opportunities (35.6% to 36.2% for Internet use in Brazil; 32.5% to 39.9% for mobile usage). The exceptions to the general rule for Internet usage are again Ecuador, as well as Costa Rica and Dominican Republic. Generally speaking, the differences are much more pronounced for mobile phone usage than for Internet use. Once set on equal footing in terms of employment and education, women seem to embrace mobile voice communication quite a bit more enthusiastically than men.

Table 2: Percentage of man/women that use the Internet and own a mobile phone in Latin America; place of Internet usage, Internet use frequency.

|  |                          |       | Chile 2006  | Brazil 2005 | Uruguay 2006 | Mexico 2007 | Paraguay 2007 | El Salvador 2006 | Costa Rica 2005 | Dominican Rep. 2005 | Panama 2007 | Honduras 2007 | Nicaragua 2006 | Ecuador 2006 |
|--|--------------------------|-------|-------------|-------------|--------------|-------------|---------------|------------------|-----------------|---------------------|-------------|---------------|----------------|--------------|
| Overall ICT inequalities   | Internet use             | Men   | <b>39.6</b> | <b>22.0</b> | <b>30.5</b>  | <b>24.3</b> | <b>11.3</b>   | <b>5.6</b>       | <b>23.4</b>     | <b>17.1</b>         | 22.8        | 9.7           | 11.6           | <b>7.9</b>   |
|  |                          | Women | 35.1        | 20.2        | 28.3         | 20.6        | 11.1          | 4.6              | 20.8            | 14.7                | <b>24.5</b> | <b>10.2</b>   | <b>11.9</b>    | 6.6          |
|  | Mobile use               | Men   | <b>54.2</b> | <b>38.2</b> | n.a.         | n.a.        | n.a.          | n.a.             | <b>35.0</b>     | 56.6                | 45.0        | <b>26.1</b>   | 40.9           | <b>41.6</b>  |
|  |                          | Women | 53.8        | 35.4        | n.a.         | n.a.        | n.a.          | n.a.             | 30.9            | <b>57.4</b>         | <b>46.1</b> | 23.6          | <b>42.1</b>    | 34.8         |
| Men and women actively working                                     | Internet use             | Men   | 31.0        | 22.8        | 30.9         | 21.0        | 10.6          | 4.6              | 24.0            | 17.0                | 21.1        | 8.9           | 10.7           | 7.3-         |
|  |                          | Women | <b>36.6</b> | <b>28.5</b> | <b>37.3</b>  | <b>25.8</b> | <b>15.1</b>   | <b>5.7</b>       | <b>30.4</b>     | <b>24.7</b>         | <b>37.2</b> | <b>15.4</b>   | <b>15.1</b>    | <b>8.2-</b>  |
|  | Mobile phone             | Men   | 68.9        | 47.0        | n.a.         | n.a.        | n.a.          | n.a.             | 44.2            | 62.5                | 53.7        | 41.3          | 49.2           | <b>49.0</b>  |
|  |                          | Women | <b>73.1</b> | <b>50.6</b> | n.a.         | n.a.        | n.a.          | n.a.             | <b>46.8</b>     | <b>71.9</b>         | <b>68.3</b> | <b>47.6</b>   | <b>56.4</b>    | 45.2         |
| Men and women attending educational establishment                  | Internet use             | Men   | 70.2        | 35.6        | 49.8         | 39.2        | 19.9          | 11.5             | <b>35.8</b>     | <b>32.6</b>         | 42.4        | 16.9          | 19.1           | <b>26.8</b>  |
|  |                          | Women | <b>70.3</b> | <b>36.2</b> | <b>53.1</b>  | <b>41.2</b> | <b>23.8</b>   | <b>12.6</b>      | 35.5            | 29.6                | <b>48.5</b> | <b>18.8</b>   | <b>22.0</b>    | 26.1         |
|  | Mobile use               | Men   | 39.1        | 32.5        | n.a.         | n.a.        | n.a.          | n.a.             | 29.4            | 60.7                | 37.4        | 13.6          | 37.7           | 58.9         |
|  |                          | Women | <b>44.2</b> | <b>39.9</b> | n.a.         | n.a.        | n.a.          | n.a.             | <b>33.6</b>     | <b>66.8</b>         | <b>49.7</b> | <b>17.0</b>   | <b>41.8</b>    | <b>60.5</b>  |
| Place of Internet usage, given that the person is actively working | At home                  | Men   | 14.3        | 11.7        | 13.6         | 7.9         | 3.3           | 1.4              | 7.9             | 3.8                 | 6.7         | 1.9           | 0.7            | n.a.         |
|  |                          | Women | <b>16.4</b> | <b>14.2</b> | <b>16.4</b>  | <b>10.2</b> | <b>4.4</b>    | <b>1.5</b>       | <b>9.4</b>      | <b>5.5</b>          | <b>11.5</b> | <b>2.9</b>    | <b>0.8</b>     | n.a.         |
|  | At work                  | Men   | 14.5        | 14.8        | 15.4         | 9.8         | 4.6           | 2.0              | 12.3            | 7.8                 | 9.8         | 3.8           | 4.3            | n.a.         |
|  |                          | Women | <b>18.1</b> | <b>17.8</b> | <b>18.3</b>  | <b>12.9</b> | <b>5.1</b>    | <b>2.8</b>       | <b>15.5</b>     | <b>13.2</b>         | <b>19.9</b> | <b>6.3</b>    | <b>6.6</b>     | n.a.         |
|  | Communal public access   | Men   | 0.3         | 1.6         | 0.5          | <b>0.8</b>  | n.a.          | 0.1              | 0.1             | 1.7                 | 0.7         | 0.01          | 0.0            | n.a.         |
|  |                          | Women | <b>0.3</b>  | <b>2.3</b>  | <b>0.8</b>   | 0.6         | n.a.          | <b>0.01</b>      | <b>0.1</b>      | <b>1.2</b>          | <b>1.3</b>  | <b>0.01</b>   | <b>0.1</b>     | n.a.         |
|  | Commercial public access | Men   | 6.9         | 4.2         | 12.3         | <b>7.0</b>  | 3.5           | 0.9              | 9.3             | 7.1                 | 6.9         | 5.7           | 5.8            | n.a.         |
|  |                          | Women | <b>7.6</b>  | <b>4.3</b>  | <b>14.9</b>  | 6.9         | <b>5.8</b>    | <b>1.0</b>       | <b>12.1</b>     | <b>7.5</b>          | <b>10.3</b> | <b>10.1</b>   | <b>7.7</b>     | n.a.         |
|  | Other person's home      | Men   | n.a.        | 6.2         | 2.6          | 0.2         | 0.2           | <b>0.01</b>      | 1.1             | 4.9                 | 1.1         | n.a.          | <b>0.2</b>     | n.a.         |
|  |                          | Women | n.a.        | <b>7.4</b>  | <b>2.8</b>   | <b>0.4</b>  | <b>0.5</b>    | <b>0.01</b>      | <b>1.2</b>      | <b>5.7</b>          | <b>1.5</b>  | n.a.          | 0.1            | n.a.         |

Source: own elaboration, based on OSILAC, 2009.

These results seem to indicate that women are the more enthusiastic ICT users. However, one could argue that this tendency originates in the fact that women are more likely to be forced to use computers at work for unsophisticated and repetitive secretarial tasks (e.g. Kaplan, 1994). In this case, force, not enthusiasm would be the reason for our results. Saying it very bluntly, the argument would be that men at construction sites do not need Internet access, while female secretaries are forced by their employers to execute trivial typing jobs and routine office activities, such as banal word processing and spreadsheet work. This general tendency could also affect ICT-enthusiasm in school, since girls and boys often already anticipate their future job. While this sounds like a possible hypothesis, this argument cannot explain the detected differences in mobile phone usage. Besides, as shown by the lower rows in Table 2, working women do not only access the Internet when forced to do so by their employers in their working environment, but women are also more active online users at home, at public access centers or commercial cyber cafes, and even at other people's homes. Continuing with our example of Brazil, Table 2 confirms that more working women use the Internet at their job than men (14.8% to 17.8%), but at the same time more women also go online at home (11.7% to 14.2%) at a communal access center (1.6% to 2.3%), a commercial public access center (4.2% to 4.3%) or at the home of family and friends (6.2% to 7.4%). While ICT access at work might still have a catalyzing role, it can be seen that working women also make use of their digital skill outside the working environment. Rather than being forced to ICT usage against their will by an external force, it seems that women naturally enjoy the use of digital communication wherever they get the opportunity to do so.

## **Women and ICT in Africa**

Let us now compare uncontrolled and controlled usage rates in Africa (see Table 3). Sample sizes are much smaller in these surveys and ICT usage rates in Africa are lower, making it more difficult to detect differences. While all results of the weighted samples turn out to be significant (weighted stratified samples with  $p < .01$ ), they are less robust than the ones from Latin America. Having said this, the general tendencies are the same. In agreement with the traditional findings of literature, the overall correlation between gender and ICT usage shows that in 11 of the 13 countries, a larger percentage of men use the Internet than women (with the exception of Rwanda and Tanzania, in which women already represent the larger share). In Kenya, for example, one of the larger and

technologically most advanced African countries of our sample, 21.1% of all men have been online in 2007/8, while only 11.5% of all women use the Internet. 56.0% of all men use a mobile phone, versus only 46.9% of all women.

Notwithstanding, the following rows of Table 3 show that, in general, African women are also less literate<sup>10</sup> (in Kenya 77.2% of men to 68.0% of women), and that fewer women are actively working or studying (employed, self-employed or full-time student) (81.4% of Kenyan men to 49.9% of women). Women also have less income (29.8% of all Kenyan men belong to the top 25% income group of the country, while only 16.6% of all women do).

On the basis of these characteristics, a new group was created. We will refer to it as “women on equal footing”, simply for the sake of giving it a name. In this group we only consider men and women who are literate, are actively working or studying and who belong to the top 25% income group<sup>11</sup>. Controlling for these three inequalities, we can see that the gender divide disappears in most African countries for women “on equal footing”. In the case of Kenya, the divide in Internet usage is erased at 29.7% for both men and women, while women on equal footing turn out to be more active mobile phone users (90.0% to 92.7%). When placed on equal footing, the ratio of women versus men turns around for Internet usage in four of the 13 analyzed countries (Namibia, Ethiopia, Mozambique, Senegal). For another six countries, men continue to use the Internet more, but the relative difference diminishes in all cases (South Africa, Benin, Botswana, Ghana, Uganda, Cote d’Ivoire). For example, in South Africa, in the uncontrolled environment, the share of men online is almost twice as large (20.2% of men to 11.3% of women), while it shrinks to a difference of merely five percent for men and women on equal footing ( $39.9/37.7 = 1.05$ ).

This observed change in tendency is again much more pronounced for mobile phone usage. In nine of the 13 countries, these controls turn the inequality around. With the exception of Senegal and Tanzania, women on equal footing tend to embrace mobile telephony more than men.

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<sup>10</sup> Literacy was defined by including all respondents that claimed to be able to read the newspaper easily and to write a letter easily.

<sup>11</sup> In the case of Africa it is necessary to focus on this high-income group of the top-25%, since income levels in general are relatively low (in absolute terms) and ICT are tradable goods with prices levels that are only accessible to segments that reach a certain absolute level of income (see Hilbert, 2010).

Table 3: Percentage of man/women that use the Internet and own a mobile phone; literacy, working and income inequalities; in Africa 2007/08.

|                                |                          |       | Kenya | Namibia | Ethiopia | Rwanda | Mozambique | Senegal | Tanzania | South Africa | Benin | Botswana | Ghana | Uganda | Cote d'Ivoire |
|--------------------------------|--------------------------|-------|-------|---------|----------|--------|------------|---------|----------|--------------|-------|----------|-------|--------|---------------|
| Overall ICT inequalities       | Internet use             | Men   | 21.1  | 11.2    | 0.9      | 1.8    | 1.1        | 14.4    | 1.9      | 20.2         | 11.9  | 8.1      | 7.9   | 10.1   | 3.7           |
|                                |                          | Women | 11.5  | 7.2     | 0.4      | 2.1    | 0.9        | 6.7     | 2.3      | 11.3         | 5.3   | 4.0      | 3.2   | 4.0    | 1.1           |
|                                | Mobile use               | Men   | 56.0  | 53.3    | 3.7      | 11.8   | 21.9       | 55.1    | 26.2     | 56.3         | 37.9  | 42.5     | 60.7  | 59.4   | 26.3          |
|                                |                          | Women | 46.9  | 45.4    | 2.5      | 7.5    | 32.4       | 26.2    | 17.6     | 64.9         | 20.5  | 37.9     | 57.2  | 58.9   | 12.2          |
| Real world inequalities        | Literate                 | Men   | 77.2  | 56.2    | 33.5     | 47.1   | 38.9       | 33.4    | 72.5     | 75.9         | 42.0  | 45.1     | 49.1  | 77.5   | 49.9          |
|                                |                          | Women | 68.0  | 58.5    | 26.5     | 40.0   | 23.5       | 19.9    | 67.7     | 74.4         | 21.2  | 38.0     | 39.8  | 72.5   | 25.2          |
|                                | Actively working/student | Men   | 81.4  | 58.3    | 93.0     | 79.4   | 86.6       | 84.4    | 77.5     | 66.4         | 94.0  | 86.7     | 89.0  | 64.8   | 87.5          |
|                                |                          | Women | 49.8  | 42.5    | 32.3     | 62.8   | 35.8       | 53.6    | 53.9     | 38.5         | 49.7  | 51.6     | 80.7  | 43.4   | 47.0          |
|                                | Top 25% income           | Men   | 29.8  | 34.2    | 50.1     | 30.5   | 27.2       | 44.4    | 39.2     | 37.0         | 38.3  | 32.6     | 31.3  | 34.5   | 32.2          |
|                                |                          | Women | 16.6  | 17.9    | 10.7     | 21.0   | 15.2       | 9.3     | 20.9     | 17.4         | 14.5  | 9.0      | 19.0  | 21.1   | 10.6          |
|                                | Equal footing            | Men   | 25.3  | 21.4    | 13.9     | 16.5   | 13.8       | 18.1    | 25.1     | 28.5         | 18.1  | 14.8     | 15.0  | 31.1   | 21.7          |
|                                |                          | Women | 13.6  | 12.2    | 4.4      | 8.0    | 2.7        | 3.0     | 10.5     | 12.8         | 3.8   | 3.9      | 8.1   | 17.8   | 6.3           |
| Men and women on equal footing | Internet use             | Men   | 29.7  | 26.9    | 3.8      | 6.2    | 2.8        | 31.0    | 4.0      | 39.9         | 27.6  | 23.9     | 26.7  | 23.9   | 13.5          |
|                                |                          | Women | 29.7  | 37.8    | 6.3      | 7.6    | 14.2       | 37.4    | 12.6     | 37.9         | 26.9  | 17.5     | 11.7  | 17.5   | 7.4           |
|                                | Mobile phone             | Men   | 90.0  | 90.3    | 18.7     | 39.9   | 57.7       | 91.1    | 56.4     | 89.9         | 86.9  | 84.4     | 82.3  | 84.4   | 62.6          |
|                                |                          | Women | 92.7  | 93.1    | 34.3     | 43.4   | 92.5       | 87.9    | 47.8     | 94.8         | 95.9  | 94.9     | 94.7  | 94.9   | 71.4          |

Source: own elaboration, based on Research ICT Africa, 2008.

## How do men and women use the Internet

As seen during the literature review, studies from developed countries reported that men and women use the Internet for different ends, which can lead to diverse definition of the digital divide. Let us now take a look at the kind of online services used in Latin America. This is of particular interest because we have already seen that women welcome the use of digital tools; therefore, the kinds of services they use might give us hints about possible digital opportunities for women (Table 4). The first row confirms the previously mentioned finding from developed countries that men seem to be more frequent online users than women. This accounts for Chile, Uruguay, Costa Rica, Dominican Republic and Nicaragua, while in Mexico and Honduras more women tend to be online every day. When evaluating these statistics, we have to remember that usage frequency does not tell us anything about the length of each session. Longer sessions could by far offset lower



frequency. Unfortunately the available statistics do not give us insight into the overall intensity of usage.

When asked about the kinds of services used online, men reveal that they are much more enthusiastic about using the Internet for entertainment reasons than women. When it comes to using digital channels for education and training, the data is clear that women tend to make much better use of the existing opportunities than men. This is especially encouraging when considering the previously presented results of female disadvantages in terms of literacy and educational attendance throughout the developing world (see Tables 1 and 3). It shows that women already started to make use of the digital opportunities to fight those existing inequalities.

Table 4 also shows that women still do not yet fully exploit many of the other opportunities the digital world provides for them. Women are less enthusiastic about applications of e-business and e-government. The use of e-business and online banking channels could provide women with important steps to improve their financial independence, while e-government services facilitate necessary, but often burdensome interactions with public authorities. The use of the Internet for plain communication purposes provides a mixed picture, as do the statistics on health services. Women from Mexico and Dominican Republic are already using online networks to improve the health conditions for themselves and those close to them. Overall, there still seems to be a large potential to take advantage (or maybe create) adequate online content to improve living conditions for women in Latin America.

Table 4: Frequency of Internet usage; online service used by men and women in Latin America.

|   |                        | Chile 2006   | Brazil 2005 | Uruguay 2006 | Mexico 2007 | Paraguay 2007 | El Salvador 2006 | Costa Rica 2005 | Dominican Rep. 2005 | Panama 2007 | Honduras 2007 | Nicaragua 2006 |             |
|---|------------------------|--------------|-------------|--------------|-------------|---------------|------------------|-----------------|---------------------|-------------|---------------|----------------|-------------|
| Internet users that use daily           | Men                    | <b>39.5</b>  | n.a.        | <b>25.2</b>  | 34.3        | n.a.          | n.a.             | <b>35.8</b>     | <b>36.7</b>         | n.a.        | 33.8          | <b>35.6</b>    |             |
|   | Women                  | 34.3         | n.a.        | 22.6         | <b>34.5</b> | n.a.          | n.a.             | 33.1            | 30.1                | n.a.        | <b>34.2</b>   | 29.0           |             |
| Given that the person uses the Internet | Entertainment          | <b>Men</b>   | <b>54.7</b> | <b>74.1</b>  | <b>49.5</b> | <b>19.9</b>   | <b>11.0</b>      | <b>5.7</b>      | <b>51.5</b>         | <b>60.7</b> | <b>4.9</b>    | <b>41.7</b>    | <b>61.8</b> |
|   |                        | Women        | 50.5        | 67.2         | 34.5        | 14.2          | 4.9              | 1.9             | 43.2                | 51.1        | 1.9           | 32.8           | 56.1        |
|   | Education and training | Men          | 12.1        | 68.4         | 41.4        | 41.5          | 39.7             | 53.7            | 58.5                | 67.6        | 1.3           | 60.9           | 58.7        |
|   |                        | <b>Women</b> | <b>12.4</b> | <b>75.0</b>  | <b>46.5</b> | <b>44.9</b>   | <b>49.3</b>      | <b>65.0</b>     | <b>66.8</b>         | <b>72.5</b> | <b>1.8</b>    | <b>63.0</b>    | <b>62.3</b> |
|   | Buying and contracting | <b>Men</b>   | <b>7.3</b>  | <b>16.5</b>  | <b>5.8</b>  | <b>7.2</b>    | <b>2.3</b>       | <b>3.7</b>      | <b>9.9</b>          | <b>10.7</b> | <b>1.4</b>    | <b>5.0</b>     | <b>3.5</b>  |
|   |                        | Women        | 5.5         | 10.8         | 2.6         | 3.3           | 1.2              | 2.5             | 5.7                 | 5.7         | 1.2           | 3.3            | 2.2         |
|   | Online banking         | <b>Men</b>   | <b>7.1</b>  | <b>21.7</b>  | <b>4.6</b>  | <b>2.4</b>    | n.a.             | <b>2.2</b>      | <b>21.8</b>         | <b>14.8</b> | 0.8           | n.a.           | <b>5.3</b>  |
|   |                        | Women        | 5.6         | 16.4         | 3.0         | 1.2           | n.a.             | <b>2.2</b>      | 17.3                | 11.4        | <b>0.9</b>    | n.a.           | 4.3         |
|   | Government interaction | <b>Men</b>   | <b>9.9</b>  | <b>29.4</b>  | n.a.        | <b>3.4</b>    | n.a.             | <b>0.7</b>      | n.a.                | <b>13.2</b> | <b>0.5</b>    | n.a.           | n.a.        |
|   |                        | Women        | 8.9         | 25.5         | n.a.        | 2.3           | n.a.             | 0.01            | n.a.                | 9.2         | 0.2           | n.a.           | n.a.        |
|   | Communication          | Men          | 58.8        | <b>68.8</b>  | 79.0        | 48.4          | 51.8             | <b>18.1</b>     | 73.5                | <b>63.1</b> | 17.9          | 69.6           | <b>77.8</b> |
|   |                        | <b>Women</b> | <b>60.2</b> | 68.5         | <b>81.1</b> | <b>49.5</b>   | <b>55.7</b>      | 13.9            | <b>74.3</b>         | 55.0        | <b>18.4</b>   | <b>71.5</b>    | 77.6        |
|   | Health                 | Men          | n.a.        | n.a.         | n.a.        | 6.3           | <b>1.8</b>       | <b>1.8</b>      | n.a.                | 18.7        | n.a.          | n.a.           | n.a.        |
|   |                        | Women        | n.a.        | n.a.         | n.a.        | <b>8.9</b>    | 0.9              | 1.5             | n.a.                | <b>25.1</b> | n.a.          | n.a.           | n.a.        |

Source: own elaboration, based on OSILAC, 2009.

### A word of caution on the presented statistics

The humorist Mark Twain (1835-1910) has popularized the wisdom that “there are three kinds of lies: lies, damned lies, and statistics”. This does not only apply to the statistical practices of not controlling for confounding variables, such as criticized in this article, but a word of caution is also in order when interpreting the statistics in the presented Tables.

Given the large sample sizes of the weighted household samples, all results turn out to be statistically significant. However, all results are based on stratified samples, meaning that the survey organizers took the sample according to their knowledge about how the population is distributed in a particular country. Once collected, stratified samples are

weighted according to the proportions of the actual society. The answers of one survey correspondent from a more common socio-demographic group might be multiplied with a factor much larger than a person from a minority. This weighting turns a small sample into the representative of a large population. Nevertheless, it also affects significance tests. The theory of significance test is based on random sampling, not on stratified samples that are subsequently expanded. If the weighted number of cases exceeds the sample size, tests of significance tend to be inflated, which is our case. Therefore, even though all our results are statistically significant, meaning that it is very probable that the observed differences between men and women are real and not just due to chance, these tests are inflated.

As a consequence, results that are very close (such as 49.5% to 50.5% or a correlation of 0.008), have to be taken with a large grain of salt, as pure luck of sample drawing might play us a trick here. Given the much smaller sample size in Africa than in Latin America, the Latin American results are more reliable and stable than the African surveys (in the Latin American samples each observation was weighted with hundreds of people on average, while in Africa, factors of thousands were applied). Having said this, differences for one country on the decimal level surely would not make a strong case by itself. However, the consistency of our results across a large number of very heterogeneous societies makes a relatively strong case: even though some results are close and might be influenced by chance, they tend to show the same direction in general. In other words, the presented results should be interpreted as a mutually confirming whole, while specific results for particular countries might be subject to small variations. Particularly close results from one specific country should not be used as a standalone argument and might require more detailed sampling and further analysis.

### ***A small change in mindset can sometimes make a large difference***

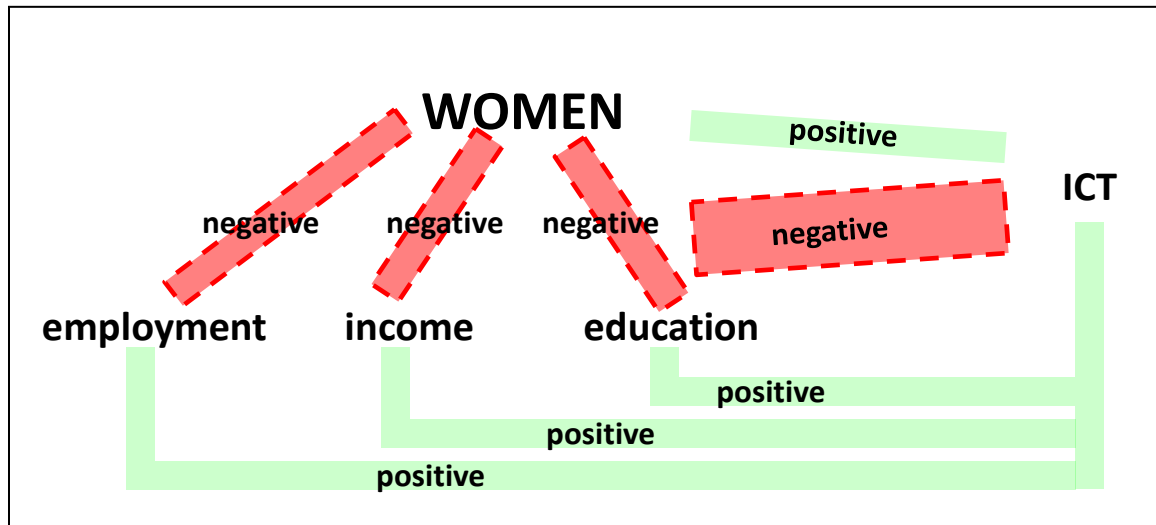
We have analyzed a very heterogeneous group of 25 countries, representing different levels of development, geography, culture and social structure. According to the United Nations Human Development Index (UNDP, 2008), Chile is the most developed country of our sample, reaching a rank 40 of the 179 countries included in the 2008 Index. Mozambique is the least developed with a rank of 175. Independent from these differences, our results have been surprisingly consistent: ICT per se does not have anything on them that might keep women and girls from using it in developing countries.

In fact, when controlled for existing inequalities, it shows that women embrace digital technology more enthusiastically than men. One might be tempted to speculate that women are simply better communicators and that therefore the use of these technologies seems more intuitive for women than for men. Unfortunately, the presented data do not tell us why women use ICT more than men; they just tell us that this is the case.

Notwithstanding, women continue to be discriminated in many other aspects of social life, including employment, literacy and income. These inequalities also throw their shadows on ICT usage. More specifically, being a woman is positively correlated with ICT usage, and negatively correlated with employment, income and education (see Tables 2 and 3). Uncontrolled correlations mix both effects, resulting in the fact that underemployed, underpaid and undereducated women use ICT less than men. Traditional discrimination in the fields of employment, income and education turn the positive correlation between women and ICT into a negative one. At the same time, as shown during the literature review, ICT have the potential to provide access to employment, education and income. Therefore, ICT provide women with a bootstrapping opportunity to pull themselves out of these unfavorable starting conditions. In other words, if woman are provided with ICT, digital tools represent an opportunity for women to fight longstanding inequalities.

The resulting logic is schematized in Figure 1. Traditionally, longstanding inequalities prevent women from accessing ICT, leading to a vicious circle between digital exclusion, unemployment, low income and lacking education. However, once having access to ICT, this vicious circle can be turned into a virtuous circle, whereas the identified positive attitudes of women toward ICT enable them to circumvent and fight existing inequalities.

FIGURE 1: Fighting longstanding discrimination with digital means



Source: author's own elaboration.

This finding is by no means the end, but leads to the question of how to provide more women with access to digital opportunities. For example, Table 2 indicates that communal or commercial public access centers might be a viable option (see also Maeso and Hilbert, 2006). Others have pointed to the need of regulations and incentives to facilitate the actual usage of applications that would favor women, such as legislation to promote telework (see e.g. Boiarov, 2008). Besides, the development of adequate content becomes a major concern, especially in key areas such as education (see e.g. RELPE, 2008).

Summing up, the empirical evidence in this article argues for a re-thinking about women and ICT usage. This rethinking should also affect policy making, which is unfortunately still influenced by the superficial and unsustainable argument that women are technophobic. For example, in the final declarations of the United Nations World Summit on the Information Society (2003-2005), heads of States and governments have recognized “that a gender divide exists as part of the digital divide in society” (WSIS, 2005) and declared a need for “enhancing communication and media literacy for women with a view to building the capacity of girls and women to understand and to develop ICT content” (WSIS, 2003). These statements seem to be based on the idea that women are less digitally capable. Based on the results here presented, this is not at all the case and a change in mindset seems appropriate. These policy statements should rather be reformulated to something along the following lines: “a digital gender divide exists only

as a direct reflection of existing gender-related inequalities and policy actions should make use of the natural communication skills and media capacities of women and their proven embrace of the new digital opportunities to overcome longstanding gender inequalities". Such re-thinking is necessary to create policies and projects that truly allow girls and women to become equal members of an information society, digital society, network society, knowledge society, or simply equal members of society, independent from the forename it may be given.

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