

The Gender Digital Divide in Rural Pakistan: How Wide is it and How to Bridge it?

Karin Astrid Siegmann*

Abstract

While Pakistan's National Information Technology (IT) Policy aims at harnessing the potential of information and communication technologies (ICTs) for development, especially in the underserved rural areas, it ignores the role of existing gender inequalities on the possible benefits of ICTs. We have investigated aspects of the 'gender digital divide' in rural areas of Pakistan in order to enable an evidence-based gender-sensitive revision of the policy as well as ICT-related interventions from which both females and males gain. The study took place in four of the most marginalized rural districts of the country where this divide is likely to be most pronounced. We found mobile phones to be the ICT that is most commonly available in rural Pakistan. Radios and TV sets are the second most widespread technologies in marginalised rural areas. However, mobile sets at hand are largely owned by women's husbands, fathers and brothers, whose permission to make calls is required by a large share of all female respondents. I, therefore, argue that availability and gendered use of ICTs are two different things altogether. Social norms related to women and girls' access to education as well as regulating their mobility prevent them from using ICTs. These norms have to be taken into account in policies and interventions to ensure women and girls' access to and beneficial use of ICTs.

1. Introduction

Travelling through the streets of Karachi, Lahore or Peshawar, one cannot fail to notice the significance that modern information and communication technologies (ICTs) have gained in the lives of Pakistani citizens. While mobile phones in all shapes and brands are

* Holding a Ph.D. in Agricultural Economics from the University of Bonn, Germany, Karin Astrid Siegmann works as a lecturer in Labour and Gender Economics at the International Institute of Social Studies of Erasmus University Rotterdam (ISS), The Hague. During the past years, she has investigated gender dynamics of labour markets influenced by global restructuring. Before joining the ISS, she worked as a research fellow at the Sustainable Development Policy Institute (SDPI) in Islamabad. She is a visiting Fellow, Sustainable Development Policy Institute (SDPI) Islamabad.

now essential items carried by pedestrians, *rikshawaley* and automobilists, colourful billboards tower above the traveller, advertising the latest mobile phone gadget or wireless access to the internet.

The omnipresence of ICTs in Pakistan’s urban spaces has been catalysed by the liberalisation of the ICT sector during the past decade. The establishment of the Pakistan Electronic Media Regulatory Authority (PEMRA) in 2002 served to stimulate the growth of cable TV. A telecommunication Deregulation Policy was issued in the year after and a Mobile Cellular Policy in the year 2004. In order to facilitate the growth of internet connections, all internet service providers were allowed to provide broadband services in the same year. As a result, foreign direct investment (FDI) in ICT-related sectors increased significantly and peaked in fiscal year 2005-06 with a 54 per cent share of total FDI inflows (Federal Bureau of Statistics 2007, p. 43), indicating the keen interest of international ICT providers to serve Pakistani customers.

Table 1: Indicators of ICT penetration in Pakistan, 2007 (million)

Total teledensity ^a	45
TV sets	9
Households with TV sets (%) ^b	54
Households with radio sets (%)	31.7
Computers	2.4
Internet subscriptions	3.5

Notes: ^aTelephone lines per 100 inhabitants. Total teledensity includes fixed, wireless loop lines (WLLs) and mobile teledensities.

^bFigure for 2004-05

Source: *Federal Bureau of Statistics (2007)*

This is reflected in the availability of ICTs in Pakistani households. Teledensity, i.e. telephone lines per 100 inhabitants, be it fixed PTCL, wireless loop lines (WLLs) or mobile phones, rose from 12 to 61 per cent between 2005 and 2009 (Ministry of Finance 2009, p. 216) and internet subscriptions were 3.5 million in 2007 in comparison with 0.5

million in 2000. This is assumed to imply that more than a tenth of the Pakistani population uses the internet, a far higher share than in other South Asian countries (Federal Bureau of Statistics 2007, pp. 54-6). The number of computers has increased ten-fold between 2003 and 2007 and in 2007, more than half of the country's households owned a TV set.

The question is whether these developments have touched the lives of women and men, girls and boys in rural areas as well. While the proclaimed objective of the Government of Pakistan's IT policy is to harness the potential of ICTs for development and focus on ICT education and provision of related infrastructure in rural areas (IT & Telecommunications Division 2000), in 2005, 80 per cent of the ICT-related infrastructure was installed in urban areas (Yasin 2005, p. 10). Another significant, but largely invisible disparity is the gap in access to and use of ICTs between women and men, girls and boys in Pakistan - the 'gender digital divide'. The recently compiled Pakistan ICT Indicators do not provide information on ICT use disaggregated by sex (Federal Bureau of Statistics 2007) and neither does the scattered research on the role of ICTs for development in Pakistan cover gender dimensions (e.g. Gao and Rafiq 2009; Kalim and Lodhi 2002; Mujahid 2002; Perraton 2003; Shafique and Mahmood 2008; Silva and Zainudeen 2007). The only available study on gendered use of telephones in Pakistan finds a significant divide in access to these devices (Zainudeen et al. 2008). This contrasts with an international discourse on the benefits of ICTs for human development (e.g. World Summit on the Information Society 2003, 2005). More specifically, international case studies and policy statements have pointed out the wide range of applications of ICTs for gender equality and women's empowerment (e.g. Gurusurthy 2004; Hafkin and Taggart 2001; Huyer and Mitter 2003; Shaheen et al. forthcoming 2010; UN 2005). In order to enable an evidence-based formulation of gender-sensitive policy and interventions, we have investigated aspects of the 'gender digital divide' in rural areas of Pakistan, where the current gap is likely to be most pronounced. The objective of this paper is therefore to investigate the gender digital divide in rural Pakistan.

Despite repeated policy commitments to strengthen gender equality and women's empowerment¹, the actual gender disparities in Pakistan are wide in regional and international comparison. Only a third of females have access to formal education as compared to half of their male counterparts. The situation in rural areas is particularly grave where the female literacy rate is only 26 per cent compared to 47 per cent for males. Labour force participation amongst women is only half that of men and most of them work as unpaid family helpers in agriculture (Federal Bureau of Statistics 2008). The remaining gainfully employed women workers earn only one-third of the average male income (Federal Bureau of Statistics 2009). Socio-cultural norms that constrain female mobility in order to protect the family's honour limit women and girls' access to public facilities, such as for educational and health purposes as well as business opportunities (Mumtaz 2007, pp. 149-50). The limited interaction with the wider society, compounded by poor educational levels especially in rural areas, is an obstacle in access to information related to health and hygiene as well as regarding business opportunities. Resultantly, Pakistan's Gender Development Index is the lowest in the South Asian region and amongst the bottom thirty in international ranking (UNDP 2009, p. 183).

The specific questions this paper therefore addresses include the kind of ICTs being accessed by men and women and which ICTs are being accessed and utilised by them in rural areas of the country and, if they are, for which purposes. It also explores how the effects of this use are being perceived. As indicated above, these questions are embedded in the broader concern for gender equality in access to resources in deprived rural areas and the role – enabling the reduction of or aggravating existing disparities - modern technology may play therein. Amongst others, we hope to provide a useful input for Pakistan's National IT Policy, which is currently under revision.

¹ Pakistan has ratified the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). Specific policies to promote gender equality have been articulated in the National Plan for Development and Empowerment of Women (2002), the National Plan of Action (1998) and the Government's Poverty Reduction Strategy papers (PRSP) (Finance Division 2009, 2003; World Bank 2005, p. iii). The PRSP is aligned with the Millennium Development Goals (MDGs) and identifies gender equality in educational opportunity as an explicit goal.

The paper is structured as follows. The next section introduces the research methodology and main characteristics of the survey respondents. While section 3 describes the gender gaps in access to and use of ICTs that we identified, section 4 details the main purposes of women and men's use of ICTs and the perceived impact thereof. In section 5, we summarise these findings and draw conclusions for ICT-related policies and interventions.

2. Methodology and survey sample

Measuring the gap

The present study considered both 'old' ICTs, such as broadcasting equipment, and 'new' ICTs, like mobile phones and computers. The devices covered were fixed telephone lines, wireless loop (WL) and mobile phones in the area of telecommunication, radio and both ordinary and cable/satellite TV for broadcasting as well as computer equipment such as computers and internet. In order to answer questions about i) which of these ICTs are accessible for and used by women and men ii) for which purposes ICTs are utilised and iii) how the effects of ICT use are perceived by men and women, a mixed methods study was conducted in rural areas of all four provinces of Pakistan. The distinction made below between ownership, access and use serves the purpose to take into account the gendered shared use of ICTs.

Two villages each were selected in the districts of Batagram (former North-West Frontier Province, NWFP), Bolan (Balochistan), Muzafargarh (Punjab) and Tharparkar (Sindh). The districts were chosen according to extreme case sampling, i.e. the selection of unusual or special cases (Patton 1990, pp. 169-71). The sampling strategy was motivated by the assumption that such extreme cases may be especially enlightening, in particular in the context of directly policy-relevant research. In the present context, we assumed that the selection of rural districts characterised by a greater degree of deprivation in terms of income, education and health may provide a more robust base for policy recommendations intended to narrow the gender digital divide.

From each province, therefore, the district was chosen which ranked lowest on the district-wise Human Development Index (Hussain et al. 2003, pp. 134-7) and where the security situation was sufficiently stable to conduct research. In order to allow us to gauge the impact of liberalisation in the ICT sector beyond the individual level, the selection of villages within each district was guided by the search for two places that were roughly comparable in socio-economic indicators such as location, size and demographic structure, but with only one of them covered by mobile phone network(s). In each village, a questionnaire-based survey² with female and male participants was combined with focus group discussions (FGDs) with groups of six to 12 adult women and girls. The focus on female FGD participants was motivated by the need to give a voice to stakeholders whose situation and interests are poorly represented in related policy discourses in Pakistan. This advantage of FGDs has been emphasized by feminist scholars in particular (e.g. Madriz 2000). Amongst others, such between-methods triangulation may increase researchers' confidence in their results and lead to richer data. It may also enable the researcher to uncover contradictions (Jick 1979, in Johnson et al. 2007, p. 115). Triangulation was not conducted at the level of cases, but at that of patterns (Flick 2004, pp. 181-2), i.e. FGD participants were not systematically selected as a sub-sample of the questionnaire respondents. Questionnaire respondents were selected by random sampling. While the questionnaire focussed on questions regarding access to, use and perceived effects of ICTs as well as possible determinants thereof, it also included indicators of gender (in-) equality and gender norms in the local setting. The FGDs, in addition, looked into benefits and disadvantages of ICTs perceived by the participants, their assumptions about factors influencing women's and girls' access to and use of ICTs as well as into their suggestions for change towards narrowing the gender digital divide. The fieldwork resulted in 535 structured interviews with adult women and men and 32 FGDs, half of which with adult women and half of them with underaged girls, i.e. female youth below the age of 18 years.³ The present paper is largely based on the exploratory analysis of the quantitative data.

² In the following, 'survey' refers to the questionnaire-based structured interviews.

³ In exceptional cases, young women of 21 years took part in the girls' FGDs.

The survey respondents and their households

More than half of the survey respondents fell into the range above 20 and below 40 years of age. Women were slightly older, with one-third of them belonging to the age bracket between 30-39 years in comparison with one fifth of men. Most respondents were married (82 per cent), again, with an even larger share of female respondents being married than men. Almost half of them did not follow any formal education. A small minority of both female and male respondents (around two per cent) mentioned their participation in religious education as a type of non-formal education. Not unexpectedly, given the gender-based disparities outlined above, the situation for women was far worse than for male respondents. Whereas almost two-thirds of women did not access any formal schooling, the share was one-third for men. Gender gaps in education widened with age. The share of male respondents who completed matriculation was more than three times the share of their female counterparts. Whereas the overall levels of schooling for women and men were lowest in Bolan district (92 per cent no formal schooling amongst females and 55 per cent amongst males), the gender gap in education was highest in Batagram (68 per cent no formal schooling amongst females versus 17 per cent amongst males). Resultantly, it is not surprising that Urdu, the national language, is spoken by a sixth of women only. A similar share of male respondents indicated knowledge of English, which commonly included the ability to read the country's official language. Hardly any women in the sample, in contrast, knew English.

On average, households consisted of seven members, with slightly larger households in Muzafargarh district and smaller ones in Bolan. Their livelihoods were largely based on agriculture with the main income sources being wages and (probably to a lesser degree) salaries⁴, crop and livestock production. More than two-thirds of all respondents' households accessed these three sources. The fact that only a thin majority of the respondent households owned land, points to the significance of landlessness in the rural setting. Resultantly, less than half of all households as a whole generated a monthly cash income that had been stipulated as the 2008 minimum wage per month for an individual

⁴ The related survey question did not distinguish between wages and salaries.

worker, namely Rs. 6,000⁵ per month. Average cash incomes were highest in Batagram (Rs. 9,199) and lowest in Bolan and Muzzafargarh (Rs. 7,216 and Rs. 7,252) with greater income inequality in Muzzafargarh.

Electrification is a necessary prerequisite for the use of ICTs: Almost half of the respondents' households were electrified. There was wide variation across districts, though. While the selected districts in Balochistan and Southern Punjab reflected the average, almost all respondents in Batagram district had access to electricity at home, but none of the respondents' houses in Tharparkar were electrified. Respondents' households with access to the electric grid faced extremely irregular supply, though. Half of them experienced electrical power outages of seven (Bolan), 15 (Batagram) and up to 18 (Muzzafargarh) hours during the hot summer months. These power cuts were slightly shorter in winters, but nonetheless significant. Less than two per cent of those respondents' households protected themselves against this volatility with a generator, whereas 23 per cent of them had a stabilizer. These facilities were most common in Batagram district and – besides the Tharparkar households without grid access – not available in Bolan.

Women's status

Besides the gender gaps in education outlined above, the study areas were characterised by large gender disparities in health status. A vast majority of three-fourths of female respondents reported to have experienced illness or injury during the six months prior to the survey in comparison with only a quarter of males.⁶

As mentioned earlier, women's mobility in Pakistan is subject to severe constraints. In the survey, this is reflected by the fact that only 13 per cent of female respondents were allowed to visit a health care provider in their village without company. Outside their village, this share shrunk to six per cent. These restrictions especially for movement within the village are most severe in the age bracket between 20 and below 40 years. For

⁵ In 2008, on average, one Euro equaled Rs. 107.77.

⁶ The social construction of gender identities should be kept in mind in the interpretation of these figures. They may have a bearing on the articulation of illness or injury.

those who required company, this chiefly concerned male household members. In more than two-thirds of all cases this was the husband, followed by the son in 13 per cent of all cases whose company is required for movement (outside the village: husband 73 per cent, son 12 per cent).

Sadly, the study results indicate that women have internalised their marginalised position in society. This can be illustrated by the fact that while most respondents agreed to the statement that men have a natural advantage in the use of technologies, this share amongst women is even higher than amongst men.

3. Gender gaps in access to and use of ICTs

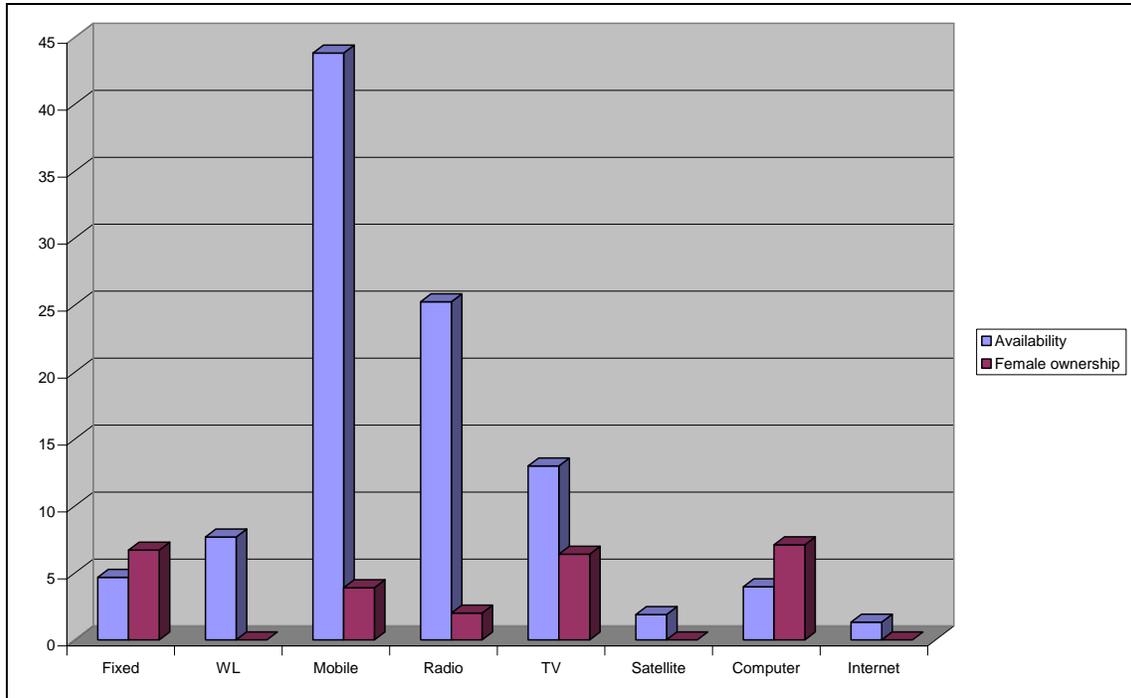
Accessing ICTs

Reflecting their omnipresence in the streets of urban Pakistan, also in the most marginalised rural areas of the country, mobile phones are the most common ICT (Figure 1). In almost half of all surveyed households at least one mobile phone set is available, mirroring the phenomenal growth of mobile connections in the country during the past decade. These sets are more relevant in villages with mobile phone coverage. In villages with network coverage, the share of households holding mobile phones rises to 59 per cent. However, mobile phones may also be useful in areas without network coverage. They might be utilised outside the village, in areas where network signals can be received. In those locations, still little less than a third of all households own mobile phones.

Radios and TV sets are the second most widespread technologies, available in a quarter of and 13 per cent of the surveyed rural households, respectively. Similar to mobile phones, Batagram district has by far the highest share of households equipped with radios (32 per cent), followed by Bolan and Tharparkar (27 per cent). Muzzafargarh is lagging behind with mere 15 per cent of all households. Computers and internet are available in an insignificant proportion of the households.

Figure 1: ICT availability and ownership in marginalised areas of rural Pakistan, 2007

(%)



Note: The percentages for female ownership refer to those households only in which the respective ICT is available.

As pooling and sharing of resources is common and necessary in households in rural Pakistan, the distinction between ICT availability, ownership and use serves the purpose to investigate the shared use of ICTs. Figure 1 also indicates that, even where they are available in their immediate environment, women rarely own ICTs. Husbands, fathers and brothers in the households, for instance, largely possess the mobile phone sets at hand.⁷ This indicates that rather than network coverage and the presence of mobile phones alone, socio-cultural factors also determine whether ICTs can be accessed by female users in rural areas.

Using ICTs

⁷ 'Ownership' is self-defined by the questionnaire respondents. At the minimum, it refers to the authority to grant physical and social access to the ICT.

While fixed telephone lines are relatively rare in the selected rural districts (Figure 1), if available in a household, they are the type of ICT that is used most by women. All women with a PTCL connection in their home also reported using it. This is not always the case for male respondents, possibly due to their easier access to alternatives for telecommunication, especially mobile phones. Men use the mobile phones available in their households with a greater likelihood than women (91 versus 70 per cent). This gap is especially wide in Tharparkar district where 71 per cent of men, but only a fifth of female respondents in households with a mobile phone actually use the device. In a majority of cases no permission is required for the use of telecommunication tools, but wide differences by gender and depending on the type of ICT can be observed: Men rarely need someone else's authorisation, while more than 40 per cent of all female respondents with a mobile phone in their household require the permission of the male owners to make calls. This compares with 22 per cent of female fixed line users. This may bar them effectively from using mobile phones as expressed in this statement of an FGD participant:

“If sometimes, someone who has it [a mobile phone] and is a close relative, we ask them for a call, they say there is no need.” (FGD Women 2, Gaaman)

Besides, mobile phones' availability in households without network coverage is unlikely to benefit women much, given the constraints they face for movement outside the village.

It is plausible that the gender gap in use of mobile phones is related to the fact that more men are owners of sets' as compared to women, which means it is not as binding or a necessity for them to ask other household members for permission for use. In addition, women who participated in FGDs explain these gender differences through reference to social norms, amongst others. Mobile phones, for instance, are regarded as dangerous in girls' hands, in particular. Mothers fear that their daughters will use mobiles to set dates to meet boys and therefore disgrace their families.

“Let me explain why people don't like to give mobiles to young girls. In our area, the girls who were using mobiles, they started talking to boys through mobiles. They fixed a time to meet with the boys and run away from home,

and in our area, it's very bad if someone leaves the home and parents for a boy and people of our area prefer to kill the girl if she runs away with a boy.”
(FGD Women 1, Batagram)

The role of boys in such socially unacceptable use of telecommunication technology is largely ignored – at least no comparable constraints to keep them from making mobile phone calls were mentioned.

The lack of ‘mobile literacy’ is an additional obstacle for women’s use of mobile phones. One respondent from Muzzafargarh district mentioned that:

“ Women don’t even know how to dial a number.” (FGD Women 2, Gaaman)

The lack of access to formal education for more than two-thirds of adult women in the research locations translates into difficulties in using mobile phones for which basic numeracy is required.

Listening to the radio available in the household is more common amongst men, while watching TV is more attractive for female users, both regarding the likelihood of use and its duration. Whereas most men listen to the radio available in their households for up to seven hours per week (average 14 hours), women use audio equipment far less (mean eight, median four hours). In contrast, women watch TV for a slightly longer weekly period as compared to men (mean/median female respondents 14 hours versus 14/9 hours male respondents). The reasons for these differences may be related to contents and/or the language in which the programs are offered. Mostly, no permission is required for the use of these broadcasting devices: No male respondent needs somebody else’s consent to listen to the radio or watch TV. For female users, authorisation is required in 16 per cent (by the husband) and six per cent of all cases, especially in Bolan district. In short, the ‘old’ ICTs of radio and TV combine advantages of physical availability in a relatively large share of households and comparatively easy access in terms of permission for use and understanding of contents for female users. The greater popularity of TV amongst

women may be related to the fact that the TV has the advantage of partially overcoming language barriers through visualisation.

Yet, similar to the perceived risks involved in girls' use of mobile phones, TV has a bad image amongst women:

“TV is supporting a very negative environment. Some TV channels are promoting vulgarity.” (FGD Women 2, Batagram)

It is interesting to note that participants in the FGDs in Batagram expressed the strongest reservations against ICT use by women and girls for socio-cultural reasons, while at the same time, they were most available and utilised in this district.

The widest gender gaps in ICT utilisation exist in the area of computer equipment available at respondents' homes: Whereas 80 per cent of males with a computer present in their household and all men who have internet access at home actually use these devices, this is the case only for 40 and 20 per cent of all related female respondents. However, as indicated above, in the poor rural areas in which this study took place, these facilities are very rare to non-existent, anyway. For internet use, no authorisation is required for either female or male respondents. However, a little less than a third of all female users need permission to be able to utilise their household's computer. This exclusively concerns female respondents in Batagram.

In sum, this implies that while computer equipment is hardly available in marginalised areas of rural Pakistan, the few devices available at home are also of little relevance for female users.

Table 2: ICT use outside the house in marginalised areas of rural Pakistan by respondent’s sex and ICT device, 2007 (%)

	Fixed line	WL	Mobile	Radio	TV	Computer	Internet
Female	2.96	17.78	13.70	4.81	4.81	0.00	0.00
Male	2.64	20.00	27.17	1.89	6.42	1.51	1.13

As indicated in the discussion of mobile phone use, ICTs may be used outside the household, for instance, at relatives’ or neighbours’ homes or in communal places, such as public call offices (PCOs), internet cafes or computer centres. The Government of Pakistan assumes that such public provision of ICTs may help to bridge the digital divide caused by prohibitively high costs of equipment (Federal Bureau of Statistics 2007, p. 5). The survey results show that, to date, this is uncommon, though. Two-thirds of all respondents do not utilise ICTs outside their own household. ICT use outside the home is most widespread in Tharparkar with three-quarters of all respondents answering positively and least common in Muzzafargarh district, with less than a tenth. Once again, gender differences are significant here: Only 28 per cent of all female respondents utilise ICTs away from home, compared to 43 per cent of all men. The statement of a girl from Southern Punjab illustrates this:

“Women never go to a PCO. Only my brothers sometimes go and speak to other brothers. We women can never speak to them, only men can contact.”
(FGD Girls 1, Gaaman)

As hypothesised above, it is likely that part of this gap can be related to the constraints imposed on women and girls’ movements outside the home. Not surprisingly, the ICTs used outside the home chiefly involve tools for telecommunication, such as WL phones and mobile phones. A far larger relative share of male respondents makes calls on mobile phones outside their household (27 per cent as compared to 14 per cent of female respondents).

4. Purposes and perceived impact of ICT use

Purposes of ICT use

For both women and men, the main purpose of using different types of telecommunication tools, be it fixed telephone lines, WL or mobile phones, is networking with family and friends. This holds true in about 90 per cent of all cases and reflects findings from earlier studies (Silva and Zainudeen 2007, p. 9). Telecommunication for business or professional use has a far lower relevance in general and that mainly for male users. Around a tenth of them stated using fixed phone lines, WL or mobile phones for this purpose. While professional use also is the second most important reason for female users of telecommunication devices, it is relevant for users of mobile phones only (six per cent of female respondents using mobile phones).

Broadcasting equipment, in contrast, is utilised chiefly for information access and entertainment. The purposes for use of radio and TV differ significantly, though. Whereas 41 per cent of radio users wish to access information and 28 per cent of them listen to it for leisure, the latter is the case for more than half of all those watching TV. These reasons also differ by gender. Access to information through the radio motivates about a third of female users in comparison with almost half of all men. Use of broadcasting tools for relaxation, on the other hand, is more far important for women than men. Almost 40 per cent of all male respondents' answers refer to uses of TV for leisure, while this share rises to three-quarters for women.

Educational purposes are most important in the use of computer equipment. About half of all computer users report education and skill enhancement to be their primary objectives and a little more than a tenth wish to access information through their use of computers. The internet is seen as both a source of information and of relaxation: While two-thirds of its users mention access to information as their primary motive, the remaining third browse the internet for relaxation. This reflects mainly the views of male respondents as the few female users did not respond to this question.

Perceived impact of ICT use

With only slight gender differences, most ICT users perceive changes in their situation resulting from utilisation, especially WL and mobile phones seen as bringing about change.

The impact of ICT use perceived by women and men in the research locations commonly reflects its purpose. Whereas men, for instance, stress access to information and benefits for their work through the use of telecommunication devices, women appreciate easier communication with their family members.

“When I miss my parents, I just call them and talk to them and feel happy.”

(FGD Girls 1, Batagram)

The quote above illustrates that the opportunities offered by modern telecommunication tools are particularly important in the patri-local setting of Pakistan where women and girls commonly move to their husband’s family after marriage.

Not surprisingly, the perceived impact of watching TV or listening to the radio mainly relates to information access and entertainment. Despite the negative image that TV has in rural NWFP in particular, this woman, for example, who participated in a FGD in Batagram, appreciated political information through TV:

“... By watching news, I got information how bad the situation in our country has been for the, I think, past two years, but now the situation is getting worse. You can ask where I got all this from, only from the TV.” (FGD

Women 2, Batagram)

Female respondents also mention educational effects, such as learning about child health or cooking, and appreciate radio programs in local languages.

5. Summary and conclusions

Key findings

The overview of study results on the gender digital divide in rural Pakistan highlights that availability and gendered use of ICTs are two different things altogether. While mobile

phones are the ICT that is prevalent in almost half of all households even in the most marginalised districts in the country, this does not imply that they are easily accessible to and used by women and girls. Even high mobile phone penetration is insufficient to enable women and girls to telecommunicate because permission is often required for making phone calls, the necessary mobility to receive network signals is restricted for women and the use of mobile phones as well as of other ICTs by women and girls carries a negative stigma. Besides, the wide gender disparity in access to education forms an obstacle in using ICTs more generally. The negative perceptions women and girls have of their technological skills heighten these hurdles.

While, so far, computers and internet access have hardly reached poor rural areas, if available in the household, the gender gap in use of ICTs is widest in case of such computer equipment. The 'old' ICTs of radio and TV, on the other hand, combine the advantages of physical availability and comparatively easy access for females.

Accessibility has a strong socio-cultural side to it. In case of broadcasting equipment, it implies, amongst others, that permission for use is largely not required and that contents are understandable and attractive.

*Closing the gender gap*⁸

These findings need to be kept in mind for the ongoing revision of the National IT Policy as well as for public and private stakeholders' interventions for women's empowerment through ICTs more generally. The current IT policy focuses on broad penetration with ICT-related infrastructure as the main path to make the potential of ICTs available for the development of rural Pakistan (IT & Telecommunications Division 2000). While encouraging special efforts to train and induct women in the ICT sector, it does not refer to gender differences in access to and use of ICTs. The policy, therefore, implicitly assumes gender-neutral technologies. In a similar spirit, the ICT Indicators compiled by the Government of Pakistan's Statistics Division equate penetration of specific ICTs with accessibility to the population (Federal Bureau of Statistics 2007, p. 11) and relate a

⁸ This sub-section is partially based on Siegmann (2009).

digital divide to dissimilar access to high performing technology, both in terms of the availability of technologies and their costs (Ibid. p. 5).

The present results contradict these assumptions. While the gender digital divide is wide in marginalised areas of rural Pakistan, the findings reported above highlight that policies and interventions aiming to use ICTs for human development need to go beyond the provision of technological hardware. Social norms have been identified as crucial factors determining women and girls' access to and use of ICTs. They need to be addressed if universal access to ICTs including rural areas of the country is the Government of Pakistan's objective. Control over technology in the form of ownership, mobility restrictions and other cultural constraints for females, such as their difficulties in accessing schooling, have to be taken into consideration in ICTs for development.

Based on the results presented above, broadcasting equipment apparently scores well in these areas. Research across Asia (e.g. ISIS International 2007) and practitioners' experience⁹ have shown how, for instance, radio programs can give a voice to women's concerns and can feature women as producers of media content in a male-dominated domain. Therefore, public and private organisations with the aim of promoting women's empowerment should not neglect 'old' ICTs such as radio and TV in their efforts to harness the potential of ICTs for greater gender equality. If public media bodies, such as the Pakistan Broadcasting Corporation or Pakistan Television, or private electronic media join hands with non-governmental organisations, media tools with a powerful reach to women and girls in rural areas can be developed. Existing localised programs should be extended to cover more languages and contents of special interest to women.

A lot of attention of public bodies and private actors in Pakistan is being paid to the provision of computers and internet access to rural areas. Yet, these 'new' ICTs, so far, hardly have any relevance for female users. This is largely due to the multiple hurdles they face in accessing them outlined above. If this situation is to be redressed and the promotion of wide-spread use of ICTs is a policy objective as expressed in the current

⁹ See, for instance, the experience of UKS Foundation, Islamabad at <<http://www.uk sresearch.com>>

National IT Policy and the MDGs, then especially these socio-cultural norms as crucial factors determining women and girls' access to and beneficial use of ICTs have to be taken into account. This means, for example, that projects initiated with support of the Universal Services Fund (USF), which was established by the Government to support the development of telecommunication services in un-served and under-served areas throughout the country, need to consider the social perception of spaces utilised for telecentres. The experience of Dareecha, a project of the National University of Computer and Emerging Sciences, Lahore, for ICT literacy for rural school students shows that, for instance, girls' schools are considered decent and safe places for girls' learning and practising on computer equipment, while the present study indicates that PCOs are perceived as no-go-areas for many rural women.

Besides, initiatives need to be taken at the policy level. The implicit assumption of the current IT policy is that the provision of related infrastructure and technical training are the main steps necessary to harness ICTs' potential for human development. The research findings outlined here indicate that this is not sufficient, especially if the goal is to reach out to the female population in rural areas. The establishment of a gender working group in the IT Ministry can ensure that these socio-cultural concerns are being taken into account. The discourse on development benefits of ICTs in Pakistan is currently dominated by an engineering perspective. Progress in bridging the gender digital divide in Pakistan should be monitored with the support of gender-disaggregated IT indicators to be compiled by the Federal Bureau of Statistics, focusing on access and use, rather than technical infrastructure alone.

It may be useful to close on the cautious note that ICTs alone are not a silver bullet for development. Major challenges, such as the livelihood insecurity pervasive in rural Pakistan, the lack of physical infrastructure and facilities for education and health care, have to be addressed first, before ICTs can prove beneficial for human development in rural Pakistan in general and for greater gender equality in particular. The quote below illustrates this in insistent manner:

“My daughter, we are very poor people and we do not have such kind of things. We are worried about flour, not about phones. We bring flour from Mithi. There is no comfort in our lives. [...] It would be useless to have mobile phones without other facilities.” (FGD Women 1, Malahnor Vena)

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