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TELECOM USE ON A SHOESTRING: EXPENDITURE AND PERCEPTIONS OF COSTS AMONGST THE FINANCIALLY CONSTRAINED

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Telecom use on a Shoestring: Expenditure and perceptions of costs amongst the financially constrained

DRAFT

September 2006, Version 3.0

Avanti Moonesinghe, Harsha de Silva, Neluka Silva & Ayoma Abeysuriya

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Telecom use on a Shoestring: Expenditure and perceptions of affordability amongst the financially constrained

Avanti Moonesinghe, Harsha de Silva, Neluka Silva & Ayoma Abeysuriya

September 2006, Version 3.0 (with revisions for WDR)

1.0 Introduction

It is often claimed that access to telecommunication facilities is a propeller of economic prosperity in developing countries. Mobile phones in particular are considered pivotal in encouraging growth. Prahalad (2004) asserts that defining change in the world's poorest economies will be led by access to communications and not through the evolution of IT as was the case in the advanced countries of the world. A study by the London Business School has also found that, in a typical developing country, an increase of 10 mobile phones per 100 people would boost GDP growth by 0.6 percentage points (Waverman et al., 2005). However, despite the positive benefits of telephony, many people in developing nations are held back by a diverse set of factors – such as the lack of connectivity in rural locations, duties and taxes imposed by governments, the costs of handsets and the cost of services. Once the hurdle of access to communication is overcome, people in developing nations still have to contend with the costs of services. Usage costs can play a large role in determining the affordability of, purposes and the frequency with which people use phones.

As Milne (2003) states, although intuitively it is understood what affordability means, it is something that is difficult to define objectively, given "variation[s] in people's needs as well as resources" and a "poor correlation between affordability and acquisition." Milne goes on to state that it is "widely accepted that basic telecoms should be affordable, but what this means in practice is rarely defined ([and] far less measured). Affordability is determined by, inter alia the ability to pay a price without suffering hardship and how badly the good or service being bought is needed.

Recognizing the problems associated with defining 'affordability', there is no doubt that the cost associated with using these services plays a role in this variable. Milne (2006; p.8) discerns two distinct levels of 'affordability,' or rather the lack of affordability. The lack of affordability can be seen in terms of the "'barrier' effect, which prevents people from owning a phone, or from using shared access phones other than in emergencies," as well as the "'inhibitor' effect, which discourages people from making as many calls as they need to even when they own or have access to a phone." This study addresses the second level, looking at the 'affordability' of telecom *services*, rather than that of acquiring a telephone; it examines perceptions of affordability amongst low income telecommunication users based on a pilot study carried out in India and Sri Lanka in 2005. It also examines perceived changes in behavior resulting from changing prices.

Section 2 presents the background to the study and describes the methodology used. Section 3 examines the findings of the study, looking at the form of access (i.e., fixed, mobile or public access telephones), the benefits of telecom access for those studied, the expenditure on telecommunications and finally affordability of services and cost related demand. Section 4 provides concluding remarks.

2.0 Background and Methodology

This paper draws on a subset of findings of a larger knowledge, attitude and practice study of the telecom usage patterns and behaviors of a sample of 'financially-constrained' 'users' in 11 localities in India and Sri Lanka, entitled 'Telecom use on a shoestring: A study of financially constrained people in South Asia'.

This paper focuses on the responses to two particular questions in the survey.

a) How expensive do you find the cost of using the phone that you use in general?
b) If the cost of using the phone that you are using was reduced by half, how would you change the usage of your phone in general?

In order to understand the responses to these two questions, the following aspects were also considered:

a) What mode(s) of communication the respondent used (fixed, mobile, public access[1])
b) The benefits received through access
c) The respondents' monthly communication expenditure

Face-to-face interviews were conducted in both countries with a total of 3,199 respondents (India: 2,099; Sri Lanka: 1,100), using a largely closed-ended questionnaire, which took on average 45 minutes to administer. The study was conducted during 2005, with data collection taking place in April and May of 2005. Seven localities were surveyed in India and four in Sri Lanka (See Table 1). With the exceptions of Mumbai (India) and Colombo (Sri Lanka), interviewees were spread across urban and rural areas of each locality. The questionnaire was translated into, and conducted in, five local languages (Hindi, Malayalam, Oriya, Sinhala and Tamil).

Table 1 Distribution of respondents amongst centers studied

Country	Localities (State/Province): Urban/rural	Number of respondents
India	Mumbai (Maharashtra) : Urban	304
	Kasargod (Kerala) : Urban, Rural	300
	Sivaganga (Tamil Nadu) : Urban, Rural	300
	Gorakhpur (Uttar Pradesh): Urban, Rural	300
	Cuttack (Orissa): Urban, Rural	300
	Dehradoon (Uttaranchal) : Urban, Rural	295
	Neemuch (Madhya Pradesh) : Urban, Rural	300
Sri Lanka	Colombo (Western Province) : Urban	206
	Jaffna (NorthernProvince) : Urban, Rural	282
	Hambantota (Southern Province): Urban, Rural	301
	Badulla (Uva Province): Urban, Rural	311

[1] Including public call offices (PCO's), public payphone booths, communication bureaus and post offices.

Total	**3199**

The fieldwork was conducted by a multinational market research company, which deployed its own team of trained enumerators in Sri Lanka and India. The field research team (20 interviewers, 4 supervisors and 1 field executive in Sri Lanka; 56 interviewers, 14 supervisors and 5 field executives in India) took part in training at the local offices. Some of the enumerators were originally from the locations where the study took place. A team consisted of a number of enumerators and one supervisor who conducted fieldwork in an assigned location.

For the purposes of this study, the 'financially-constrained' were defined by two parameters; firstly, those with household income levels of approximately USD 100[2] or less; secondly, through a measure of socio-economic classification. In Sri Lanka, those belonging to either socio-economic classification[3], or 'SEC' group 'B,' 'C,' 'D' or 'E' were included in the sample. In the Indian sample, a different, but comparable socio-economic classification is used. Socio-economic classification of the 'financially-constrained' in India, according to the natural distribution of population, is divided among urban and rural settings, each consisting of different SEC groups. In urban India the 'financially-constrained' can be classified as SEC 'B,' 'C,' 'D' and 'E,' while rural 'financially-constrained' in India can be classified as 'R1,' 'R2,' 'R3' and 'R4' based on the profession and type of dwelling[4] of the chief wage earner. In this study this division was followed for the socio-economic classification of Indian users.

'Users' were considered as those that had used a telephone in the preceding three months, either through a self/family owned phone or through a third party's phone.

[2] INR 5,000 in India and LKR 10,000 in Sri Lanka.

[3] This is a standard classification, based on occupation and education level of the chief wage earner.

[4] That is either made of cement, concrete and/or bricks (*pucca*) or of mud and/or wood (*kuchha*).

Respondents were chosen from selected households[5] based on KISH sampling techniques[6] to ensure random sampling as well as adequate representation of gender and age groups as in their actually existing ratios[7].

India and Sri Lanka are located in South Asia, the largest concentration of poor people in the world. Both countries have experienced rapid telecom growth within the past five years. It was hoped that this study might bring out the differences, if any, in the use of telecommunications amongst 'financially-constrained' users in the two environments. The seven different localities in India and the four in Sri Lanka were selected, not to obtain a representative sample of either of the two countries, but to capture the diversity *within* the two countries, taking snapshots of 'financially constrained' users in eleven very different markets, in terms of telecommunications access, economy, population and geography. For this purpose, the 'Indian' sample was further divided into two 'regions' for some of the analysis: 'Northern' India (Dehradoon, Gorakhpur and Neemuch) and 'Southern' India (Cuttack, Kasargod, Mumbai and Sivaganga). The rationale for grouping the locations in this manner was the broad similarities in socio-economical qualities of the locations. This was done in an attempt to preserve some of the diversity of the locations, as well as to split the sample more evenly for comparison.

[5] A maximum of five households were selected: starting from one 'starting' household that was randomly selected from the electoral list.

[6] The KISH grid is a random sampling technique to select one respondent from many eligible respondents in a household. In this case, names, gender and ages of all household members using phones (in the preceding 3 months) were recorded (in descending order of age). Based on the number of eligible respondents in household and the household contact number (n^{th} interview of each starting point), a random number sheet was used to select one of the many eligible respondents. This ensures that respondents selected are not skewed to any gender or age, but are reflective of reality.

[7] Only respondents over 18 years of age were interviewed.

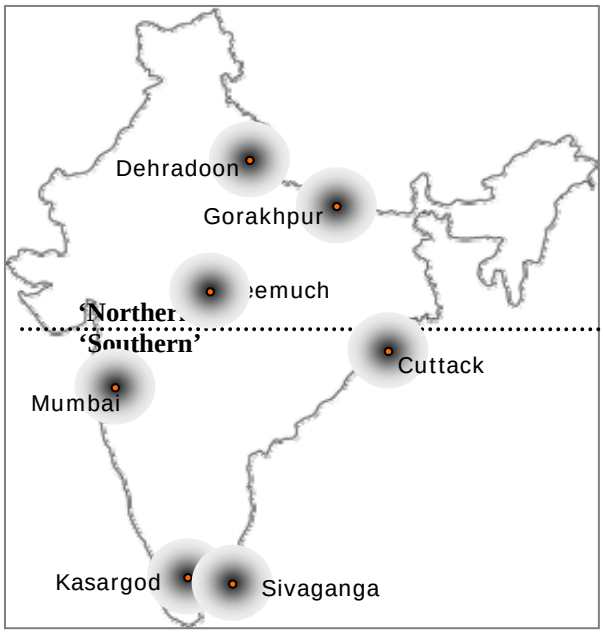


Figure 1 Indian localities

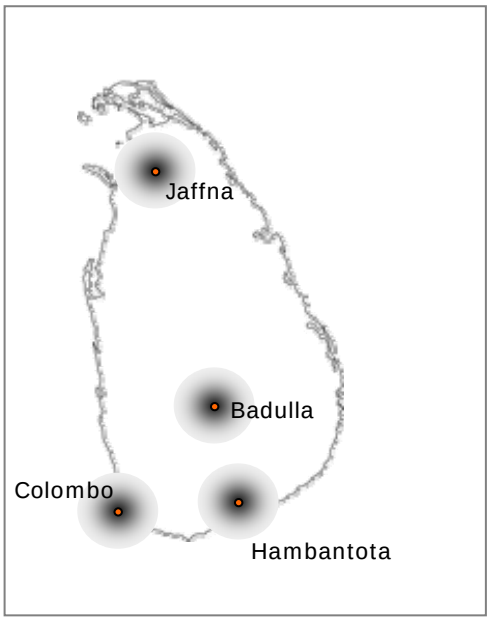


Figure 2 Sri Lankan localities

Limitations

It must be emphasized that the findings from this study are *not* meant to be representative of India and Sri Lanka as wholes. As stated above, eleven different localities were purposively selected to capture some of the diversity that exists within these two countries. A true representation would only be obtained through a pure random sampling according to the natural distribution of the population in the countries, rather than purposive sampling which was undertaken to cover a priori heterogeneous locations.

The survey asked respondents about their calling patterns, in terms of average number of calls made and received per month, etc. to what destinations, for what purpose. It is recognized that the accuracy of this information is problematic because it is based on recollection, thus the data obtained is only an indication of individual calling patterns, and should be treated with caution. Real calling patterns can only be obtained from billing records; this was not done in this study for privacy reasons. In any case the option of analyzing billing records exists only for a small percentage portion of the sample, the 26 per cent of fixed phones owners and the 2 per cent of postpaid mobile owners.

Respondents were asked to indicate their monthly income for the purpose of analysis, including income from all sources, which means that the income reported is that for the household. While respondents were asked to consider income from all sources, it is still plausible that the income group indicated does not reflect true income levels. For instance, remittances, which can account for substantial portions of income in developing country households, may not have been included.

It is recognized that considering the information that this survey sought to reveal, a questionnaire containing many more open-ended questions would have been optimal. However, given the size of the sample, as well as the depth of the questionnaire, this would not have been a practical approach. For this reason, most of the questions were closed-ended, but respondents were given many non-exclusive options to choose from.

The analysis shows an over representation of 'unemployed' persons and 'housewives' which could not have been avoided unless a quota sampling was adopted by occupation categories.

One significant weakness of this study is that it does not study the financially 'unconstrained'. Conclusions about the behavior of the financially-constrained will be validated only if the financially-'unconstrained' are studied in comparison, that is, through a sample which also covers the SEC A's and those with monthly household incomes over USD 100 per month. Furthermore, it is not possible to say whether behavioral patterns identified in this study are also relevant to the financially-constrained in more developed markets, or are unique to the financially-constrained of South Asia alone, without studying comparable data for those markets as well.

Another limitation is that the present study does not look at non-users among the financially-constrained, in particular, how far their non-use (or low levels of use) is associated with financial constraints.

Despite these limitations, this study is the first of its kind in a series of user studies that is being repeated over time and across locations through the LIRNEasia research network.

In addition to providing a rich source of information, contributing to the understanding of use of telecom services by the 'financially-constrained' in South Asia, this first phase also serves as a pilot study. This pilot has drawn attention to areas where modifications and improvements to the study design can be made, which may not have been apparent if a first round of research were not carried out.

3.0 Findings

3.1 Forms of Telecommunications Access

While access to communication is a given in the developed world, half the world's population are beyond the reach of any form of telecommunication. According to *The Economist* (2004), in the last 25 years, telephone penetration has been growing faster in low and middle-income countries in comparison to high-income countries, mostly due to saturation in developed country markets. In India the number of mainline phones per 100 people as at September 2005 was 4.07(ITU, 2004; pp.A8-A9), while mobile penetration per 100 was 5.96 (Telecom Regulatory Authority of India, 2005); as at September in Sri Lanka there were 5.14 main line phones per 100 people (ITU, 2004; pp.A8-A9) and mobile penetration was 15.85 per 100 (Samarasinghe, 2005; CBSL, 2005; Special Statistical Appendix: Table 1).[8]

The survey's results reflected these patterns, with greater mobile access in Sri Lanka than in India, but both countries demonstrated greater fixed phone access (not ownership) amongst the respondents than indicated by the above statistics, as seen in Figure 3 below.

[8] The statistics quoted are the most recently available ones for a comparable time period; by the time of publication of this paper, the numbers will have changed by far, however this study was implemented in the months of April and May of 2005.

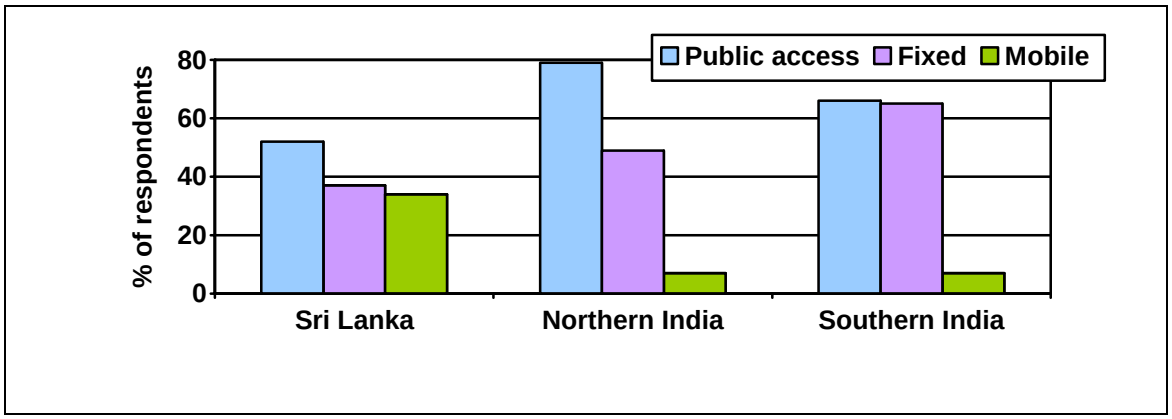


Figure 3 - Access to public access phones, fixed phones and mobile phones in Sri Lanka, Northern India and Southern India.

It is evident from Figure 3 that respondents accessed more than one form of telephony – with public access being the most common mode of communication and fixed phones coming in second. In Sri Lanka, mobile phone usage lagged behind public access and fixed phones, yet mobile phones were used by a significantly larger percentage of respondents in Sri Lanka than those in either Northern or Southern India. However, as shown in Table 2 there appears to be a shift away from public access phones to fixed phones and mobile phones amongst respondents whose household income was between USD 50 – 100 a month (the higher income category). The trend towards greater fixed phone and mobile usage can be explained as the result of greater ownership of telephony by those in the higher income category. Mobile phones were also used by a larger number of respondents living in urban areas of the two countries than in the rural areas. There could be a number of reasons for this discrepancy, such as lack of mobile service in rural areas, relatively high cost of handsets as well as that of usage, poor understanding of mobile phones or the lack of advertising by mobile operators in these areas.

Table 2 – access patterns for different modes of telecommunications based on household income category.

	Sri Lanka		Northern India		Southern India	
Monthly income	**USD < 50**	**USD > 50**	**USD < 50**	**USD > 50**	**USD < 50**	**USD > 50**
Base	219	881	625	474	462	441
Public access	63	49	83	74	75	56
Fixed	26	40	48	56	61	69
Mobile	31	35	4	8	9	26

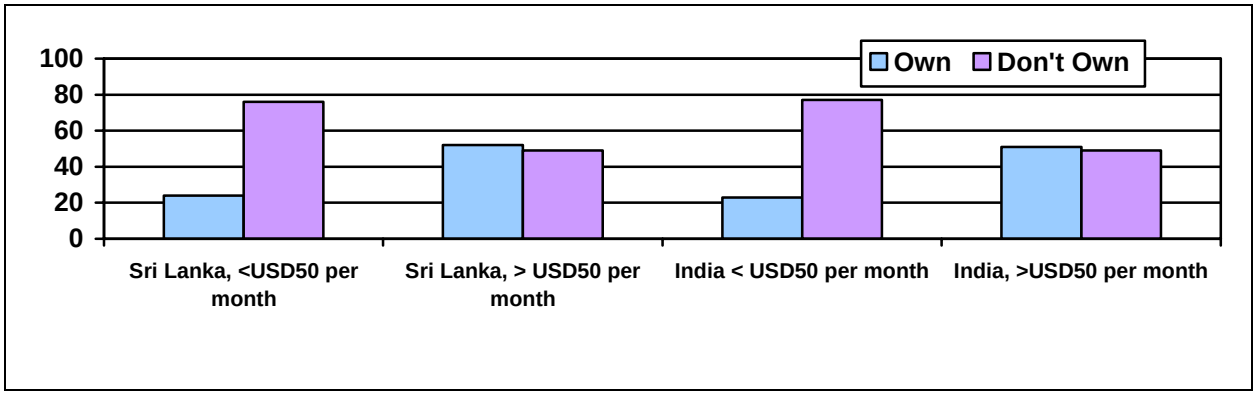


Figure 4 – Phone ownership by household income group in Sri Lanka and India

Phone ownership differences between the two income groups amongst users are significant. Amongst those whose household income was less than USD 50 a month, 76% and 77% of the survey's respondents in Sri Lanka and India respectively did not own phones. However, across the next income group, USD 50 – 100, the percentage of those who didn't own phones fell to 49% in both countries. Ownership of phones in the higher income group was more than double that of the lower income segment. The preferred form of telephony, however, differed between the two countries. In Sri Lanka phone owners in both income categories marginally preferred mobile phones to fixed phones, whilst in India fixed phone ownership was more prevalent by a significant number.

3.2 Benefits of Telecommunications Access

Amongst the survey participants, social networking appeared to be the single most important benefit of having access to or owning a phone. Over 80% of the group utilized their telephones to make calls locally to friends and family. Phones were also used to transmit and receive messages through a third party– especially amongst users in urban areas. Only a very small percentage of the respondents indicated using their phones for business purposes. This result also lends itself to the interpretation that, amongst this income group, "business" transactions may be interlinked to, and overlapping with,

telephone communications with family and friends. Therefore, a "social" call may also involve some degree of communications relating to work-related or business dealings. On the one hand, this may be construed as the result of the over representation of housewives and unemployed persons in the survey group because, approximately a quarter of the Southern Indian urban users of mobiles and fixed phones also undertook and arranged financial transactions over their phones. On the other hand, a user survey in Gujarat also demonstrated that business use is confined to a small minority (among the poorest segment), even with a larger and more balanced sample (Souter *et al* 2005: 14). But the results of the current study should be viewed with some degree of caution, recognizing the limitations in the sample and the difficulties of recording and recalling telephone habits.

3.3 Expenditure on Telecommunications

A majority of the survey respondents spent approximately USD 1 – USD 4 a month on their communication. Expenditure figures, however, were not ascertained from phone bills but based on the respondents' ability to recall their monthly phone costs, and therefore, the figures stated should be treated with a degree of caution. Additionally, in the case of fixed and mobile owners, monthly expenditure may include the use by other people within the household, especially in the case of fixed phones (which tend to be used less as an individual phone; furthermore, monthly expenditure reported is likely to be the average monthly bill). In the case of public access users, expenditure reported is more likely to be on an individual basis. Thus caution must be taken in comparing expenditure figures.

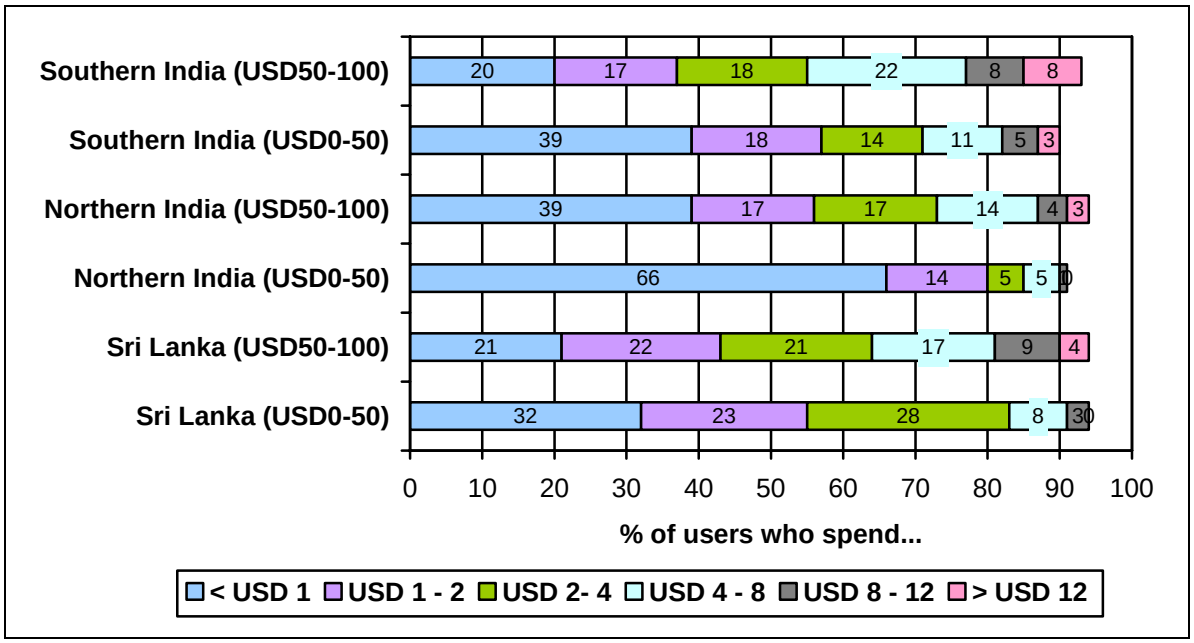


Figure 5 – Monthly Expenditure (USD) on telecom services by fixed and public access phone users

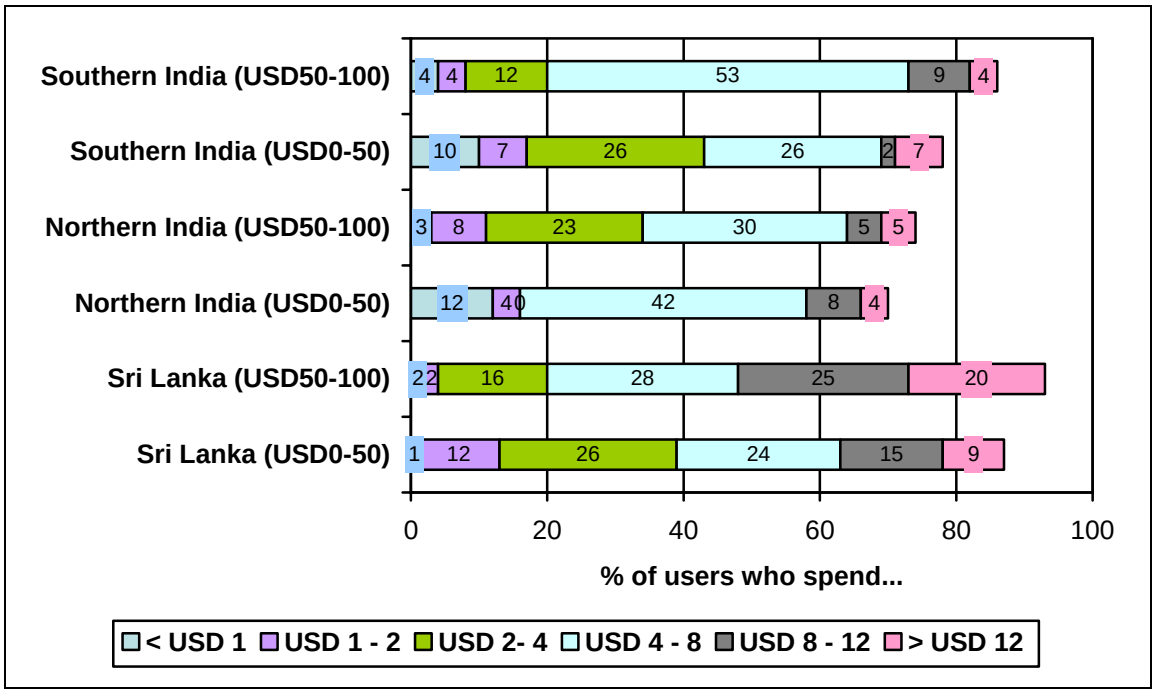


Figure 6 - Monthly Expenditure (USD) on telecom services by mobile phone users

Over a fifth of fixed and public access users whose monthly household income was between USD 50 – 100, spent at least USD 4 a month on their phone calls; if the entire household expenditure were to be considered, this expenditure might constitute a

minimum of 4% of the household's monthly income. Over 35% of the survey's mobile phone users spent at least USD 4 a month; again if the entire household expenditure were to be considered, for those in the lower income bracket of less than USD 50 this would constitute at least 8% of household income. On average around the world, it has been demonstrated that people spend approximately 2%-3% of their incomes on telecommunications. This figure has held true for whole countries, regions, cities, and on average to households (Intven, 2000:14, Milne, 2006). In the current study, the lower income segment, there was a greater percentage of people spending more than USD 4 a month in comparison to the higher income segment, which would imply the household as a whole spending more than 8% of it's household income on telecom services . New research around the developing world is uncovering similar findings. A recent demand study in Nigeria has indicated that on average, Nigerians could be expected to spend 8% of their household income' on telecom services (Intelecon, 2005; p. 2). Similarly, a recent ten country study by *Research ICTs Africa!* finds that on average, communications costs in Africa amount to up to 10% of income (Gillwald, 2005; p.13). Souter et al (2005) find that in Tanzania, amongst the lower income categories, expenditure on telecom services to be in the range of 9.5-13.9 % of household income; however the same study finds expenditure by the lower income categories in Gujarat (India) and Mozambique to be in the range of 2.8-5.6% of household income. The study finds that the lowest income groups in all three contexts (that is, Tanzania, Gujarat and Mozambique) spend larger shares of their incomes on telecom services, even though the higher income groups spend larger nominal amounts. Nevertheless, the authors note that these figures may not be entirely accurate, because of the complexities of identifying 'real' income in the low-income group etc. (Milne 2006), and the difficulty in relating individual expenditure to household income. Theoretically, it would be appropriate that, with the rise of income, there would be some rise in the expenditure on telephony. Further research will be required to substantiate this initial finding.

3.4 Affordability and Cost Related Demand

Perceptions on telecommunication affordability and cost-usage patterns varied depending on the mode of access used by the respondents. Those who indicated that the cost of telecom services was 'affordable' are compared with those who indicated that the cost was 'high'. Similarly, those who indicated that they 'would not change usage' if costs came down by half are compared with those who indicated that they would change their use in some manner .

a. Fixed phone users

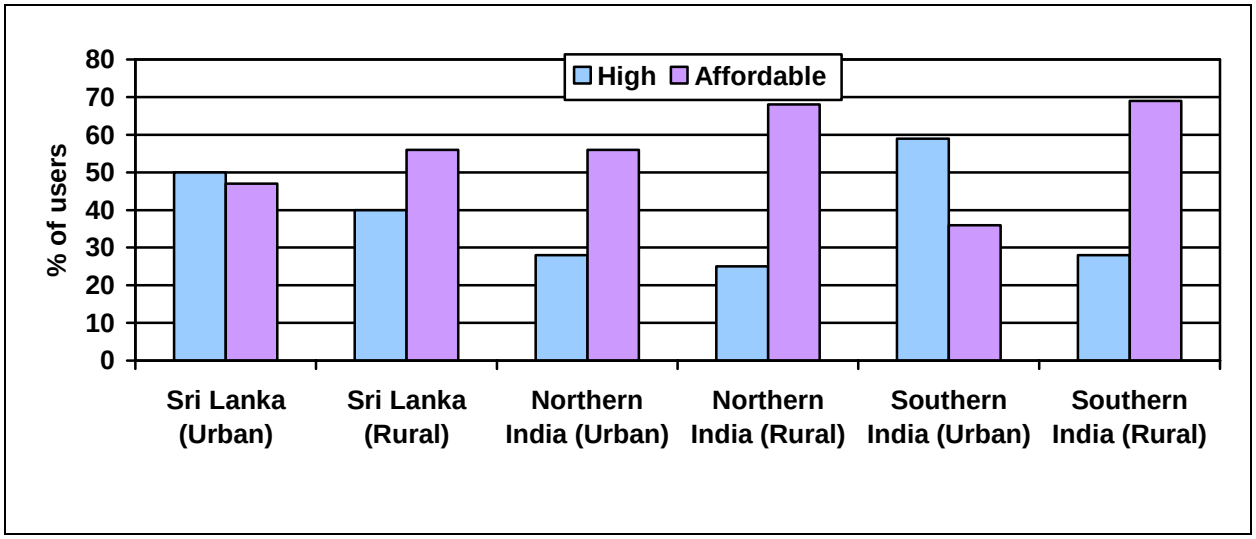


Figure 7(a) – Cost perceptions amongst fixed phone users

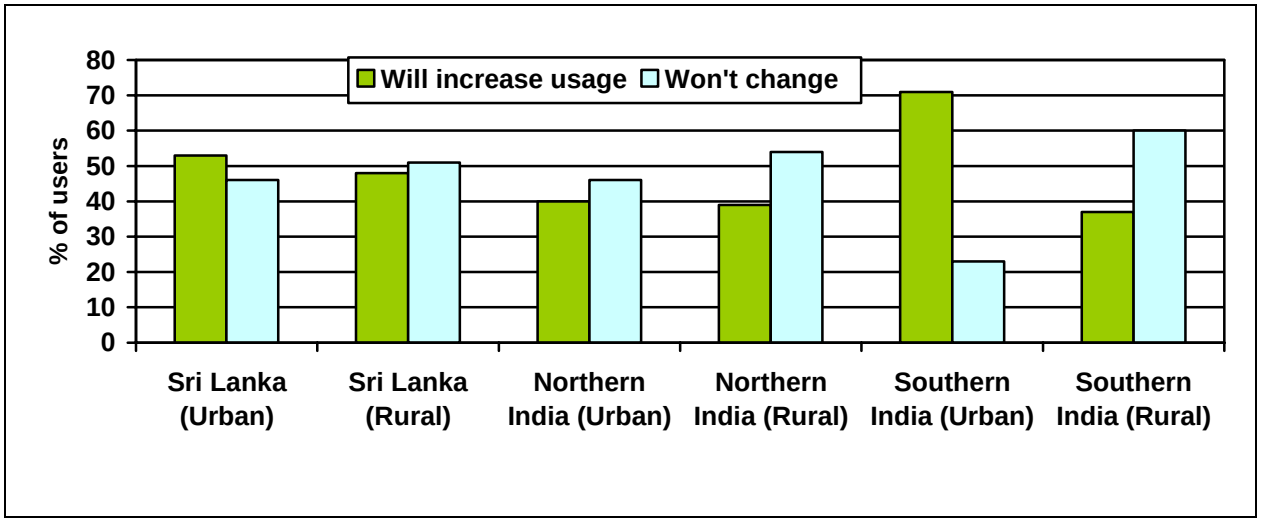


Figure 7(b) – Indications of change in use is cost of service were halved, amongst fixed users

Across the rural localities that were surveyed, a greater proportion of respondents indicated that they considered costs of fixed phones to be affordable. In both urban Sri Lanka and Southern India, a larger percentage of users found costs to be high – Northern Indian urban respondents were, however, an exception with less than 30% of this group stating that the cost was 'high.' In keeping with their perception of affordability, rural users in all three centers and users in urban Northern India stated that they would not consider changing their usage patterns if the cost of telephony were halved. In Sri Lanka this could be explained by the frequency of calls made by respondents in urban and rural settings. Urban users indicated a greater frequency of calls a month – between 6 – 40 calls – while most rural users make an average of 1 – 5 phone calls each month. Therefore, affordability amongst rural Sri Lankan respondents could be attributed to both a lower usage of phones for essential purposes and also an implicit telecom/transportation trade-off. In the case of India the Access Deficit Charge enabled costs of rural Indian subscribers to be subsidized by phone operators. This charge is a compensation for the difference between actual cost of providing a service and mandated lower tariffs for providing subsidized access service to a class of subscribers (Malik & de Silva, 2005).

b. Mobile users

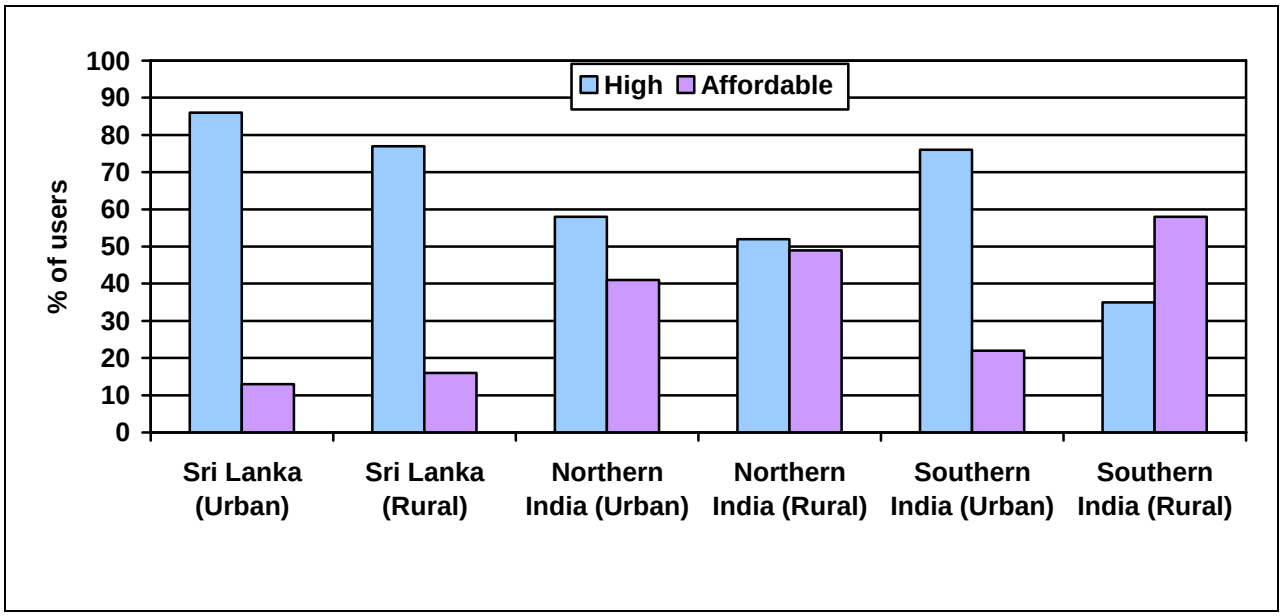


Figure 8(a) - Cost perceptions amongst mobile phone users

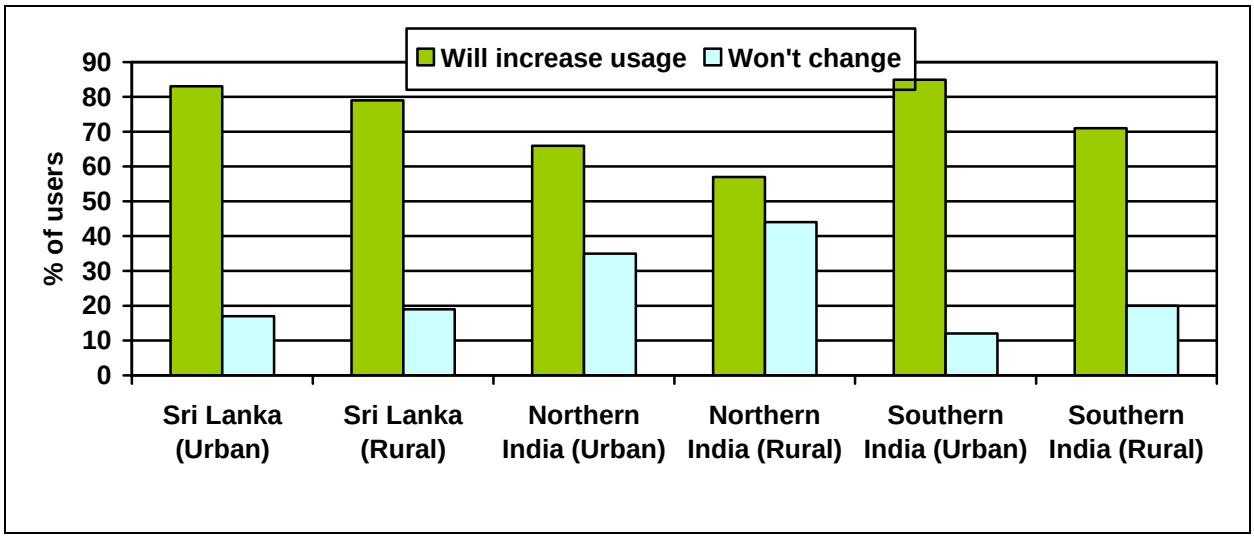


Figure 8(b) - Indications of change in use is cost of service were halved, amongst mobile users

A majority of the survey participants who use mobile phones found the cost of communication to be high – with the exception of users in rural Southern India. Most mobile owners and users who were surveyed, chose this particular mode of communication primarily for its convenience and constant availability. Those who had purchased a mobile did so because of its faster deployment time, the ability to carry it around and use it at anytime, and for its better network and connectivity (an aspect that was valued comparatively more by the rural communities surveyed, than those living in urban areas). The cost of communication appears to have been a secondary issue for mobile users. In India – both Northern and Southern – the mobile phone appears to be viewed as a luxury item as well, since respondents indicated that using a mobile phone improved their social status and that it was considered fashionable. *The Economist* (2005) draws attention to the fact that the tendency to view a phone as a status symbol in developing countries is driven by the fact that people in poorer nations have to spend a larger proportion of their income on their handsets that those in the rich world. For instance, approximately 33% of mobile owners in India were using second hand handsets in comparison to only 4% in Sri Lanka.

Despite cost of services being a secondary consideration, respondents in both rural and urban localities in both countries indicate that they would increase usage if costs were

halved. This suggests a greater elasticity of demand in terms of mobile phone usage – which suggests that mobile phones are still viewed as a luxury item as in the case of the respondents in India.

c. Public access users

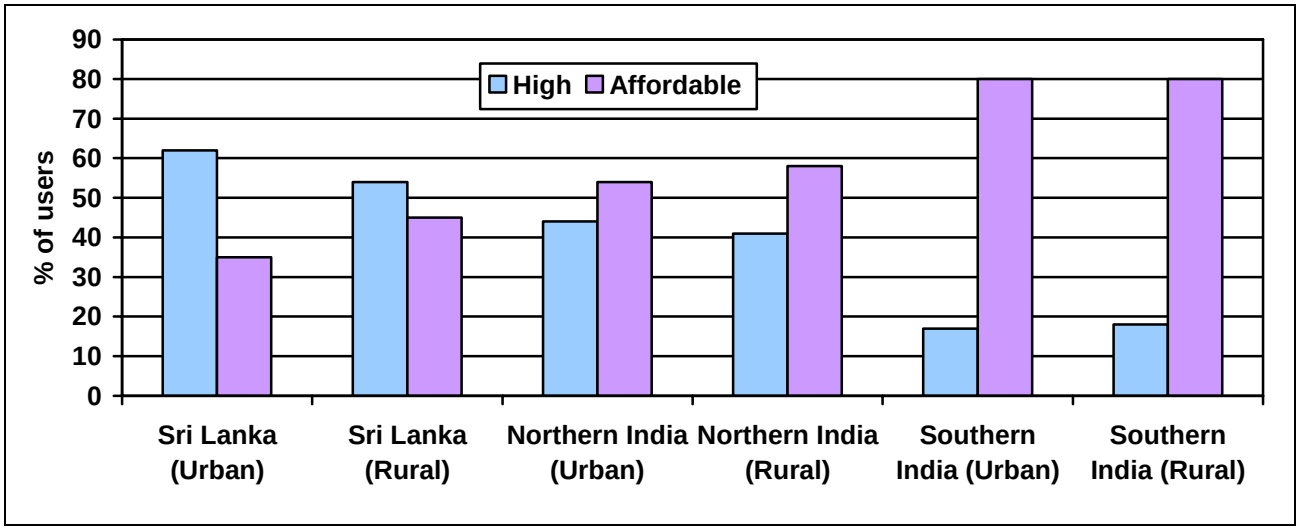


Figure 9(a) - Cost perceptions amongst public access phone users

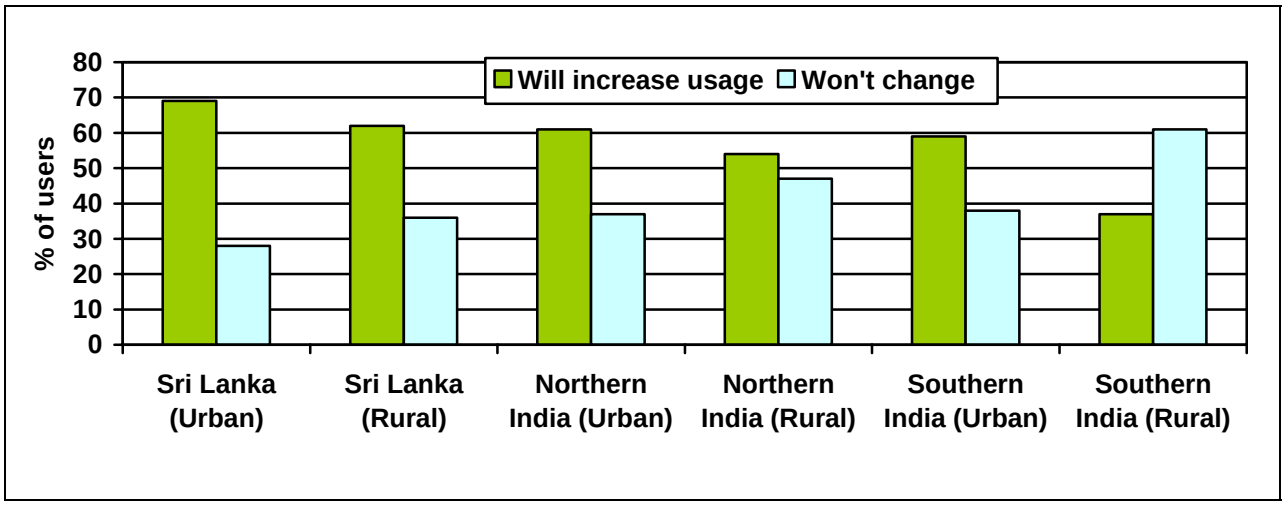


Figure 9(b) - Indications of change in use is cost of service were halved, amongst public access phone users.

Although the more Sri Lankan public access phone users found the cost of communication to be high, a majority of the respondents in India, in contrast, stated that public access costs were affordable. In all locations the majority of public access users

stated that they would increase phone usage if costs were halved – with the exception of the Southern Indian rural respondents, who found costs to be affordable and were not inclined to increase usage even if costs were reduced.

The Sri Lankan example though, suggests that costs may be artificially maintained at a higher level by the middleman because communication bureaus (the Sri Lankan equivalent of the Indian public call office, or PCO – the most commonly used form of public access in both countries for *making* calls) have to pay normal tariffs (they get no reduced rates like in India where PCOs get discounted rates), so they charge the regular rate (that a regular fixed owner would pay) as well as their margin.[9] The implication that usage would increase if costs were reduced indicated that public access users in Northern India and urban Southern Indian respondents were not using this mode of communication to its optimum. A possible reason for this could be mobility issues when accessing a public access phone or waiting times for calls – and a fall in costs could probably motivate these respondents to overcome these hurdles in order to increase the frequency of their calls.

4.0 Conclusion

As Ureta notes, "communications are not a completely different kind of expenditure, but forms part of the system of products and services on which families and individuals use their incomes in everyday life, and therefore needs to be factored in to the monthly budget. Access to communications in contemporary society is no longer a luxury, but constitutes a need among other needs" (2005, 23).[10] Yet, the notion of affordability, as

[9] This could also have something to do with the large number of PCOs in India, and hence the greater use of PCOs in the country. As at December 2004, there were 2,531,000 PCOs in India **(**Singh: 2005)

[10] Ureta argues that "Even in the poorest societies, as we see in the case of Nepal, families devote a certain part of their income to communications, because using them forms a compulsory part of what it means to live in contemporary societies" (2005: 23).

this paper has demonstrated, inevitably determines the way in which expenditure for communication is allocated.

This being said, Milne (2006) notes that a high percentage of income spent on telecoms can imply one of two situations: 'the service is highly valued (possibly increasing well-being by substituting for other spending), or equally that it is essential and highly priced (possibly, reducing well-being by displacing other desirable spending).'

The perception of affordability is quite divergent amongst rural and urban respondents in India and Sri Lanka, and also amongst users of different modes of telecom access. In terms of tariffs, the ADC in rural India helps keep the tariffs of rural PCOs low, perhaps a reason for differences in perceptions of affordability. However, in both countries, such public access phones were the main mode of communication for this income group; even though Indian users found cost of services through PCOs to be affordable, the willingness to increase usage if costs were reduced (indicated by the majority) reveals that costs are a significant factor in determining telephone usage.

However, mobile users across the board (with the exception of respondents living in rural communities in Southern India) indicated that costs of communication are high. Mobile telephony is considered to be one of the most feasible ways of bringing about universal telephone access to developing countries. For example, in India, there were approximately 34 million wireless subscribers in 2004, with numbers expected to increase to 150 million in 2009 (Strother 2004; 7). Considering these statistics, it is significant that most mobile users within the survey population found present costs to be high.

A majority of the respondents in urban localities in both countries indicate a greater propensity to increase usage than those in rural areas – suggesting a more elastic demand curve for urban users. Rural users are most likely use the telephone to make essential phone calls, while urban survey participants may use their phones as *more* than a basic commodity. However, the methodology used falls short in the ability to substantiate such

indications. A more rigorous approach to estimating elasticities of demand would certainly be very useful.

While this study provides indications of the percentage of income spent on telecom per month, the numbers are only indicative and should be treated with a degree of caution. There are problems associated with the comparison of telecom expenditures across the three modes of telecom, given the differing degrees of communal use vis-a-vis individual use. There are also problems associated with the accurate identification of expenditure by the respondent, given the range of ways that he/she may make that expenditure (i.e., through a monthly bill, through the purchase of pre-paid cards or payment for call to a vendor). Studies which attempt to identify household expenditures on telecom services should be aware of these issues.

Furthermore, a useful modification to the methodology would involve a more reliable approach to recording usage patterns, including expenditure patterns. The use of simple recall methods have proved to be sub-optimal. Other means, such as the use of call logs on mobile phones, observation diaries or even Interactive Voice Response technology[11] could perhaps improve the precision of data.

Further studies in this area could allow for national representation, to explore telecom expenditure and perceptions of affordability on a broader scale; this would also have the advantage of coverage of all income categories, so that trends can be examined as incomes rise.

Despite limitations in methodology the conclusions drawn from this pilot study provide evidence of trajectories followed in two South Asian countries with regard to affordability among the low-income groups in both rural and urban centers. These findings provide valuable information for directing further research in this area, and the possible policy interventions and implications pertaining to an important sphere of contemporary society.

[11] See Cohen & Lemish, 2003.

The learning from this pilot will be incorporated to a larger study that will address the methodological issues of: sampling to project on a nation-wide basis; having a reference group to compare the "financially constrained" with; recall inaccuracies by using a customized diary; and vagueness in answers with more focused questions. This study will be conducted in five emerging Asian countries in 2006.

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