

Who's got the phone? Gender and the use of the telephone at the bottom of the pyramid

Ayesha Zainudeen, Tahani Iqbal, and Rohan Samarajiva

LIRNEasia

The final, definitive version of this paper has been published in *New Media and Society*, 12/4, June/2010 by SAGE Publications Ltd, All rights reserved. © A. Zainudeen, T. Iqbal and R. Samarajiva

Who's got the phone? The gendered use of telephones at the bottom of the pyramid ¹

Abstract

Much has been said about women's access to and use of the telephone. Many studies conclude that a significant gender divide in access exists particularly in developing countries. Women are also said to use telephones in a different manner from men –making and receiving more calls, spending more time on calls, and using telephones primarily for 'relationship maintenance' purposes, in contrast to men. However, much of this research on usage patterns is based on small-sample studies in affluent developed countries. The article provides evidence that a significant gender divide in access to telephones exists in Pakistan and India, to a lesser extent in Sri Lanka, but is generally absent in the Philippines and Thailand. This article also challenges some of the findings of studies which claim that women's and men's use is fundamentally different, shedding light on women's access to and use of telecom services at the bottom of the pyramid (BOP) in five Emerging Asian markets.

Keywords

Telecommunication, bottom of the pyramid, gender, women, gender divide, digital divide, Asia, India, Pakistan, telecom access

1.0 Introduction

Much of the existing literature suggests that a ‘gender divide’ in terms of information and communication technology (ICT) access exists, particularly in developing countries. Further literature, based primarily on small-sample studies in affluent developed countries, suggests that there are significant differences in the ways in which men and women use ICTs. For instance, women are said to use telephones for longer-duration calls and to use them primarily for what can be broadly termed ‘relationship maintenance’ – or keeping in touch – while men make fewer calls, spend less time on the phone and use them primarily for ‘instrumental’ purposes – essentially, to attain an objective.

This article investigates the existence of a gender divide at the ‘bottom of the pyramid’ (or BOP; Prahalad, 2004) in Pakistan, India, Sri Lanka, the Philippines and Thailand, concluding that such a divide does exist in the Pakistani, Indian and Sri Lankan BOP, but not the Filipino or Thai BOPs. It is based on results from an 8,600+ sample survey carried out in these countries in 2006. Using diary data from the same survey, this article also investigates the gendered use of telephones, i.e. the difference between telephone use between males and females, at the BOP, concluding that there are few differences in their use, contrary to the evidence from the developed world.

Section 2.0 reviews the existing literature on gender differences in telecom access and use. Section 3.0 explains the study design and methodology. Section 4.0 is divided into three sub-sections: the first deals with access to ICTs by men and women at the BOP in the five countries; the second deals with telecom usage patterns of men and women at the BOP in the said countries; and the third looks specifically at the findings from the Pakistani BOP, where a larger divide exists. The policy implications arising from this divide are discussed briefly in Section 5.0.

2.0 Literature review

Many studies have claimed that women have lower access to ICTs, compared to men; this is what has come to be known as the 'gender divide' in ICTs (Primo, 2003 and Gurumurthy, 2004). It has been considered one of three facets of the broader 'digital divide' that exists, the other two being in terms of technology and content (Gurumurthy, 2004). The benefits of access to and use of ICTs in terms of economic growth and development have been widely documented (Hardy, 1980; Cronin et al, 1991; Cronin et al., 1993; Parker and Hudson, 1995; Roeller and Waverman, 2001; Waverman, Meschi and Fuss, 2005; Ovum, 2006); there is much concern that these benefits are only accruing to a subset of men in affected societies, given the disparities in access; if this is so, then women can potentially become increasingly marginalized 'from the economic, social, and political mainstream of their countries and of the world' (Hafkin and Taggart, 2001, p. 7).

Ling reports findings from a study carried out in Norway where it was found that men had greater access to telephones when mobiles were considered, but when fixed phones were considered, men and women had equal access (1998).

The gender divide, as with the digital divide, has been found to be especially large in low income countries, where ICT penetration levels are also low. According to Hafkin and Taggart (2001; p. 14), in 2000, 22 percent of all Internet users in Asia, 38 percent of those in Latin America, and six percent of Middle Eastern users were women. The low levels of access among women are said to be fueled in part by low levels of education and literacy, and reinforced by poverty; additionally several other factors contribute to low levels of access among women, including the lack of financial resources, the lack of skills (ICT as well as language), cost, location and culture (Hafkin and Taggart, 2001). In many countries, female Internet users are said to be limited to a small group of educated urban elite (Primo, 2003).

Research has shown that even in high Internet penetration countries such as Korea women's access to the Internet and email is lower than that of men. In a survey carried out in Korea in 2001, 100 percent of the men used ICTs while only 71.8 percent of the women did (United Nations Division for the Advancement of Women, ITU and UN ICT Task Force Secretariat, 2002). However, The Pew Internet & American Life Project (2000, May) reported that in America the number of women using the Internet has been increasing steadily, and by 2000, had caught up with the number of men using the Internet.

The extent of the gender divide also varies depending on the ICT under consideration. A study of the impacts of ICTs on rural livelihoods in the state of Gujarat in India (as a part of a larger study involving two other African countries) found significant differences in the use (access) of two kinds of telecom facilities between men and women. In Gujarat, men used mobile phones more frequently than women. Men also used public kiosks more frequently than women, and they also traveled to access phones more often. The authors suggest that social norms and financial considerations probably have some impact in the differences found (Souter et al., 2005).

Huyer et al. (2006) report a study carried out in 2004 by the Gender and ICT Network (Régentic) in the less affluent countries of West Africa, where in accessing ICTs, women faced most obstructions in the form of safety and security issues of access points and time; that they were technophobes also played a role in hindering their access to ICTs. Interestingly, men frequently felt threatened by women's use of cell phones and the Internet; the new freedoms afforded to women were perceived as destabilizing to relationships. In many cases men monitored the cell phone and Internet use of their partners.

In terms of actual usage of the telephone by women, the literature is less extensive; much of the literature is based on small sample surveys, conducted in affluent countries.

A widely cited study centers on use by 200 women aged 16 to 87, from a variety of different socioeconomic and geographical backgrounds in Australia; the study² concluded that distinctive feminine patterns with regard to the use of the telephone exist. It was observed that women, unlike men, used telephones primarily for *relationship maintenance* (or *intrinsic*) purposes. On the whole, the study claimed to establish the existence of

‘a pervasive, deeply rooted, dynamic feminine culture of the telephone in which kin keeping, caring, mutual support, friendship, volunteer and community activity play a central part and which, through its ongoing and widening functioning, contributes substantially to women’s sense of autonomy, security, participation and well-being’ (Moyal, 1992; p. 67).

However, the research design was flawed as it did not study men, and therefore could not make legitimate claims about male-female differences in telephone use.

Fischer’s (1992) survey of the telephone in America supported the claim that women made use of the telephone on a much larger scale than men did. This finding was arrived at through a review of several other studies carried out by research and corporate institutions in Australia, Canada, England, France, and USA. Although some of the studies found that men shied away from phones and had women make business calls on behalf of them, women’s calls were still found to be more social than transactional.

In their study, Claisse and Rowe listed an extensive classification based on telephone call ‘actions’ and ‘aims’, and stated that there were at least 176 situations in which telephone calls could be made (1993).. They found that telephone habits among men were more functional (to attain an objective) compared to women whose phone calls were more relational (to keep in touch with people).

In 1996, Smoreda and Licoppe carried out a survey of 317 French homes to investigate the correlation between observed call durations and the gender of callers and

receivers. The sample was made up of 308 adult females and 245 adult males selected randomly from telephone directories from three regions in France. Respondents were profiled according to their usage patterns (ascertained through billing records for over four months). The study concluded that the presence of a woman in a call generally prolongs it; furthermore, calls initiated by a woman are a minute longer on average than those initiated by a man; additionally, the topic of communication (personal or professional) also depended on the gender of the caller as well as the receiver (interlocutor) (Smoreda and Licoppe, 2000).

Women were seen to have longer conversations and use the telephone for a broader range of social interactions than men in the Norwegian study mentioned earlier; women sought the social contact provided by telephones but were less interested in the more advanced applications, while the opposite was found among the men studied (Ling, 1998).

The West African study reported by Huyer et al. (2006) also confirmed that women's use of mobile phones and the Internet was mostly for personal and social reasons; men were said to use these ICTs for professional or work-related reasons.

Although, as mentioned earlier, the number of female Internet users in America was on par with that of men by 2000, men were actually found to go online more frequently than women. The Internet findings also reinforced the claim that men use ICTs for 'functional' reasons than for 'relational' reasons (The Pew Internet & American Life Project, 2000, May). Social roles and gender identities influence the different levels of use of ICTs between males and females. Women are more likely to be based at home and involved in relationship maintenance while men are more likely to be involved in business transactions and therefore their use of telephones and other ICTs differ (Smoreda and Licoppe 2000). Rakow states that women use telephones largely for maintaining relationships since this is an integral part of their responsibilities (1992). Rakow also claims that women's telephone use 'fits into the appropriate spheres of activity and interests designated for women...taking responsibility for

the emotional and material needs of husbands and children, the elderly, the handicapped, the sick and unhappy'. In addition, women are said to be more intimate, expressive and open to conversation. They are reported to disclose more than men during conversations (Dindia and Allen 1992; Dolgin and Minowa 1997) and can even establish 'close, reflective and warm communication in telephone talk with women whom they have never met' (Moyal 1992). Furthermore, women and men are purported to have different network compositions and network sizes – women's personal networks are said to include a larger number of kin as well as more types of kin than men. Women's roles are therefore generally centered on sustaining close relationships with family and friends (Moore 1990).

In contrast, men are said to use the telephone less, make calls of shorter duration and call primarily for work purposes. Gender stereotyping of telephone use that men 'use' and women 'abuse' the instrument has been supported by various studies based on differences in gender characteristics, division of household labor, division of family roles and other factors.

Many of these conclusions are almost universally accepted; however little research has been done on less developed countries, particularly among the lower socio-economic strata. The following sections provide evidence from the Emerging Asian BOP, which challenges some of these precepts.

3.0 Methodology

This paper is based on a study which was conducted in five emerging Asian countries, namely Pakistan, India, Sri Lanka, the Philippines and Thailand in mid-2006. To define the 'bottom of the pyramid' in such a way that would allow for cross-country comparisons, Socio Economic Classification (SEC), a classification commonly used in market research, was used instead of income to define the BOP. SEC classifies people as belonging to groups A to E based on the education and occupational status of the Chief Wage Earner of the household.

For the purposes of this study, the ‘top and middle of the pyramid’ was defined as SEC groups A, B and C, while the BOP was defined as SEC groups D and E. Focus was on the BOP while a small sample of the ‘top and middle of the pyramid’ was surveyed for comparison purposes.

Telephone users, the target group of the study, were defined as those who had used a phone (own or someone else’s; paid for or free-of-charge) during the preceding three months. Male and female telecom users between the ages of 18 and 60, from rural and urban locations were studied.

Quantitative and qualitative research was undertaken. The quantitative module consisted of face to face interviews using a structured questionnaire. Interviews were conducted with the target respondent at home. Households were selected randomly, and within selected households, respondents were selected randomly. The sample was designed to represent the BOP in each country so that the findings could be projected back to this segment in each country. Small ‘middle and top’ of the pyramid samples were included for valid comparison.

The accuracy of usage data was a big concern; the difficulty in accurately capturing calling patterns and behavior at the BOP, where a large proportion of users do not own their own phone, has been previously discussed (Cohen and Lemish 2003; Samarajiva, Hameed and Zainudeen, 2008). While much telecom use research in the developed world is based on billing records, in developing countries where the majority share phones and use pre-paid mobiles, it is not possible to obtain bill details, and thus alternative methods have to be used, such as the respondent’s recall, mobile call logs or other more sophisticated and costly real-time measures. The current study took an innovative approach, recording phone usage and behavior through the placement of a diary.³ Diaries were placed with 50 percent of the sample for a period of two weeks⁴ To record the number of calls made or received; whose

phone or where the phone was used; who the call was to or from; purpose of the call; time of the call; type of phone used. Call durations were recorded as an approximation; for example, whenever a diary respondent took a call, s/he selected one of the following based on how long the call was: ‘1 min or less’, ‘2-3 minutes’, ‘about 5 minutes,’ ‘about 10 minutes’.

A multi-stage stratified cluster sampling by probability proportionate to size (PPS) technique was used to select the target number of urban and rural centers. After determining the number of centers to be selected from each cell (strata in respective provinces), urban and rural areas were selected again using PPS on a constant population interval on geographically ordered centers within each cell.⁵ In each selected centre, a common place such as a road, park, hospital etc. was designated the starting point for contacting households.⁶ Only one respondent was selected from each household using the KISH grid (random number chart) to ensure randomly selection. Within each country, data was weighted by gender, province group/zone and SEC group (A, B, and C vs. D and E) to correct over or under-sampling in certain areas and socio-economic groups.⁷ An overview of the sample size and composition is given in Table 1.

Table 1: Quantitative sample overview

Country	Population	Sample Size			Error margin at 95 percent CI
		SEC A, B, C	SEC D, E	Total	
Pakistan	166m	731	1,081	1,812	3.0%
India	1,000m	652	3,348	4,000	1.5%
Sri Lanka	16m (excl. 2 provinces)	596	481	1,077	3.0%
Philippines	87m	92	1,008	1,100	3.0%
Thailand	65m	348	352	700	7.0%
Total sample size:				8,689	

The qualitative module consisted of six Extended Focus Group Discussions (EGDs)⁸ in each country to enrich the findings of the quantitative survey. Each had average of eight respondents, including telecom users *as well as* non-users.⁹ All groups were conducted in the local language(s).

4.0 Analysis of findings

The survey results indicated that there was a serious gender divide in access to telephones, in general, and ownership of mobile phones in Pakistan and India, however there were few disparities in actual use between genders at the BOP.

4.1 Access to telephones

The Asia-Pacific is one of the world's fastest growing telecom markets with China, India and Pakistan accounting for 70 percent of this growth; yet individual country telecom penetration levels are still relatively low. Of the telecom users studied, approximately 66 percent did not own a phone; they used other peoples phones and public phones.

Defining access here as the most frequently used phone¹⁰ it is evident from the data presented in Table 2 that women had greater access to fixed phones (household owned) than mobile phones (individually owned), in the South Asian countries studied. At first glance, it appears that Pakistan exhibited the most severe divide in mobile access. However, when the ratios of male to female use are considered, it appears that Pakistan and India suffered equally large gender divides, but at different levels of penetration. There were 2.7 males for every female who used their own mobile as the most frequently used phone in both countries.

The divide was present to a lesser degree in Sri Lanka (with a ratio of 1.8:1), and hardly present or reversed in the Philippines and Thailand (1:1 and 1.1:1, respectively). With regard to public access phones, there was a significant gender disparity in Pakistan, with only 24 percent of female respondents compared to 45 percent of male respondents accessing this

kind of phone (a ratio of 1.9:1); access to public phones in the other four countries, even in India was equitable with ratios of close to 1. The Pakistani situation has significant policy implications which are discussed in Section 5.0.

Table 2: Access to a phone at the BOP: Primary phone used by males versus females (%)

		Pakistan	India	Sri Lanka	Philippines	Thailand
Fixed phone (household owned)	Male	11	9	19	3	4
	Female	16	10	23	4	12
Mobile phone (individually owned)	Male	30	12	22	56	76
	Female	11	5	12	55	70
Public access phones	Male	45	71	31	7	7
	Female	24	70	26	7	6
Other peoples' phones (other household members, neighbors, friends, relatives, workplace)	Male	13	8	27	34	13
	Female	48	16	39	33	12

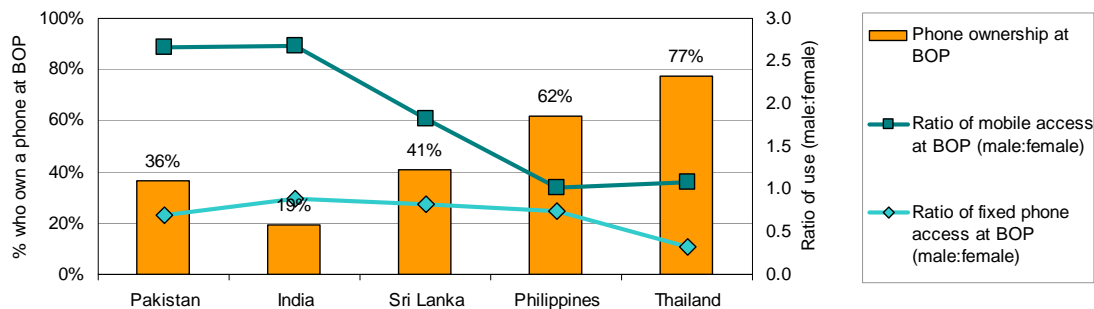
Source: Survey responses

Interestingly a similar ratios were seen in the SEC A, B and C group samples – or in the ‘middle and top’ of the pyramid, although overall *levels* of phone ownership were higher with a lower reliance on public and other peoples phones. In other words, the gender ‘divide’ existed to the same degree in the middle and top of the pyramid samples as at the BOP in the three ‘affected’ countries.

Primo (2003) explains that women’s access to ICTs depends on how many of the same ICTs are available in the household – for instance, if a household has one radio, then it is most likely to be owned and accessed by the man. The same idea can be applied to phones, where if one mobile phone is available to a household, it is the man who is most likely to

have access to it (and most likely carry it around with him when he is out of the house); this is confirmed by the survey findings, and can be clearly seen in Figure 1, which plots the ratios of access to mobiles as well as fixed phones (according to the data provided in Table 2) against the levels of telephone ownership at the BOP. In countries with lower levels of phone ownership at the BOP, the gender divide – as measured by the ratios– appears to be higher. Putting this evidence together with Primo’s argument, it could be possible that as overall penetration levels in a country increase over time, as more and more people get connected, the ‘gender divide’ may in fact narrow. The evidence from the middle and top of the pyramid samples seems to suggest that the effects of increased penetration may take a considerable period of time to impact the gender divide.

Figure 1: Ratios of male:female phone access versus telephone ownership at the BOP



Source: Survey responses

Ownership of phones at the BOP¹¹ was significantly skewed towards men in South Asia (Table 3). Similarly, the ratios of male to female owners suggest a larger divide – especially with respect to mobile phones – in Pakistan, India and Sri Lanka than in the Philippines and Thailand, even in the middle and top of the pyramid samples (although the levels of ownership were much higher).

Table 3: Ownership of fixed and/or mobile phones at the BOP: Male versus female (%)

	Pakistan	India	Sri Lanka	Philippines	Thailand
Male	33	13	27	61	78
Female	12	6	16	59	74

Source: Survey responses

Perhaps more interestingly, respondents were questioned on who makes the decision regarding the amount to be budgeted or spent on mobile phones; among the females who owned their own mobile phone in the South Asian countries, a male made this decision for 74 percent. In the Southeast Asian countries, the corresponding number was 9 percent – a stunning difference. This pattern was the same with regards to expenditure on food as well as electricity. In South Asia, males appear to play a more dominant role in financial decisions at the BOP, a finding which was supported by the qualitative research.

Access and ownership divides in Pakistan and India were seen to be more acute in rural areas with respect to mobiles, but not fixed phones. However rural Pakistani women used other peoples' phones more and used public phones even less than their urban counterparts. There were little or no urban-rural differences between men and women in terms of access to phones (fixed, mobile or public) and ownership of mobiles in Sri Lanka, the Philippines and Thailand.

It appears that among mobile owners (men and women) there were no large discrepancies in the percentage who made use of the SMS facility at the BOP, except in Thailand (where 36 percent of men and only 23 percent of women used the service); except for Pakistan, literacy did not appear to be a barrier to women who owned mobiles, with most able to type their own SMS. However, a larger issue stems from the disparities in mobile access between men and women in the South Asian countries studied: these disparities will have knock-on impacts on the uptake of other mobile-based services such as SMS. Such

services which can be of great value, for example in sending and receiving remittances through electronic payment facilities on mobiles, SMS-voting etc., and are gaining importance in today's context. This issue is also relevant to the disparities seen in Internet access at the BOP.

Overall, Internet access (and use) was very low at the BOP with the Philippines and Thailand having the highest percentages of use, and India having the lowest, as Table 4 shows.

Table 4: Internet use at BOP: Male versus female (%)					
	Pakistan	India	Sri Lanka	Philippines	Thailand
Male	2.9	0.5	2.2	11.9	13.6
Female	0.8	0.1	0.9	5.7	7.3

Source: Survey responses

While Internet use in general was far higher in the richer Southeast Asian countries studied, women still seemed to be making less use of the Internet than of phones, unlike the case of telephone access. The prevailing divide can be associated with the gradual adoption of new media particularly at the BOP. The simplicity of mobile technology has allowed it to be taken up relatively quickly, even at the BOP. The Internet, on the other hand, comes with a list of prerequisites including literacy, computer skills, financial resources, etc, and therefore may take a longer time to diffuse through all sections of society.

Levels of Internet awareness at the BOP varied, from highs of 98 percent among Filipino males to lows of 23 percent of Indian females in India (Table 5).

Table 5: Awareness of the Internet at the BOP: Males versus females (%)					
	Pakistan	India	Sri Lanka	Philippines	Thailand
Male	64	34	76	98	82
Female	68	23	70	91	68

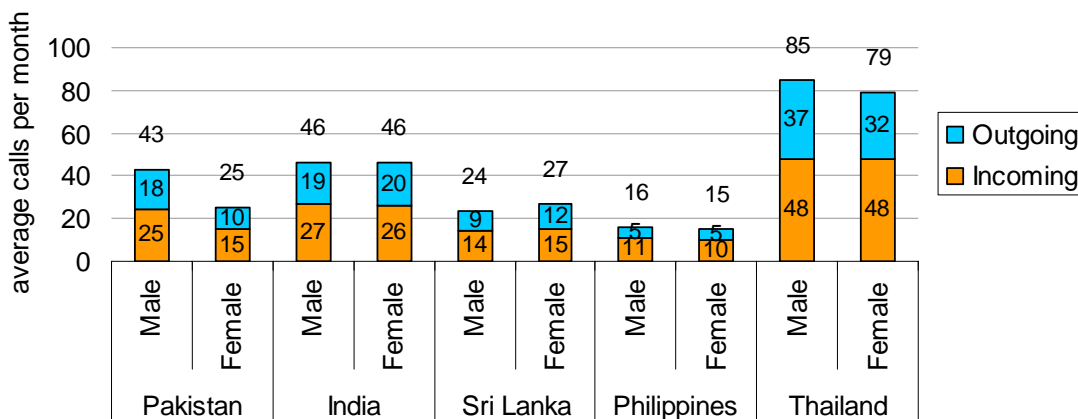
4.2 Use of telephones

This subsection deals with how the telephone is actually utilized –how frequently calls are made, how long is spent on the phone, and the purposes of calls – and is based on the diary records maintained for a period of two weeks; the figures were extrapolated to obtain monthly averages for the number of calls and number of minutes used.

Call frequencies

Figure 2 illustrates the number of incoming and outgoing calls per month, with the average number of calls ranging from a low of 15 calls by women in the Philippines to 85 calls by men in Thailand. There were no significant differences in call frequencies between males and females within India, Sri Lanka, Philippines and Thailand (at 95 percent confidence intervals); men made and received as many calls as women at the BOP on average. This also held true for the middle and top of the pyramid samples, at a higher level of calls albeit. Pakistan, on the other hand, saw BOP men making and receiving significantly more calls than women (almost twice as many), consistent with the middle and top of the pyramid samples (although at higher levels of calls).

Figure 2: Average call frequency per month at the BOP: Males versus females

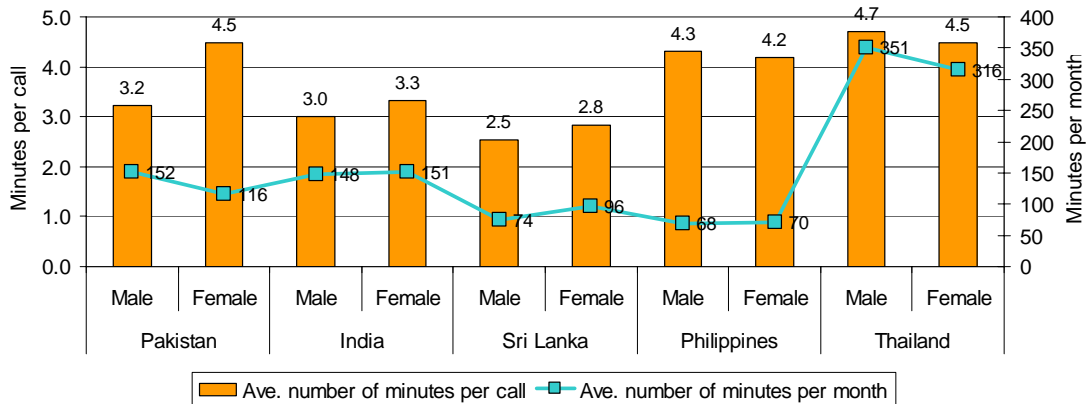


Source: Diary responses

Call durations

On the one hand, there are studies that have concluded that women spend longer time on the phone (Ling, 1998; Smoreda and Licoppe, 2000) – studies which don't agree with the findings of the current study. On the other hand, Melh et al. (2007) studied the number of words spoken by men and women on average per day, as recorded through an electronically activated recorder; the study, conducted on 396 participants (210 women and 186 men) between 1998 and 2004, failed to support the hypothesis that women spoke more than men on average; these results are more in line with those from the current five country study

Figure 3: Average duration per call and total number of minutes used per month at the BOP: Male versus female



Source: Diary responses

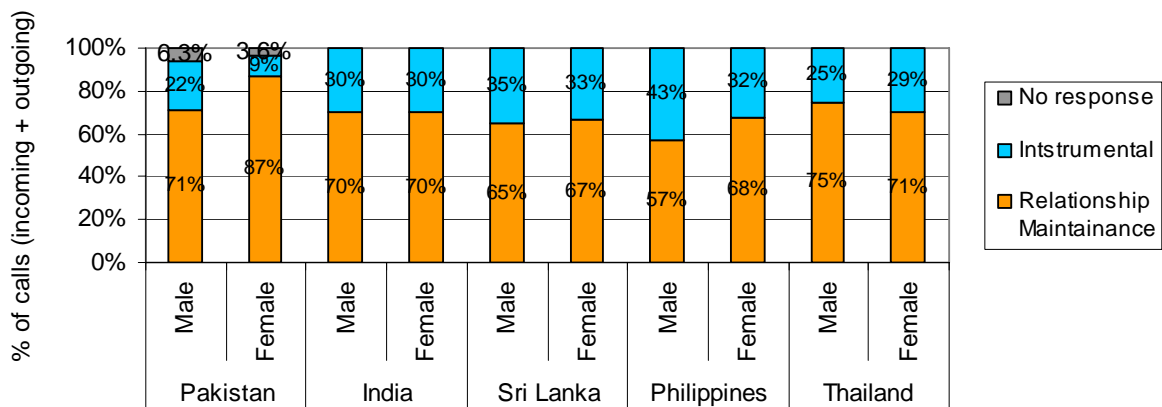
As can be seen in Figure 3, there were little differences in average call durations at the BOP in India, Sri Lanka, the Philippines and Thailand. The only significant disparity (at a 95 percent confidence interval) was once again found in Pakistan, where women spent 4.4 minutes on average per call; the average call duration for men was 3.5 minutes. Once again,

the patterns were mirrored in the middle and top of the pyramid samples in all five countries. Furthermore there were no significant differences between the average number of minutes of calls (incoming plus outgoing) for a month in *any* of the countries at the BOP, although in the middle and top of the pyramid samples, Pakistani women spent a lower number of minutes on average for the month on the phone.

Purpose of calls

Borrowing from Moyal’s terminology (1992), the purposes of communicating by telephone can be loosely classified into relationship maintenance --broadly including keeping in touch with family and friends-- and instrumental purposes --essentially involve the attainment of some objective, such as business transactions, delivering messages, etc.

Figure 4: Purpose of calls at the BOP: Male versus female



Source: Diary responses

Both men and women engaged in relationship maintenance through the phone at more or less the same level (Figure 4) in the Indian and Sri Lankan BOP with no significant differences at a 95 percent confidence level, contradicting the conclusions of previous studies. Thai men at the BOP appeared to spend a larger share of their calls to ‘keep in touch’ and a smaller share on instrumental calls than women did (although the difference was only

by four percent), contradicting the established literature even further. However, Pakistani and Filipino BOP women spent a significantly larger share of their calls on relationship maintenance purposes and smaller share on instrumental calls (mostly business-related) than men (at 95 percent confidence levels). When the ‘middle and top’ of the pyramid samples were considered, the differences in the Philippines become insignificant, while those in Pakistan and Thailand remain.

While the purpose of a single phone call cannot be pinned down to one category, the important point here is that the *primary* purpose of men’s and women’s calls are not significantly different in India and Sri Lanka while those in Pakistan the Philippines and Thailand are; this finding does not fully support the previously discussed literature which claims that women’s use of the phone is based around relationship maintenance purposes, and men’s around instrumental purposes.

Call destination

Across the five countries, the majority of calls made and received were local and national calls; there were few differences in call destination between males and females in any of the five countries. The only two countries where a considerable number of international calls were made and received are Sri Lanka (4 percent of calls) and the Philippines (6 percent of calls) – two countries with significant proportions of migrant workers living abroad. Of the Sri Lankans at the BOP making and receiving international calls, 71 percent were women, whereas in the Philippines, international calls were made and received almost equally by women (54 percent) and men (46 percent).

4.3 The case of the Pakistani BOP

The previous sub-Sections showed that in Pakistan, the country with the lowest national income and second-lowest BOP penetration levels in the study, had the highest gender divide , with mobiles and public access modes being used primarily by males, while

women relied on either fixed phones within the household or other peoples' phones (within the household or neighbors and relatives) –more so than BOP women in other countries. The overall low penetration levels is likely to be a key factor in determining the divide in access, but it seems to be exacerbated by the cultural and social norms within the country, where according to the respondents in the qualitative component of the study, women are less free to move about un-chaperoned, less comfortable to use non-segregated public phone centers, and also more involved in the household chores, all of which restrict them from leaving the house. Thus if there is no phone in the house, they are limited in access. Furthermore, males operating public access points are a possible deterring factor. One female Pakistani respondent in the qualitative component of the study stated that having a mobile phone 'helps us avoid the contact with men at the PCO (public call office);' Richardson et al. (2000) found a similar phenomenon in a study of the 'Village Phone' model in Bangladesh where the number of women who used the mobile payphone decreased if it was operated by a male. Additionally as Gurumurthy (2004, p. 23) points out, public ICT facilities are likely to become 'men-only spaces, effectively inhibiting women's access'.

The differences in call patterns, uniquely seen in the Pakistani BOP in this study are probably also a factor of the cultural and social norms within the country. On the one hand, women made and received fewer calls than men – probably as a result of limited access to phones seen above – but on the other hand, they spent longer durations on the phone, when they get the chance. When compared to men, women are seen to make very few business calls and this is explained by the socio-cultural conventions in Pakistan where women play a minimal role in business affairs, and are mostly involved in household activities, as related by some of the EGD participants.

5.0 Policy implications

Public/shared access is an important form of ICT access in the five countries studied. The gender divide at the BOP identified in the South Asian markets studied has significant repercussions on the design and implementation of public access phone centers and telecenters. Of particular concern to policy makers is the case of Pakistan where telecenters and other public-funded public ICT access operations provide little or no benefit to women, as the prevalent cultural and social norms do not encourage them to venture out to use such facilities. The findings of this study are indicative that if given the opportunity, and provided access to telephones, women may make use of phones on a larger scale. In order to satisfy this demand for telephony, it is imperative that public access points are made more female-friendly, perhaps by having them operated by females, or having certain days or times when only women are permitted to use them. Nevertheless, the fact that internet access is deficient indicates that such telecenters need to focus on a wider range of services than just internet and telephony.

A suitable alternative would be to promote mobile use; this would also solve the problem of disparate access to the developing range of mobile-based services, such as mobile banking, mobile remittance services, SMS-voting, etc. raised in Section 4; the potential of such services is great.

The data suggest that in countries with higher penetration, the gender divide is less severe. Even if individual ownership is not feasible at current income levels, an 'interim' approach – something along the lines of the Grameen Village Phone program where entrepreneurial women are provided micro-loans to purchase mobile phones that they operate as public phones within their locality, could be put in place.¹² This has been implemented successfully in Bangladesh and has been proven to be replicable¹ given the right conditions (Knight-John, Khan and Zainudeen, 2005); telecom operators have even developed new

¹ At the time of writing (2007); however, since then the model has been seen to be less relevant in Bangladesh, where individual mobile ownership has become more affordable and thus grown substantially, making the village phones less profitable (<http://limeasia.net/2007/08/village-phone-facing-obsolence-in-bangladesh/>).

products based on the concept of a mobile phone being operated as a pay-phone (Lanka Business Online, 2 August 2007).

Secondly, given that women at the BOP in Sri Lanka were the biggest international callers, there is opportunity for revenue streams for public access providers (including commercial telecom centers, telecenters, etc) to provide cheap international calls via the internet (using services like Net2Phone) to such women.

By and large women's access to telephones and other ICTs needs to be given priority and special consideration, in countries where they are the most marginalized consumers.

6.0 Conclusion

The findings reported in this article confirm that a large gender divide in direct access to phones exists at the BOP in Pakistan and India, to a lesser extent in Sri Lanka, but is generally absent at the BOP in the Philippines and Thailand. While these 'affected' South Asian women appear to have access to some kind of phone, their access to more direct modes (i.e., a household fixed phone or their own mobile phone) is limited when compared to men's. The Pakistani case is possibly exacerbated by specific cultural and social contexts, however, these findings seem to suggest a link between the magnitude of the gender divide and overall penetration levels in a country. This implies that as overall penetration levels increase as economic growth and development take place, the gender divide will narrow; this is intuitive, as incomes grow, and households are able to afford more than one phone, women's access will also improve in this regard. The evidence of a divide of the same magnitude in the 'middle and top' of the pyramid seems to suggest that this narrowing however will not take place in the short or perhaps even medium term in these affected countries. Therefore policy makers should make efforts to speed up this process through policies which will enable wider telephone uptake, especially mobiles, given the potential of

many of the new mobile-based applications such as mobile-banking, mobile remittance services, SMS voting, etc. Further study, using time-series data could shed more light on this theory.

This study also finds that women's use of telephones at the BOP in India, Sri Lanka, the Philippines and Thailand does not seem to differ much from men's. While the differences seen in men's and women's use in the Pakistani are again artifacts of the specific cultural and social contexts as explained, the findings relating to the former countries challenges much of the existing literature. These findings also held true even in the 'middle and top' of the pyramid samples; what this implies is that even with its higher spending power and the higher levels of phone usage, there are no apparent differences between men and women at different 'levels' of the economic pyramid within these Emerging Asian countries; this then suggests that Emerging Asian telecom users are fundamentally different to those in developed countries, not just at the BOP, but perhaps even in the remainder of the economic pyramid too.

END NOTES

¹ The authors gratefully acknowledge the valuable contributions of the following persons in the development of this article and underlying analysis: Shaheen Cader of AC Nielsen Lanka (Pvt.) Ltd, , Harsha de Silva, Helani Galpaya, Anu Samarajiva, Rohan Samarajiva, Nirmali Sivapragasam and Shamistra Soysa of LIRNEasia., and Laurent Elder of the International Development Research Centre (IDRC) of Canada. This work was carried out with the support of the International Development Research Centre (IDRC) of Canada.

² Interviews were carried out by 15 women research assistants who presented 7 to 10 female respondents of different ages and backgrounds with a 40-page questionnaire.

³ Interestingly, the authors were not able to locate any comprehensive studies using this approach in the literature for developing countries. One of the very few examples of use of this approach is a British Telecom study examined in Mckenzie (1983)

⁴ Given the low literacy level of some of these countries, a literate person in the household was selected and trained to record the necessary information.

⁵ For this purpose, the cumulative population of all geographically ordered centers was calculated within urban and rural areas of each province. To find out the sampling interval the total population of these centers was divided by the required number of cities to be sampled from that cell. To select the first center, a random number was generated. The center where that random number fell was the first selected center. By adding the sampling interval to that random number, the next center was selected and so on.

⁶ Around each starting point, a maximum of ten interviews were conducted. The number of starting points was determined in accordance with the total number of interviews to be conducted in each center.

⁷ As a result of weighting by SEC in some countries the SEC A, B, and C weighted sample size becomes larger than the SEC D and E weighted sample size where the former group forms a higher proportion of the country's population.

⁸ EGDs are longer than an average focus group – 3 hours or so as opposed to one and a half to two hours. The advantage is that respondents are not rushed in an EGD.

⁹ Someone who has not used any form of telecommunication during preceding 3 months.

¹⁰ While respondents may use other kinds of phones also, the most frequently used phone is considered here only.

¹¹ We do not analyze ownership of fixed phones by gender because fixed phones are likely to be more of a household tool available for common use by ‘owners’ (the person whose name the phone is registered under) as well as other members of the household; additionally, analysis of fixed phone ownership by gender would be generally skewed towards men in our sample.

¹² Though this model has been revolutionary in providing telecom access to millions in rural Bangladesh, it has become evident that this kind of ‘solution’ will not work indefinitely; once overall penetration levels have reached a certain point, the model will no longer be necessary, and will therefore cease to be a profitable business for the village phone operator. See <http://www.fastcompany.com/magazine/118/unplanned-obsolence.html> for more.

REFERENCES

- Claisse, G. and F. Rowe (1993) ‘Domestic Telephone Habits and Daily Mobility’, *Transportation Research A* 27: 277-290
- Cohen, A. A. and D. Lemish (2003) ‘Real time and recall measures of mobile use: Some methodological concerns and empirical applications’, *New Media and Society* 5(2):162-183
- Cronin, F. J., E. K. Colleran, E. B. Parker and M. A. Gold (1991) ‘Telecommunications infrastructure and economic growth: An analysis of causality’, *Telecommunications Policy* 15(6): 529-535
- Cronin, F. J., E. K. Colleran, E. B. Parker and M. A. Gold, (1993) ‘Telecommunications Infrastructure Investment and Economic Development’, *Telecommunications Policy*, 17(6): 415-430. Bibliography 351
- Dindia, Kathryn and Mike Allen (1992) ‘Sex Differences in Self-Disclosure: A Meta-Analysis’, *Psychological Bulletin* 112:106-24

- Dolgin, Kim G. and Nozomi Minowa (1997) 'Gender Differences in Self-Presentations: A Comparison of the Roles of Flatteringness and Intimacy in Self-Disclosure to Friends.' *Sex Roles* 36:371-80
- Fischer, Claude S (1992) *America Calling: A Social History of the Telephone to 1940*. Berkeley: University of California Press.
- Gurumurthy, Anita (2004) 'Gender and ICTs', Overview Report: BRIDGE Development-Gender, Institute of Development Studies, <http://www.bridge.ids.ac.uk/reports/cep-icts-or.pdf> (consulted 5 March 2007)
- Hardy, A. P. (1980) 'The Role of the Telephone in Economic Development', *Telecommunications Policy* 4(4): 278-286
- Hafkin, N. and N. Taggart (2001) 'Gender, Information Technology, and Developing Countries: An Analytic Study', Academy for Educational Development (AED)
- Huyer, S., N. Hafkin, H. Ertl and H. Dryburgh (2006). 'Women in the Information Society' in G. Sciadas (ed.) *From the Digital Divide to Digital Opportunities: Measuring Infostates for Development*. Montreal: Orbicom
- Knight-John, M., Khan, A.S. and Zainudeen, A (2005). An Investigation of the Replicability of a Microfinance Approach to Extending Telecommunications Access to Marginal Customers. WDR Dialogue Theme 3rd Cycle Discussion Paper WDR 0506, Version 3.1, December 2005. Retrieved on 5 March 2007 from <http://www.lirneasia.net/wp-content/uploads/2006/02/KnightJohn%20Zainudeen%20Khan%202005%20Replicability%20GP%20microfinance.pdf>
- Lanka Business Online (2 August 2007) Walkie Talkie: Sri Lanka's Dialog celco starts walking payphones, http://www.lankabusinessonline.com/fullstory.php?newsID=1181452815&no_view=1&S (consulted 2 August 2007)

- Ling, R. (1998) ‘ “She calls, [but] it’s for both of us you know”’: The use of traditional fixed and mobile telephony for social networking among Norwegian parents’ R&D Report 33/98. Kjeller, Norway, Telenor. <http://www.telenor.no/fou/program/nomadiske/articles/10.pdf> (consulted 22 August 2005)
- Melh, M.R., S. Vazire, N. Ramírez-Esparza, R. Slatcher and J.W. Pennebaker (2007) ‘Are Women Really More Talkative Than Men?’ *Science* 317(5834):82. Available at: <http://www.sciencemag.org/cgi/content/abstract/317/5834/82?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=Women+Really+More+Talkative&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT> (Consulted 6 July 2007)
- Moore, Gwen (1990) ‘Structural Determinants of Men's and Women's Personal Networks’. *American Sociological Review* 55:726-735
- Moyal, Ann (1992) ‘The Gendered Use of the Telephone: An Australian Case Study’, *Media, Culture and Society* 14:51-72.
- Ovum (2006) ‘The Economic and Social Benefits of Mobile Services in Bangladesh: A case study for the GSM Association’, London: GSMA
- Parker, E. B and H.E. Hudson et al. (1995) *Electronic Byways: State Policies for Rural Development through Telecommunications*, revised Second Edition. Washington DC: Aspen Institute
- Prahalad, C.K. (2004). *The fortune at the bottom of the pyramid: Eradicating poverty through profit*. Upper Saddle River, New Jersey: Wharton School Publishing.
- Primo, Natasha. (2003). *Gender Issues in the Information Society. Publication for the World Summit on the Information Society*. Paris: UNESCO.
- Rakow, L.F. (1992) *Gender on the line*. Urbana: University of Illinois Press.

- Richardson, D., R. Ramirez and M. Haq (2000) 'Grameen Telecom's Village Phone Programme in Rural Bangladesh: a Multi-Media Case Study Final Report'. Ontario: TeleCommons Development Group (TDG)
- Roller, L., and L. Waverman (2001) 'Telecommunications Infrastructure and Economic Development: A Simultaneous Approach', *American Economic Review*, 91(4): 909-23. Econlit database (Consulted 19 October 2006)
- Samarajiva, R., Hameed, M. & Zainudeen, A. (2008). I Just Called to Say: Teleuse Under a Ceasefire. In R. Samarajiva and A. Zainudeen (Eds.), *ICT infrastructure in Emerging Asia: Policy and Regulatory Roadblocks*. New Delhi & Ottawa: SAGE & IDRC
- Smoreda, Z. and C. Licoppe (2000) 'Gender-specific use of the domestic telephone', *Social Psychology Quarterly*, 63: 238–252.
- Souter D., N. Scott, C. Garforth, R. Jain, O. Mascarenhas and K. McKemey (2005). 'The Economic Impact of Telecommunications on Rural Livelihoods and Poverty Reduction: a study of rural communities in India (Gujarat), Mozambique and Tanzania' Commonwealth Telecommunications Organisation for UK Department for International Development
- The Pew Internet & American Life Project (2000, May) 'Tracking online life: How women use the Internet to cultivate relationships with family and friends' (Report)
- United Nations Division for the Advancement of Women, International Telecommunication Union (ITU) and UN ICT Task Force Secretariat (2002, November) 'Information and communication technologies and their impact on and use as an instrument for the advancement and empowerment of women', Report presented in Seoul, Republic of Korea, November 2002.
- Waverman, L., M. Meschi and M. Fuss (2005) 'The Impact of Telecoms on Economic Growth in Developing Countries', in *Africa: The Impact of Mobile Phones in the*

Developing World. Moving the debate forward: The Vodafone Policy Paper Series,

No. 3, March 2005. Pp.10-23.

http://www.vodafone.com/assets/files/en/SIM_Project_download_2.pdf (consulted 2

November 2005)

TABLES AND FIGURES

Table 1: Quantitative sample overview

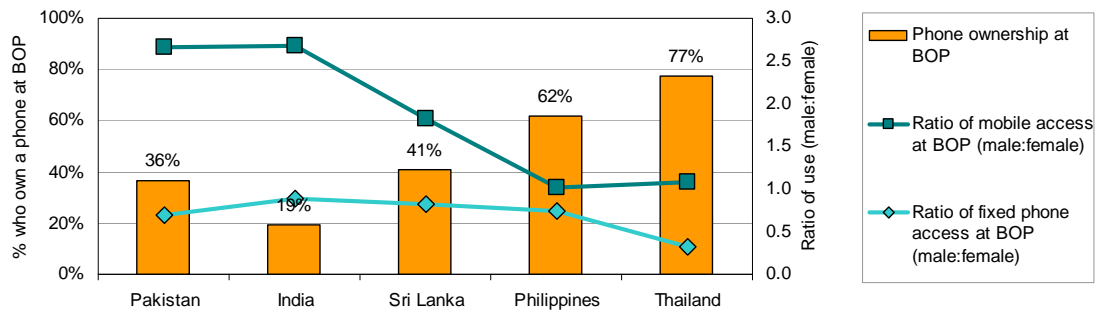
Country	Population	Sample Size			Error margin at 95 percent CI
		SEC A, B, C	SEC D, E	Total	
Pakistan	166m	731	1,081	1,812	3.0%
India	1,000m	652	3,348	4,000	1.5%
Sri Lanka	16m (excl. 2 provinces)	596	481	1,077	3.0%
Philippines	87m	92	1,008	1,100	3.0%
Thailand	65m	348	352	700	7.0%
Total sample size:				8,689	

Table 2: Access to a phone at the BOP: Primary phone used by males versus females (%)

		Pakistan	India	Sri Lanka	Philippines	Thailand
Fixed phone (household owned)	Male	11	9	19	3	4
	Female	16	10	23	4	12
Mobile phone (individually owned)	Male	30	12	22	56	76
	Female	11	5	12	55	70
Public access phones	Male	45	71	31	7	7
	Female	24	70	26	7	6
Other peoples' phones (other household members, neighbors, friends, relatives, workplace)	Male	13	8	27	34	13
	Female	48	16	39	33	12

Source: Survey responses

Figure 1: Ratios of male:female phone access versus telephone ownership at the BOP



Source: Survey responses

Table 3: Ownership of fixed and/or mobile phones at the BOP: Male versus female (%)

	Pakistan	India	Sri Lanka	Philippines	Thailand
Male	33	13	27	61	78
Female	12	6	16	59	74

Source: Survey responses

Table 4: Internet use at BOP: Male versus female (%)

	Pakistan	India	Sri Lanka	Philippines	Thailand
Male	2.9	0.5	2.2	11.9	13.6
Female	0.8	0.1	0.9	5.7	7.3

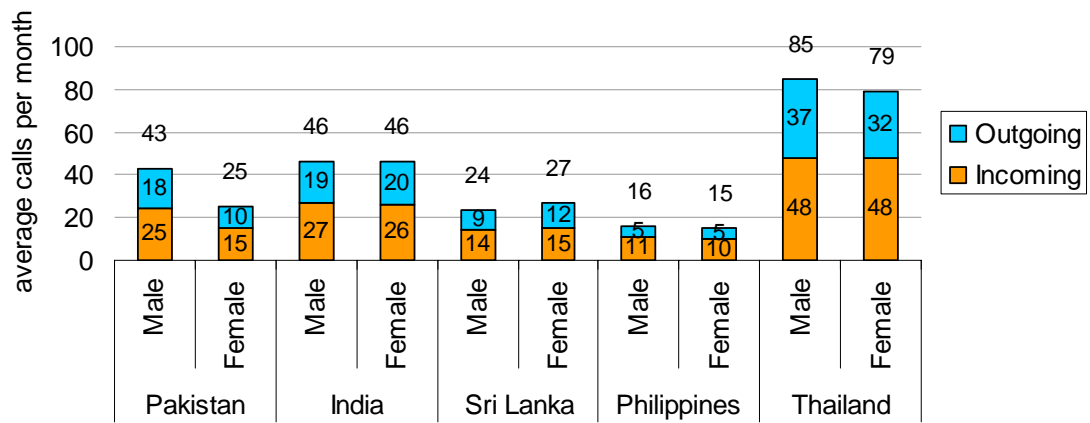
Source: Survey responses

Table 5: Awareness of the Internet at the BOP: Males versus females (%)

	Pakistan	India	Sri Lanka	Philippines	Thailand
Male	64	34	76	98	82
Female	68	23	70	91	68

Source: Survey responses

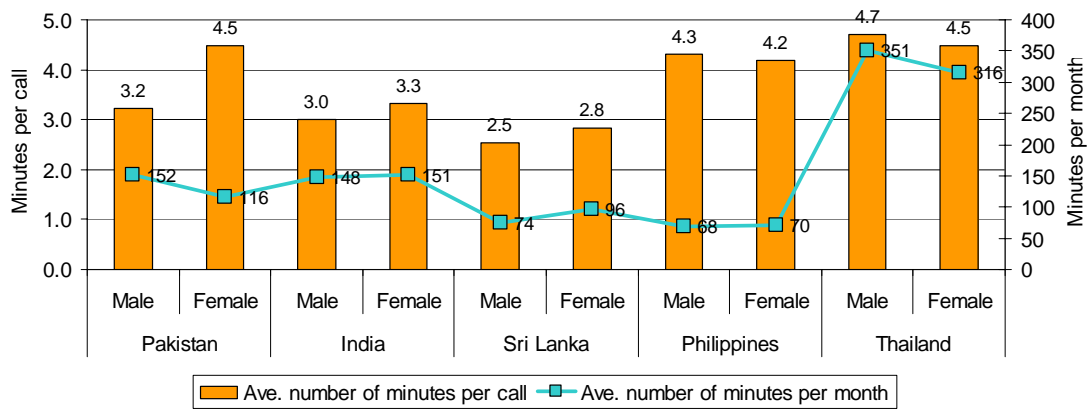
Figure 2: Average call frequency per month at the BOP: Males versus females



Source: Diary responses

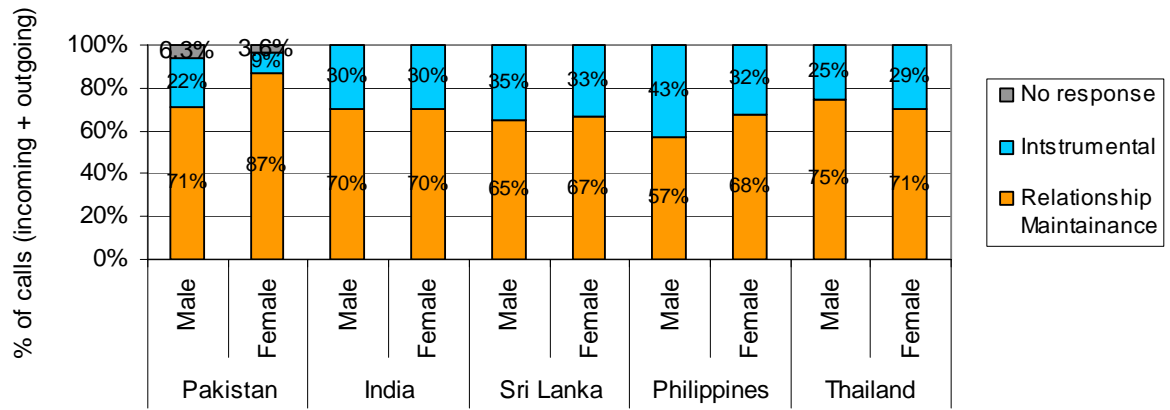
Figure 3: Average duration per call and total number of minutes used per month at the BOP:

Male versus female



Source: Diary responses

Figure 4: Purpose of calls at the BOP: Male versus female



Source: Diary responses