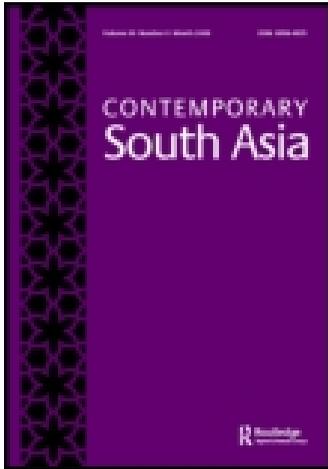


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Paving the pathway for women's empowerment? A review of information and communication technology development in Bangladesh

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This paper reviews the recent situation in information and communication technology (ICT) development in Bangladesh, with particular reference to mobile phone technologies. While mass access to ICT is often portrayed as the great socio-economic leveller, we show that in the Bangladesh case the existing evidence illustrates something quite different. Despite the high profile of certain female politicians, Bangladesh performs very poorly on international measures of gender equality and the reasons are deeply rooted in social and cultural norms. As a consequence, programmes aimed at poverty alleviation through widespread deployment of ICT in rural areas are disproportionately beneficial to men, even when targeted primarily at women. We conclude that unless ICT programmes are more sensitive to the causes of gender inequity, the ICT revolution in Bangladesh is likely to deepen rather than ameliorate the gender divide.

Keywords: ICT; women; poverty; gender; empowerment; Bangladesh

Introduction

While the rate of information and communication technology (ICT) usage is broadly related to gross domestic product per capita, the speed with which ICTs are spreading in developing countries warrants special attention. There has been much emphasis on the concept of the 'digital divide' – the high levels of connectedness among wealthy communities with adequate infrastructure, on the one hand, and much lower levels among the poor, women and ethnic minorities, on the other. But relatively little attention has been paid to the socio-cultural causes of this divide. The recent use of ICT in micro-level development contexts has created a need for research on the distributional impacts of ICT growth. Although some studies have been commissioned by the commercial sector itself (Waverman, Meschi, and Fuss 2005; Ovum 2006; Deloitte & Touche LLP 2008), their focus is on the contribution to economic growth and tends to ignore distributional effects.

Moreover, few of the studies address gender impacts of ICT growth and there remains a dearth of research on this issue in developing countries. Few recent studies focus on Bangladesh, despite the rapid growth of ICT in that country and the fact that it is home to Grameen Bank (which has promoted women's economic development) and its path-breaking mobile phone initiative (Grameen Telecom 2006; Grameen Bank 2007).

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Information and communication technology, a fast and easy medium of knowledge diffusion, can have enormous benefits for individuals' daily lives and play a vital role in social and economic gains. But, as McNamara (2003) pointed out, disregarding gender issues may lead the use of ICT to intensify and solidify already existing economic, political and social inequalities. Since gender biases tend to be not only deeply rooted, but also complex, it is particularly important to generate awareness of the gender dimension if women are to be empowered by the new technologies. The specific gender relations impacting upon the adoption of ICT are crucial for the economic development contribution that is expected of it.

In much of the literature, ICT has been identified as 'gender neutral', bringing gender equity and economic development at the same time. As a 'great equaliser' in society (Drucker 2001) the spread of ICT is said to have been enormously beneficial to those who have limited skills or lack resources to invest in higher education (Kelkar and Nathan 2002; Hafkin and Huyer 2006; Mitter 2007).

However, gender barriers have not been wiped out by earlier technological revolutions and remain entrenched in both urban and rural areas all over the world. Women face extra challenges as the pace of technological change increases, even, or perhaps especially, amongst the novel opportunities arising from the globalised digital economy. In developing countries rural people face barriers to the use of ICT (Hafkin 2000; Mitter 2007). Moreover, for women, the barriers may actually propagate due to socio-cultural factors that define the parameters of their entry into the market economy. Best and Maier (2007) argued that discrimination may be heightened even in unintentional ways if ICT is not designed to reflect the needs of women (see also Arun and Arun 2002; Hafkin 2000; Mitter 2007). 'The key issue is that the technologies should be adapted to suit women rather than that women should be asked to adapt to technology' (Rathgeber cited in Jain 2007). In rural Bangladesh, for cultural or religious reasons, women are confined within the household, or unable to leave without permission or a male companion. In such patriarchal societies the digital divide refers to the uneven intra-household distribution of access and control.

In this study, we explore how 'women-centred' ICT projects are deployed in ways that neither overcome unequal gender relations nor improve women's potential to be productive contributors to the economy and society. In other words, projects that appear to be gender neutral are in reality gender blind. In the next section, we review some earlier 'women-centred' programmes in Bangladesh. Then, in the following section, we examine how recent ICT developments affect rural women's empowerment.

Do 'women-centred' programmes empower women in Bangladesh?

Gender discrimination is a universal phenomenon, though one that is particularly acute and visible in Bangladesh's highly patriarchal society. Although poverty has multidimensional facets in women's lives, this multidimensionality is often ignored by policy makers. In this section, we will see that poverty in Bangladesh is related with gender norms in a complex way, and that women-centred programmes are inadequate to address gendered poverty. Policies and programmes must first take cognisance of the socio-cultural barriers women face.

Bangladesh shows a persistent pattern of feminisation of poverty since 1970 (Quisumbing, Haddad, and Peña 1995; Kabeer 2003). Women face multifaceted

domination – high rates of illiteracy, early and forced marriage, high maternal mortality, social and religious restrictions, coupled with instances of torture, abandonment, little control over assets, and limited job opportunities. Social, cultural and religious norms place Bangladeshi women in an inferior and dependent position vis-à-vis men throughout their lives – indeed male guardianship is essential for economic and social security, social status, and even identity (Hunt and Kasynathan 2001). Strong preference for sons means women have little or no decision-making power over their fertility. Religion and tradition lie behind much of the gender gap in rural areas – Muslims making up 88.3% of the population, women face barriers to their movement outside of the *bari*.¹ They are expected to remain in *pardah* (seclusion), and challenging this norm (according to several studies cited by Hunt and Kasynathan 2001) is more likely to come from women who have no other option than to provide for themselves. One of the key factors constraining women from being able to control assets to which they might have access is the inability to go to market, particularly in the case of non-traditional income-generating activities. They are more likely to be restricted to work on traditional low-value products that can be marketed on a small scale from home. As the market places are one of the most important sources of information dissemination, the tradition of *pardah* constitutes a massive barrier to women's economic and social empowerment.

In 2011, Bangladesh ranked 112 out of 145 countries on the UNDP Gender Inequality Index (GII) (UNDP 2012).² In 2009 adult female literacy was estimated at only 79% of the male rate, life expectancy was only two years longer than for males, and estimated average female earnings were only 51% of male earnings. In political and managerial life, few countries had a smaller proportion of women among their legislators, senior officials and managers in 2007 (UNDP 2009).

Such indices convey neither an *understanding* of the gender differentials they describe nor ways to overcome them. Taking the case of education for example, gender parity for primary enrolment has been achieved under the female stipend programme introduced in 1982. However, the stipend programme may disguise political motivations (Mahmud 2003) and leave gender disparities in educational achievement intact. As Raynor and Chowdhury (2004 cited in Schurmann 2009) remarked:

... the popularity of the programme may hinge on its subsumation of explicit empowerment goals. Support of the community for the programme may be derived from the belief that education makes women better wives and mothers, not more empowered people. A number of critics argue that, if empowerment were the explicit objective, fewer families would keep their daughters in school.

Quantitative targets can achieve political goals, but females remain hampered by unequal treatment in the classroom.³ Data from secondary school exam entries showed that despite higher female secondary enrolment, only 45.4% entered for the exams and less than 44% of those were able to pass (Raynor and Wesson 2006). While greater provision of female teachers is encouraging (Khandakar 1996; Glick 2008) because many parents are unwilling to send daughters to school unless they can be taught by a woman, there remains a shortage of female teachers. Female teachers at primary level are 42% of all teachers, but only 22% at secondary level (BANBEIS 2010). In 2007, the female secondary school dropout rate, at 66%, was double the completion rate (34%), compared to the male rates of 58% and 42%, respectively. Parents often consider higher-level schooling for girls 'inappropriate'

(Khanam 2006). Moreover, education cannot empower women if they lack opportunities to implement the skills learned.

A study cited by Raynor and Wesson (2006), while acknowledging some positive impacts of subsidised female education programmes, nevertheless demonstrated a low level of impact. Among guardians, female opinions regarding decisions about their own marriage were not considered important in nearly 70% of cases. Only 3% considered declining to give dowry and only 4% of head teachers, teachers and guardians felt that girls should be able to move freely alone. The promotion of women in development initiatives can also create household friction without increasing women's bargaining power, such that a disempowering effect dominates over empowerment (Kabeer 2003). Moreover, small increases in income are associated with heavy household workloads and accompanying health costs. The aim of empowerment becomes subsumed under the concern for alleviation of income poverty (Mayoux 2005).

Microfinance is another example of an attempt to provide women with greater access to resources, but with mixed results – even disempowering women if programmes lack explicit strategies for overcoming gender inequality (Mayoux 1999).

Bangladesh is the world's most saturated microfinance market and it is overwhelmingly a market centred on women. Yet, despite this women-centredness, there is very little evidence of reduced gender inequality. A review of the literature on microfinance in Bangladesh (Hunt and Kasynathan 2001) reports that while the 'whole family is more likely to benefit from credit targeted to women, compared with credit targeted to men', the benefits do not automatically translate into empowerment of women. Goetz and Sen Gupta (1996) found that only 37% of their surveyed borrowers had 'full' or 'significant' control over loan use. Overall, there was a consistent pattern of loss of control, but the burden of repayment was always on the recipients (the women). Moreover, the definition of 'significant control' did not include control over marketing, which, according to the tradition of *purdah*, is not an activity normally open to women. Women may therefore have little control over the income generated (Hunt and Kasynathan 2001).

If empowerment is inhibited by prevailing social and institutional norms, a re-thinking of policies to support women's development is demanded. Instead of focusing on increasing income, issues of self-confidence, control over resources (loans and the assets they purchase), use of loans and control over household income need to be considered. The neglect of these issues in the literature on Bangladesh is an indicator that, despite widespread acceptance of the 'multidimensional' nature of poverty, the focus of development practice and research remains one dimensional.

Turning to the ways in which relative disempowerment is sustained in Bangladesh; social network analysis has shown that rural women's social networks are dominated by 'bonding' ties rather than 'bridging' ties. There is a spatial dimension to women's exclusion from those bridging ties which is crucial to increasing access to information and other resources (Woolcock and Narayan 2000). Intra-household power relations control women's bonding networks in such a way that their ability to pursue social relations beyond their family and immediate peer networks is constrained. The diffusion of new knowledge and ideas is more efficient through weak (bridging) ties that transmit information across largely disconnected segments of social networks. However, tightly knit kinship networks have played a role in reproducing women's exclusion from the fruitful advantages of 'the strength of weak ties' (Granovetter

1973). On the other hand, males are better equipped to access public bridging networks while women are often tied to this more beneficial network only indirectly, through their relationships with men (Silvey and Elmhirst 2003). This ability of men to exercise greater control over information resources signifies again that pre-existing gendered and normative constraints within household and society are crucial. Gender-specific claims within households and normative constraints on women's mobility and behaviour perpetuate women's segregation from potentially more powerful networks. Silvey and Elmhirst (2003: 876) continue:

... what may be positive social capital for men (e.g., a household safety net), can be experienced as social constraint or a burden by women in the same network. In addition, ... the social capital that provides particular gender-specific advantages to women themselves may also simultaneously include disbenefits specific to those very women.

Social network analysis is intuitively applicable to the study of ICT, but needs to be understood in the context of normative constraints and not applied in a gender blind way.

Self-esteem among rural women in Bangladesh is not very common. The Bangladesh Market Insight Study (2007) revealed that 66% of rural women think that women should stay at home after marriage to take care of the family. In reality, however, the World Bank (2010) reports a labour force participation rate for women aged 15 and above of 58.3% (compared to 84.0% for males), while 68.1% of females in employment were working in agriculture (41.8% for males). 'Staying at home' therefore often means in practice working in the family fields and contributing substantially to household income. One argument, supported by some of the literature on microfinance, is that diffusion of knowledge about ideas and realms beyond the family is crucial for raising women's awareness of their rights and actual contribution, and therefore for increasing their self-esteem. In other words, women need to be able to increase their 'weak' or 'bridging' ties in a way that does not rely on indirect ties through men. Hunt and Kasynathan (2001: 49) pointed out that formation of groups outside the *bari* could be helpful in this regard:

Some groups focused on their knowledge of law and rights, and others focused on the strength that they said came from being in a group, and feeling that they could now take action against something that they knew was wrong.

Information and communication technology diffusion among rural Bangladeshi women could make an important difference, provided it is strategically implemented in a way that takes into account the socio-cultural context of gender relations. It could do this precisely because, where women have genuine access to and control over their use of the technology, they will have access to and control over the type of information they need, especially information beyond the *bari*. What we have suggested here is that fulfilling the potential of ICT as a tool of empowerment will involve the transformation of complex gender norms. As we shall see in the next section, such a transformation has yet to be addressed by current ICT programmes.

Can ICT empower women? A gender perspective

The diffusion of ICT, and of mobile phones in particular, now plays a major part in economic and social development programmes. Bangladesh is the birthplace of both

micro credit and the village phone programme (VPP), aimed at empowering poor rural women. Since its inception, VPP has become a model for ICT development and women's empowerment and is widely replicated in other countries (Stanley 2005). In this section, we argue that a fundamental flaw of VPP has been that, instead of designing the programme around the needs of women, its gender neutrality was simply, and wrongly, assumed. The hope currently placed in this women-targeted technological revolution is therefore misplaced.

Similarly, many ICT programmes (mobile phone, computer and internet training) have been introduced in Africa and India with the aim of empowering rural women, but existing literature shows that they too often suffer from a lack of conscious effort to address gender inequity in programme design (Jain 2007; Murphy and Priebe 2011). Best practice in this regard depends upon local circumstances, as Murphy and Priebe (2011) document in the relation to several African countries.

In Bangladesh, the mobile phone sector has grown rapidly in recent years (Figure 1) and mobile subscribers reached 79.68 million in August 2011 (Bangladesh Telecommunications Regulation Commission 2011), over 53% of the total population (World Bank 2011). We have not been able to find data on the distribution between urban and rural areas, but assume that it demonstrates a similar pattern to those of other ICT and electronic products shown in Figure 2. According

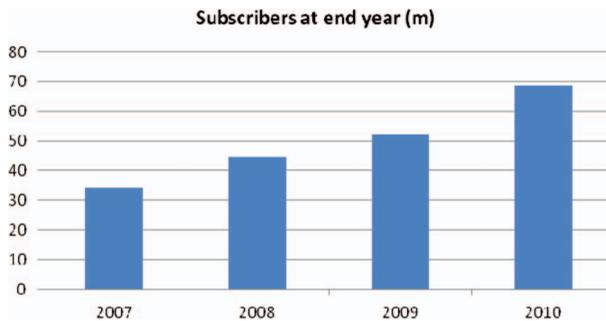


Figure 1. Recent development in mobile phone subscriptions. Source: Bangladesh Telecommunications Regulatory Commission (2011).

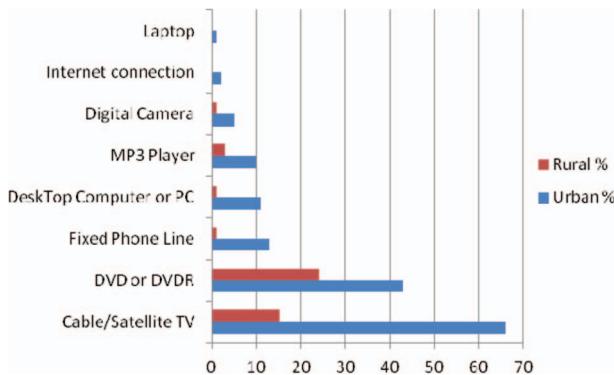


Figure 2. Electronic Product Ownership in Bangladesh in 2007. Source: Bangladesh Market Insight Study (2007).

to one report, ownership of mobile phones overtook ownership of TV sets during 2008 (Internews Europe 2008: 67).

Mobile phones have become a substitute for fixed phone lines, due to high connection fees and inadequate infrastructure for the latter and greater flexibility with a lower connection fee for the former. As internet and other ICTs (shown in Figure 2) are as yet largely inaccessible to rural people, we focus here on mobile phones, specifically the VPP.

There are six private mobile operators competing in the country. Their market shares (both urban and rural users) are Grameenphone 44%, Bangla Link 27%, Robi 19%, Airtel 6.5%, City Cell 2% and Teletalk 1.5%. Grameenphone, in particular, has widely diffused its mobile phone network in the countryside, claiming to cover 99.14% of the population in all 64 districts (AT Capital Research 2010). In 1997, Grameenphone launched its VPP, aimed at meeting the information needs of rural people to increase income earning opportunities.

The VPP service is provided through a Grameen Bank (GB) subsidiary Grameen Telecom, which, in partnership with the Norwegian Telenor, owns Grameenphone (2010). The Bank disburses loans to its members for the purchase of a mobile phone. To become a VPP owner, women have to fulfil certain conditions including membership of GB, past good repayment record, spare time to run the business, an existing income generating business, and at least one literate family member (Grameen Telecom 2006). VPP therefore excludes the most marginalised section of the population. By the end of 2008, VPP covered 50,000 villages, reaching 61 of 64 districts, with a total number of 2465 branches and in excess of 353,909 operators, generating almost one fifth of Grameenphone's revenue.⁴ It works as a public phone operator, therefore adding many more users to Grameenphone's 28.65 million subscribers as of September 2010 (AT Capital Research 2010). Village phones are generally installed at the operator's residence with a banner or poster, the house being locally known as 'phone-bari'. Operators also often work from a kiosk in the bazaar. As it is a widespread programme specifically targeted at women, an examination of its impact should enable us to gain some insight into its implications for gender empowerment.

A small number of studies, covering the early period of the VPP, have analysed its impact on rural livelihoods. Bayes (2001) focused on the role of telecommunications in rural poverty reduction, while Richardson, Ramirez, and Haq (2000) intended to complement Bayes' information. On the other hand, Aminuzzman, Baldersheim, and Jamil (2003) concentrated their study on the efficiency of VPP in terms of 'information poverty'. While limited data on the gendered impacts of the programme can be extracted from these early studies, they did not comment on the implications of the gender inequalities that they noted. Questions of 'how' and to 'what extent' VPP has been effective in empowering women have so far gained little attention.

Any assessment of success or failure of VPP's women-focused strategy depends on how much rural women actually benefit from the strategy, individually, socially and economically. In order to understand women's empowerment, it is important to look into the issue of the 'control of resources', in this case the mobile telephone that they, in principle, own. In this regard, the data on the actual control exercised by the women VPP owners found in the abovementioned studies revealed that majority of the phone operators were males. The large proportion of male operators poses a question about the gender impacts of this women-centred programme. Even among

VPP users the studies showed a consistent pattern of male domination which questions the programme's intention of empowering women.

One of the VPP's aims was to be a vehicle to increase income earning opportunities in rural areas and initially it brought significant changes in average monthly income, more benefits accruing to owner-operators than to users (Richardson, Ramirez, and Haq 2000; Bayes 2001; Aminuzzaman, Baldersheim, and Jamil 2003). A rational assumption would be that the substantial economic gains made by women operators would help to pave the way for their empowerment. On the other hand, women frequently do not have control over their phones. Moreover, even where they do, women's sense of empowerment is determined by a multiplicity of social and cultural factors, such that economic benefits may, in reality, create disempowering factors such as a change in household tensions or domestic violence. We have not seen any research taking into account the full social and cultural context within which 'village phone ladies' operate.

While VPP is widely seen as a way out of poverty and the programme is undergoing replication around the world for precisely this reason, we have found reasons to question the validity of this outcome. 'The typical village phone lady has an average income three times the national average' according to a 2005 UN manual advocating replication of the programme elsewhere (Keogh and Wood 2005). Over time, however, with easier and cheaper access to mobile phones, the revenue of VP operators has plummeted. According to Grameen Telecom (cited in Schaffer 2007), 'profits per operator have been declining for years and in 2006 averaged less than \$70. The programme is not dead, but it is no longer a way out of poverty'. In general, the use of mobile phones contributes in a minor way to increasing rural business income. The Bangladesh Market Insight Study (2007), while showing a change in income through mobile telephony among 17% of 'entrepreneurs', also demonstrated that business revenues from mobile phone use remained unrealised for a huge proportion of the rural population (Figure 3).⁵

Despite the apparent failure to sustainably lift incomes through VPP, the company has not entirely abandoned the programme, and has proceeded towards setting up kiosks – Community Information Centres (CIC) – across rural areas which offer such services as online browsing, agricultural and health-care information, digital photography, video telephony, and electronic access to

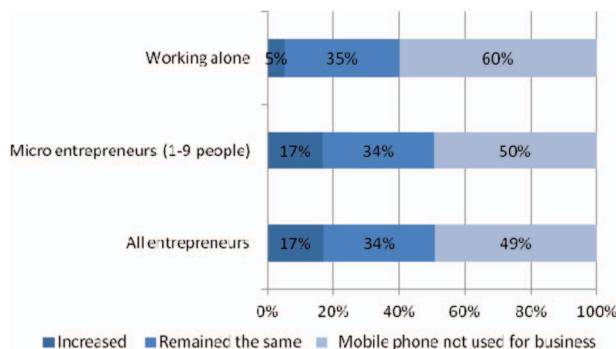


Figure 3. Impact of mobile phones on business revenue. Source: Bangladesh Market Insight study (2007).

government reports and forms. In 2009, there were more than 560 CICs working around the country. As rural women generally cannot access such kiosks, this programme can no longer be described as 'women-centred', the gender impacts are likely to be inequitable, and it is not yet clear how these impacts will affect rural family incomes.

Gender inequality patterns are critically related to the allocation, sharing and control of resources within a household. While more than 90% of the VP owners are female, most operators are not women. Bayes (2001), however, argued that there were positive developments in freedom of spending the phone income (36%), compared to decisions regarding family affairs (16%) and utilisation of GB credit (30%). However, there has been no comparable later study to determine any trend. Further, as with microfinance, there is little evidence that the VPP was able to change the distribution of power in the rural areas where it operated. Aminuzzaman, Baldersheim, and Jamil (2003) found that women owners felt prestigious because of the ownership of the phone, not the ownership of the business. In some cases the female VP owner only took a percentage of the income generated without keeping record of its operation, meaning that she did not even know the potential income from the VP site.

It is widely accepted that VPP provides scope for better access to information for rural women who are otherwise constrained by the restriction of their movement in society. This unfreedom is evident in the rural areas where female operators prefer to have the phone carried to customers' homes or send children as messengers rather than going to places of common gathering. But it is the bazaar that is the centre of information in the rural economy and if female movements are restricted due to social and cultural norms, any assessment of the success of VPP in terms of 'better access to information for economic empowerment' needs robust evidence. Similarly, the CIC kiosks necessarily have significantly less impact on women than men in the context of restricted female mobility. If simple mobile phone usage by rural women confined to home cannot help them move forward to the path of real empowerment, then going to kiosks in the bazaar and using more difficult technology than a mobile phone casts even more gloom on the picture.

Ten years after the VPP was established, the only relatively recent study is the Bangladesh Market Insight Study (2007), which showed that mobile phone usage had spread to 60% of the rural population. The same study found that the overwhelming majority of rural users were males and only 4% were women and it is unclear whether or to what extent these women were involved in any income generating activities. Thus the programme had scarcely made any inroads into male domination of ICT use in the Bangladeshi countryside.

Furthermore, a woman's access to a mobile phone can obscure the extent of her real empowerment if the phone is used mainly (or only) for information on remittance payments. Remittances from labourers exported to the Gulf countries and Europe are one of the major sources of income in the rural economy and, before the mass availability of mobile phones, overseas workers often sent money to their families through intermediaries. Nowadays, with increased rural ownership of mobile phones, communication with emigrant husbands provides families with information that removes the risk of dishonesty among middlemen. A large proportion of both urban (50%) and rural (41%) families have a member living or working abroad (Figure 4) and, for this reason, men might be persuaded to give women the use of a phone (Bangladesh Market Insight Study 2007). Ownership of a

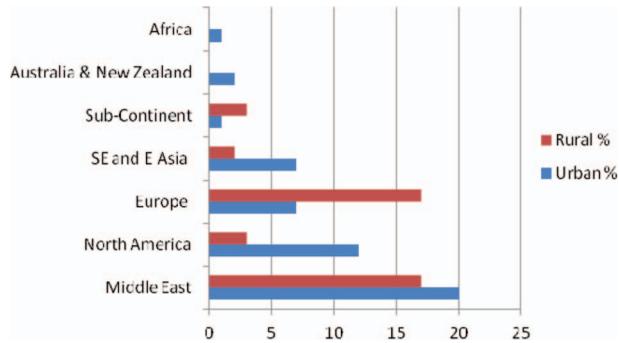


Figure 4. Proportion of urban and rural Bangladeshi families with a member working abroad, by region. Source: Bangladesh Market Insight study (2007).

mobile phone by the wife is more prevalent in couples where the husband resides away from home than among those living together although, given the generally low proportion of rural female users, the numbers involved here are relatively small. The data suggest that even households with migrant workers did not usually allow women to use the phone. Nonetheless, it is important to take this circumstance into account because it influences our perception of gender equity in mobile phone usage in Bangladesh. Where women have access to a mobile telephone, their empowerment may in fact be illusory if they use it only to deal with remittance payments from their husbands. What is not clear, therefore, is the extent to which women who have access to a phone are able to use the technology for their own purposes.

Two sample quotations from the Bangladesh Market Insight Study (2007) may serve to illustrate the way in which social and cultural norms influence women's access to and usage of ICT.

My wife doesn't have a phone. She doesn't need it. She can just use my phone. – male.

Maybe I wouldn't have used a mobile, if my husband didn't live abroad. So I am free to use it. Everyone in this house also think that it's not good for women to have mobile. I can keep one since my husband lives abroad. – female.

The sentiments expressed above echo those of Aminuzzaman, Baldersheim, and Jamil in 2003:

For women, the VP was an important channel for family contacts and communications, especially with husbands living abroad as migrant workers. Otherwise, the VP has had little impact on gender relations. Women represent only a small proportion of users, and the telephone remains predominantly an instrument of communication for males

In other words, women who live without a male partner are more likely to be able to control their access to communications technology, but this is by no means automatic or widespread. Even when they do have access, they may not be able to utilise the technology for activities beyond family-related or 'traditional' female occupations.

There are two areas in which we have no information to date about gender impacts of mobile telephony in Bangladesh. The first is whether economic empowerment of women might be more successful if the women-targeted

programme embraces the idea of male inclusion. In a country with a highly patriarchal system, men lack understanding of the potential benefits of female empowerment in the household economy. As discussed in the previous section, the 'power relation' within the household is transformed widely into the public domain as well. One advantage of telephones is that they only require a small amount of training (in reading numbers) in order to provide illiterate women with access to information that they could not obtain from written sources. It is potentially a powerful tool, but not unless its introduction is combined with interventions designed to break down societal and cultural restrictions on women's ability to identify their information needs and to analyse and act upon the knowledge gained. The VPP failed not only because it clashed with patriarchal socio-cultural norms but also due to its design. Strategies to implement the programme in a 'gender neutral' way need to acknowledge the negative effects of 'gender blindness' in women-focused programmes and consider male inclusion to confront and change female disadvantage (Mayoux 2005).

Secondly, ICT has the potential to create a social network structure that might contribute to empowering rural women, therefore affecting not only poverty reduction but also the poverty reduction mechanism. We saw in the previous section that rural women are generally only indirectly connected to 'bridging networks' through their 'bonding network' to a male. Yet ICT, in this case the mobile telephone, has enormous potential to connect women to the world outside the *bari* through 'bridging networks' without depending on a male relationship. Rural women with genuine access to the technology could maintain confidentiality and self-determination in their communications. Workers in non-governmental organisations providing information (such as health) and educational services in rural areas could gain easy access to women from a distance, making communication not only convenient, but also confidential. In 2006, for example, Grameenphone launched a health line service and, as of December 2009, it had provided 5.6 million people with free health care services for mothers and infants and conducted an awareness campaign on the immunisation programme (Grameenphone 2009). Confidentiality is a major issue in Bangladesh's patriarchal rural society. While such networks may not break the pattern of confinement, and the health line service makes no attempt to break down the gender division of labour, more extensive networking could be a step towards empowering women in making decisions concerning their well-being and rights. Social, cultural and religious norms do not change overnight, but access to better information and communication with the outside world could be start in that direction, as Hunt and Kasynathan (2001) suggested in relation to the formation of women's groups. Creation of a social network beyond the *bari* is something that ICT can facilitate, as it removes the barrier of distance for women who cannot travel.

Conclusion

The introduction and proliferation of the mobile phone and the intensity of women's inclusion in this process has sparked a technological revolution in Bangladesh. The discussion in this paper bears on current debates about the transformative capacity of ICT through both income generating activities to alleviate poverty and empowerment of rural women. But there remains a major concern that the full benefits are not realised in light of inequalities between the sexes. On the evidence

available from this review of research to date, our answer to the question posed in the title of this paper – paving the pathway for women’s empowerment? – must be negative. Technology alone, even when deployed in women-targeted programmes, cannot alter the fundamental social relations into which it is introduced.

The nature of poverty cannot be framed simply as a problem of income, without taking into account the distribution of and control over resources. Inequality in gender relations can weaken any effect ICT might have in alleviating poverty in developing countries like Bangladesh, simply because it excludes a large percentage of the poor – namely women.

Previous studies have acknowledged the success of VPP in poverty alleviation at the early stage of the programme, but they have not analysed the structural features of unequal gender relations. Moreover, the promise of poverty alleviation with income from the VPP has moved far ahead of the evidence. Maintaining connections with the wider world from within confinement is a positive idea for rural women, but the social network literature suggests that, for women, access to wide-ranging ‘bridging’ ties remains indirect and dependent on confined ‘bonding’ ties with men. Such dependence perpetuates the gender differentiated consequences for every stage of life and thus the claim of ‘women’s empowerment’ through the VPP remains unsubstantiated.

This paper raises questions about the implications and outcomes of mobile phone usage in relation to prevailing social and institutional norms and the extent to which the desired outcomes are influenced or constrained by these norms. Women’s inclusion in development initiatives has tended to focus on income rather than on the quality and meaning of participation. Here the potential strength of the mobile phone technology lies in its ability to facilitate women’s participation in wider networks through direct ‘bridging ties’ that provide them with access to and control over information and knowledge, without first forcing them to confront the norms of confinement and economic passivity.

Most importantly, researchers need to acknowledge that simple deployment of ICT within a gendered social framework cannot drive fundamental shifts in that framework. This point attracts attention to the design of development initiatives and mechanisms. More research is needed on pathways to empowerment through the relationship between gender and development and the use of ICT as a tool that assists women to take greater control at household level and promotes their empowerment in society.

Here we present some of the pressing questions that need to be addressed in future research:

- It has been a decade since any in-depth analysis of the VPP has been done and the earlier research rarely touched upon the gender perspective. To understand the programme from a gender point of view, we need to look deeper. Do women use the health service through mobile phones and what difference has it made to their lives? Which groups of women have or have not been reached via the mobile phone services? Have there been changes to women’s ability to control their access to the technology and to the types of information sought and received? Have there been changes to family relations over the past decade?
- There has been a lack of research taking into account the social and cultural contexts within which the VPP operates. What policy or project design would

enable ICTs to be introduced in a way that really enhances women's ability to identify their information needs and act upon the knowledge gained? How could women gain access to 'bridging networks' through mobile telephony in a way that reduces their dependence on men? What interventions have already taken place and how successful are they?

- Although the VPP has gained unprecedented recognition all over the world as an income generating service for rural women (the majority of the poor), we have seen that while rural women's income from VPP has declined over time, it remains highly profitable for Grameenphone. Moreover, the evidence to date is that increases in business income through phone use have been negligible. How true is Grameenphone's claim that 'this program has enabled making changes in the life of 2.7 million VP ladies across 50,000 villages in Bangladesh'? In whose interest does the VPP really operate?

Incorporating women in the digital economy in a way that empowers them requires a reassessment of women's participation that avoids 'gender blindness'. This reassessment is a prerequisite if women are to take advantage of the ICT revolution in Bangladesh, otherwise polarisation in gender differentiation will widen over time.

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Notes

1. The *bari* is an extended family compound comprising several households, normally belonging to a single family group. Upon marriage, most rural Bangladeshi women leave their home to live in the *bari* of their husband's family.
2. The GII combines the former Gender Development Index and Gender Empowerment Measure.
3. 'A study in BRAC primary schools, which have explicit goals in terms of gender equality, indicates that girls are less likely to get the attention of teachers, less likely to have their experiences reflected in the national textbooks, less likely to be expected to do well in mathematics and are, therefore, less likely to succeed.' (Schurmann 2009).
4. 'According to Kamal Quadir, CEO of CellBazaar in Bangladesh Although VPP phones made up just 2 percent of the company's subscribers, they generated 17 percent of its revenue.' (The Aspen Institute 17 February 2011).
5. The survey question was: 'as a result of using a mobile phone, did your business' revenue increase, decrease or remain the same?'

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