DIRSI
Diálogo Regional sobre Sociedad de la Información

IDRC CRDI

MOBILE OPPORTUNITIES:

Poverty and Telephony Access in Latin America and the Caribbean

The case of Trinidad and Tobago

Dr. Kim Mallalieu and Dr. Innette Cambridge

Mobile Opportunities: poverty and telephony access in Latin America and the Caribbean

The case of Trinidad and Tobago

Dr. Kim Mallalieu
Department of Electrical and Computer Engineering
Faculty of Engineering
The University of the West Indies

Dr. Innette Cambridge
Social Work Unit
Department of Behavioural Sciences
The University of the West Indies

September 2007

This work was carried out with the financial support from a grant given to the IEP from the International Development Research Center, Ottawa, Canada.

DIRSI - Diálogo Regional sobre Sociedad de la Información

MOBILE OPPORTUNITIES: POVERTY AND ACCESS TO TELEPHONY IN LATIN AMERICA AND THE CARIBBEAN. THE CASE OF TRINIDAD AND TOBAGO

2007

MALLALIEU, KIM
Mobile opportunities: poverty and telephony access in Latin America and the Caribbean. The case of Trinidad and Tobago / Kim Mallalieu and Inette Cambridge
Lima, Dirsi, 2007
61 p. il.

TELEPHONY; TELECOMMUNICATIONS; LATIN AMERICA; CARIBBEAN

Table of Contents

EXECUTIVE SUMMARY

This country report explores telephony usage in poor communities in Trinidad and Tobago. It follows a number of similar studies covering Africa (Waverman, Meschi and Fuss 2005), India (Sharma 2007) and Latin America (Frost and Sullivan 2006). Supporting documents to the current study include a background paper on mobile technologies and services (Mallalieu, 2006) and a literature review of poverty in Trinidad and Tobago (Cambridge, Foster and Mallalieu, unpublished). It is part of a larger Latin American and Caribbean (LAC) mobile opportunities study which covers Jamaica, Mexico, Peru, Brazil, Columbia and Argentina. The multi-country research was supported by the International Development Research Center, IDRC, of Canada.

A quantitative survey of low-income communities in Trinidad and Tobago, was used as the basis for the country study. The sample of 537 respondents out of a total country population of 1,262,366, was selected using information from local studies which estimate that 17% of the population is poor (Kairi Consultants, 2007).

The study is motivated by an interest in identifying possible ways of empowering the poor in Trinidad and Tobago through telecommunications. To this end, it analyses the access and barriers to communications services among the poor as well as their use and perceptions of such services. Although the study examines patterns of use for fixed lines, mobile and the Internet, it focuses primarily on mobile as this technology reportedly has high levels of penetration among the poor in developing countries and has considerable potential as a vehicle for inclusion.

Communications Access among the Trinidad and Tobago Poor

The survey has shown that, in general, communications services are physically accessible to the poor in Trinidad and Tobago. The majority of respondents have either fixed line service or mobile service, a similar proportion of mobile users and non-users having fixed phone lines. Those with neither service live on average less than 15 minutes away from a pay phone.

The survey revealed that the general perception of telecommunications services among the poor is favourable, with mobile signal levels and fixed line service quality generally ranking higher than public phone service. Almost all respondents have mobile coverage in the vicinity of their homes.

Communications Use among the Trinidad and Tobago Poor

The survey showed that mobile is currently the main form of telecommunications used by the low-income population. Most of the mobile users surveyed acquired their mobile phones between 2005 and 2007, peaking in April 2006. This period straddles the liberalization of the local telecommunications market and the official launch of the new entrant in March 2006. Reduced costs, catalyzed by impending, as well as actual, competition, facilitated greater access to mobile telephony services over this period.

The survey found that a number of mobile users are below the national poverty line, and many live in homes that do not have piped water. One third of those surveyed had no high school education and three quarters had not worked the week prior to the interview. Yet almost all mobile users in Trinidad and Tobago were found to own their own phones.

The low-income mobile penetration rates per household were found to be one-third that of national levels and the personal mobile penetration rates half that of national levels. Yet the ratio of mobile to fixed penetration in the low-income community sampled was more than a third greater than the national average. There are 2.3 more mobile users than fixed line users and there are, on average, 1.4 more mobile calls than fixed line calls made per day among the poor surveyed.

The mobile phone is used primarily for voice among the Trinidad and Tobago poor surveyed. Whereas on average respondents reported making in excess of 3 mobile voice calls per day, on average they reported sending less than 2 text messages each day. Though SMS service is physically accessible to mobile users, more than half do not make use of it.

While, overall, respondents from Tobago placed roughly equal value in the cell phone as did their counterparts in Trinidad, they ranked each specific area of improvement

(business, emergencies, friends, family, health etc.) with more reserve than did the Trinidadian respondents. The notable exception relates to safety in daily life. No significant differences in call patterns were found between mobile users in the two islands.

A higher percentage of urban low-income respondents were found to use cell phones than do rural low-income respondents. Cell usage was found to range from 100% in predominantly urban Port of Spain to 65% in predominantly rural Caroni. Though the survey did not record race demographics, it is perhaps noteworthy that of the country's two main racial groups, there is a greater percentage of inhabitants of African decent in rural Port of Spain and a significantly greater percentage of inhabitants of East Indian descent in Caroni.

Twice as many males as females were found to be mobile users from among surveyed respondents, both genders ranking various forms of social interaction as the main benefit of the mobile phone. Little by way of marked gender differences was observed.

Mobile usage among the poor was found to be rather inelastic. It was reported that 44% of users would maintain their current levels of usage if the monthly cost of their service was cut in half and 66% of respondents said that they would not change their usage if their income doubled. 36% of respondents would maintain their current usage even if the monthly cost of using the phone doubled and 40% said they would not change their usage if their income was halved.

Barriers to Communications for the Trinidad and Tobago Poor

The main barrier to the use of mobile phones among the poor surveyed was found to be affordability. This accounted for 39% of mobile non-users. As many respondents among the mobile non-users surveyed simply did not think a mobile phone is necessary while the other non-users have no use for a mobile because they already have a land line which adequately substitutes for their purposes.

The key barrier to the use of fixed line phones among the poor surveyed was found to be affordability. This accounted for one half of fixed line non-users.

The main barrier to the use of SMS was found to be a lack of understanding of its use.

General Findings

The study reinforces previous findings on poor communities in developing countries, which indicate that the impact of telecommunications is primarily non-economic, for example through the facilitation of emergency communications and maintaining relationships (Moonesinghe et al. 2006). In Trinidad and Tobago , the highest rated use of all telecommunications means surveyed was reported to be communications with friends and family. Fixed line users, like mobile users, reported that they used their phones mainly for social networking.

There is reportedly some opportunity for mobile market growth in Trinidad and Tobago, as 18% of non-users surveyed indicated that they planned to get a mobile phone in the following year. As with current users, prepaid was found to strongly dominate as the payment method of choice among the non-user poor. Survey findings and service pricing at the time the survey was conducted however suggest that, depending on usage, some prepaid users are paying more for voice calls than they would with postpaid plans.

Notwithstanding, the study found that cell phones have become a cultural norm within Trinidadian society, including the lower income groups of the community. They have facilitated social inclusion for many persons who would otherwise have been dependent on public pay phones and the fixed lines of neighbours and friends. For the population of interest, cell phone use has boomed in recent years, a fact that has coincided with the decrease in poverty to 17% for the first time in 20 years. It is yet unclear as to whether these two facts are linked but it *is* clear that the deep penetration level of mobile in poor communities of Trinidad and Tobago presents the opportunity for pro-poor interventions. For such interventions to yield real and positive impacts, a variety of strategies are required. These include further empirical as well as analytical research, innovative culturally-relevant technological developments, a variety of social assistance programmes and policy, and perhaps regulatory, interventions.

1. INTRODUCTION

The developmental impact of Information and Communication Technologies (ICTs) has gained a great deal of global recognition, with many authors reporting a positive impact of telecommunications on the economies of developing countries (e.g. Waverman, et al. 2005). Impacts centre on the direct as well as the indirect effects of expanded business opportunities and employment, increased efficiency and productivity, and lower transaction costs.

Cellular telephony has received a great deal more attention than other telecommunications technologies because of its mobility; rapid, comparatively inexpensive deployment features; and the wide choice in available service plans. While mobile technology has been found to have a strong economic impact in developed countries (Entner and Lewin 2005) where this technology supplements fixed line telephony, its impact on economic growth in developing countries, where it largely substitutes for fixed line telephony, has been even greater. Indeed, Waverman, Meschi, and Fuss (2005) have estimated the impact to be twice as large in developing countries as in developed countries.

The pro-poor opportunities presented by cellular 'mobile' technology are quite extensive. The range spans traditional voice communications and the more recent text-based communications to a variety of transactions enabled through text messaging and ultimately, yet contemporarily, to the use of the phone itself as a sort of financial appliance. For one suite of applications of this financial appliance, 'm-commerce', credit card or bank account transactions can be initiated from the phone. In another suite of applications the phone is rendered as 'e-money' whose value may be topped up or debited. In yet another suite of applications, the phone is used as a 'banking channel' through which cellular customers access and administer their bank accounts (CGAP 2006). Such applications count among many that have been posited as enablers of economic empowerment among the poor.

Economic impact studies of mobile have reported on various extents of geographic scope and across different regions. Some have been regional (e.g. Lewin and Sweet 2005), others national (e.g. Lucky and Eisenberg 2006), while others have focused

tightly on rural communities within specific jurisdictions, with a particular emphasis on the impact of telecommunications on poverty reduction (e.g. Souter et al. 2005) in low-income communities.

This country report explores telephony usage in poor communities in Trinidad and Tobago, the southernmost country in the Caribbean. Trinidad and Tobago, a small island developing state, has some characteristics of poverty in common with the rest of the region but is unique in its heavy dependence on the production and export of petroleum since the early part of the twentieth century and gas in more recent times. The Caribbean shares with Latin America a historical colonial legacy of a socially stratified society. Much of the poverty experienced in this region is rooted in the social system where the ancestors of today's poor were African slaves (from the sixteenth to the nineteenth centuries) or East Indian indentured servants (from the nineteenth to the twentieth centuries).

Apart from the historical causes, many factors contribute to the persistence of poverty in the Caribbean and also its spread, as well as increased vulnerability in the region. These include the reduced capacity of the state; changes in personal consumption patterns; the emergence of new health issues, especially the HIV/AIDS epidemic; increased vulnerability of social institutions such as church and family; the growing importance of personal and community security and safety issues; the long term impact of the oil crisis from the 1980s and the impact of structural adjustment from the 1980s.

Although similar studies of mobile usage among the poor have been undertaken in Africa (Waverman, Meschi, and Fuss 2005), India (Sharma 2007) and Latin America (Frost and Sullivan 2006), there is little documented on mobile usage patterns among the poor in the Caribbean.

Through a quantitative survey, this study explores access and barriers to mobile service as well as patterns of mobile usage among the poor. It also explores the perceptions and perspectives of mobile users and non-users alike as well as their patterns of telecommunications complementarity and substitution.

The formation of social capital, employment opportunities, income, the relationship with the government and social services are explored with a view to facilitating larger developmental goals and facilitating mobile opportunities.

2. CONTEXT AND RATIONALE

2.1. Poverty in Trinidad and Tobago

In Trinidad and Tobago, most of the poor live in rural areas. However, urban poverty has become a major concern. Pockets of acute poverty and indigence persist in certain eastern, southern, and south western regions (Henry et al. 2006, 65).

Striking dimensions of poverty are revealed by findings of the Ministry of Social Development (1996). For example, at that time the highest incidence of poverty was found among large sized households and "Poverty tended to be concentrated in the more densely populated area adjacent to the cities. Rural areas were found to be more poverty stricken but maintained a different character to urban areas. 15.6% of the urban population were assessed to be poor while 20.3% of the rural were determined to be so" (Ministry of Social Development 1996, ix). The majority of the employed poor work in the informal sector. In rural areas, these are usually small-scale farmers and agricultural labourers. The employed poor also include employees in urban areas (Baker 1996).

Particularly vulnerable segments of the society are children, the elderly, the disabled, small-scale farmers, unskilled workers, female-headed households and the underemployed or unemployed, many of whom are school leavers who have few skills with which to enter the labour market (Baker 1996, vii-viii). Common characteristics among the poor are: large family size, low levels of education, overcrowded housing, limited access to water and inadequate sanitization facilities (Baker 1996).

Henry et al. (2006) report that "the causes of poverty in Trinidad and Tobago extend beyond access to adequate income. In certain districts, shortage of such public goods as potable water, transportation, and youth access to training and education diminish

opportunities and quality of life . . . In other environments, informal but effective extra legal groups influence access, creating a subculture that undermines commitment to values consistent with the peaceful development of society" (Henry et al. 2006, 89)

2.1.1 Measuring poverty

The most commonly used measure for poverty in Trinidad and Tobago is the poverty line[1]. Henry and Melville (1989) have identified the poverty line by considering a basket of goods. These are component items of a basket of goods which contain the necessary nutrients of food for a 2000-calorie diet as well as non-food items which are required for an acceptable standard of living (Ministry of Social Development 1996, 1). Other measures consider basic amenities for good health, appropriate education, protective shelter, adequate recreation, employment and self sustaining livelihoods. "The application of the Poverty Line measure in this context, captures the worst scenario, in terms of incomes unavailable to households, at levels which provide for their basic needs". (Ministry of Social Development 1996, 23)

Using the poverty line as a measure, based on 1992 prices and exchange rates, extreme poverty was identified at US$1.15 per person per day. Poverty was defined at US$1.56 per person, per day or US$570.00 per person, per year (Baker 1996, 4).

A second approach to measuring living standards that is used in Trinidad and Tobago is the study of household consumption. This, rather than income, is widely accepted as a more appropriate measure (Baker 1996, 3). Take, for example, the trends revealed from the 1975, 1981/82 and 1988 Household Budgetary Survey conducted by the Central Statistical Office[2]. In these studies households reported more expenditure over and above their incomes and it was found that respondents usually understate or decline to give their true income.

[1] "The Poverty Line measurement generally assumes that there exist pre-determined and well-defined standards of consumption- called 'poverty lines'". (Ministry of Social Development 1996, p. 22)

[2] Trinidad and Tobago Central Statistical Office http://cso.gov.tt

2.1.2 Estimates of Poverty in Trinidad and Tobago

Early estimates of poverty date from 1975. At the time, 25% of the population was classified as poor (Henry and Melville 1989). The oil crisis of the 1980s was associated with a drop in per capita GNP from US$6,600 per annum (1982) to US$3,160 (1989). It was estimated that "absolute poverty increased from 3.5% of households in 1981 to 14.8% of households in 1988" (Teekens 1990). While the impact of the 1980's Structural Adjustment Programmes (SAP) on welfare in Trinidad and Tobago is difficult to measure, it was estimated that poverty increased from "18.5% of households in 1988 to 22.5% in 1992" (Henry and Melville 1989).

The 1992 Survey of Living Conditions (SLC) (Baker 1995, 1) noted that the traditional poor such as the elderly, persons with disabilities, and female-headed households, had been joined by the new poor (those who became unemployed during the mid-eighties). Between 1990 and 2001, approximately 12% of the population earned less than US$1.00 per day and 39% earned less than US$2.00 per day. In 2003 the country ranked eighth in descending order in the Human Poverty Index (HPI-1) (Ministry of Finance 2004, 17).

Kairi Consultants (2007) define "households with adult equivalent per capita expenditure values less than TT$653.99/month [US$104/month] as poor" and notes a decrease in poverty to 17% in 2007, this being "half the 35% figure which the Government says it met when it took office in 2002" (Johnson 2007). Explanations given for the reduction are the many interventions for poverty alleviation that not only address improving income, consumption and basic needs, but also address education and literacy, improved family life and self-esteem amongst the young.

Studies on living standards of the urban poor reveal a high level of use and ownership of household items such as stoves and fridges. Items for communications such as televisions and radios are regular features of most households. As early as 2001 there was evidence of an increasing use of cell phones which competed with the use of land phones. The physical living conditions of the Trinidadian poor reflect relative poverty not absolute poverty. Indeed respondents of the Beetham Gardens study identified

stigma and social exclusion from employment to be the main impediment to quality living standards (Cambridge, 2005).

Poverty lines and consumption measurements assist in providing a framework for measuring physiological deprivation of individuals in the form of income, consumption and meeting of basic needs. They do not assess socio-cultural deprivation such as social exclusion and lack of dignity, self-respect, security, justice and health. The presence of these attributes in communities and households contribute to building social capital and facilitating empowerment for sustainable livelihoods. These factors have a major effect on perceptions of the poor on their situation, yet the more commonly established methods of assessing poverty exclude socio-cultural conceptions of poverty.

In order to address conditions of poverty in Trinidad and Tobago, the state has been the main provider of social welfare benefits. With current global demands for privatisation, certain traditional welfare provision roles of the state are being contracted out or initiated by private and non governmental sectors. Trinidadian welfare supports mainly have been financial payments in the form of non–contributory pensions, social protection payments as public assistance and disability grants. Recently in order to address exclusion from computer use in poor communities, state supported computer literacy centers have been introduced. At the same time the non-governmental organisations have increased their capacity to accept some of the functions of the state for social welfare and social protection.

2.2. Trinidad and Tobago Telephony Market

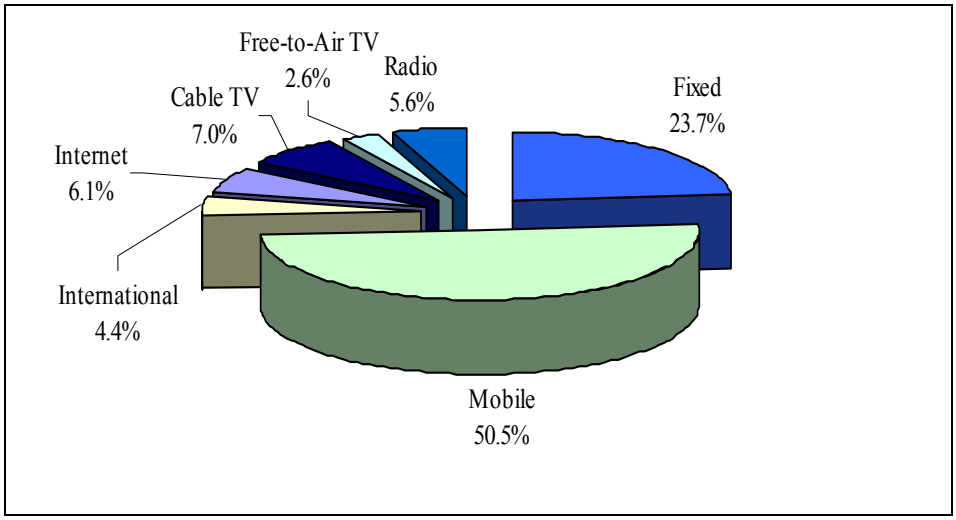
Both communications and poverty reduction feature strongly in the Trinidad and Tobago national ICT vision which, inter alia, is to be "*...in a prominent position in the global information society through real and lasting improvements in social, economic and cultural development caused by deployment and usage of information and communication technology*" (GOTT 2007). The government's encompassing ***Vision 2020*** establishes development goals for the nation for the year 2020.

In Trinidad and Tobago, increased access to communications has been stimulated through the introduction of market competition and the establishment of a facilitating

regulatory framework. Currently, the Ministry of Public Administration and Information (MPAI) sets sector policy while the independent Telecommunications Authority of Trinidad and Tobago (TATT) has the responsibility for all regulatory functions.

After decades of monopoly, the telecommunications market in Trinidad and Tobago was opened to competition, starting with mobile, in 2005. The following year mobile telephony dominated at 50.5% market share, as shown in Figure 1 (TATT 2007).

Figure 1. Trinidad & Tobago Telecommunications and Broadcasting Market Share 2006.



Source: TATT 2007, unpublished.

In addition to mobile, telephony access is available via subscription fixed lines, public payphones and the Internet. There are approximately 2,500 public payphones, both coin and card operated, deployed across the country. The incumbent operator, Telecommunications Services of Trinidad and Tobago (TSTT), is the only provider of fixed line service, although six operators have been authorized to provide this service.

Of the three mobile concessionaires in the country, TSTT, and one new entrant, Digicel, are in operation. By year's end 2006, eleven major Internet Service Providers were operating in Trinidad and Tobago. VoIP services may legally be delivered to the public with a concession.

2.2.1. Main Teledensity Indicators

Table 1 displays the progression of key national teledensity indicators from 2000 to 2006. Of the overall growth in subscription rates in fixed (19.9%), Internet (206%) and mobile (1069%), mobile growth dominated strongly over the period. Though fixed line subscriptions grew from 2000 to year's end 2006, the growth rate steadily decreased with a household penetration rate of 94% by the end of the period (TATT 2007).

Mobile subscription rates overtook those of fixed lines between 2002 and 2003. By December 2006, mobile subscriptions exceeded fixed line subscriptions by more than a factor of five. They rose from 1,029,800 in March 2006 (TATT 2006), just prior to Digicel's launch of service, to roughly 1,655,000 (TATT 2007) in December 2006. Over the nine-month period, this corresponds to a rise from 78.6 mobile subscriptions per 100 inhabitants to well in excess of 100 (126) mobile subscriptions per 100 inhabitants out of an estimated population of 1.31 million in Trinidad and Tobago. Prepaid mobile revenues surpassed postpaid in 2005. By December 2006 there were 11% more prepaid customers than postpaid (TATT 2007) in the country.

Internet subscription rates tripled between 2002 and 2006, but had only reached an estimated penetration of 6.2% by December 2006.

Table 1. Main Teledensity Indicators for Trinidad and Tobago: 2000-2006.

Domestic Telecom Statistics		*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*CAGR* (2000-2006) %*
General	Population (millions)	1.3	1.3	1.3	1.3	1.3	1.3	**1.3**	0.2
	GDP per capita (US$)	5,950.7	6,891.6	7,166.3	8,246.2	8,470.3	**9,365.4**	**13,922.8**	15.2
	Telecom revenue (US$ million)	243.5	298.9	326.0	346.3	357.0	379.3	**441.7**	10.4
	Total telephone subscribers ('000s)	413.2	453.3	592.2	683.3	849.3	1,246.4	1,980.5	29.8
	Total telephone subs. per 100 inhabitants	31.9	34.9	45.5	52.4	65.0	95.2	151.2	29.6
	Average revenue per user (ARPU) US$	589.3	659.4	550.4	506.8	420.3	304.3	223.0	(14.9)
Fixed	Main telephone lines ('000s)	271.6	293.2	308.3	317.3	318.9	322.3	325.5	3.1
	Main lines penetration (%)	21.0	22.6	23.7	24.4	24.4	24.6	24.9	2.9
	Average revenue per user (ARPU) US$	…	349.1	362.1	267.9	254.8	272.1	277.9	(4.5)
	Main lines growth (%)	(2.6)	8.0	5.2	2.9	0.5	1.1	1.0	
Mobile	Mobile subscribers ('000s)	141.6	160.1	283.9	366.0	530.4	924.1	1,654.9	50.6
	Mobile penetration (%)	10.9	12.3	21.8	28.1	40.6	70.5	126.3	50.3
	Average revenue per user (ARPU) US$	…	225.8	212.4	213.5	203.8	153.1	159.1	(6.8)
	Mobile growth (%)	266.4	13.0	77.3	28.9	44.9	74.2	79.1	
Internet	Internet subscribers ('000s)	26.5	34.8	39.9	44.2	55.2	72.4	81.1	20.5
	Internet users ('000s)	100.0	120.0	138.0	153.0	160.0	184.5	198.4	12.1
	Internet penetration (%)	2.0	2.7	3.1	3.4	4.2	5.5	6.2	20.3
	Average revenue per user (ARPU) US$	…	…	…	…	…	…	389.2	
	Internet growth (%)	51.0	31.4	14.8	10.8	24.8	31.0	12.0	
	Internet host	6,596.0	6,872.0	7,209.0	8,003.0	12,207.0	16,132.3	17,812.2	18.0
	Personal computers ('000s)	80.0	90.0	103.5	119.0	137.0	146.5	159.8	12.2
Traffic	International -Outgoing (min. million)	15.8	15.2	81.0	91.9	108.4	141.0	183.4	50.4
	International -Incoming (min. million)	163.4	147.0	233.0	328.4	354.7	414.5	261.9	8.2
	Inbound/Outbound int'l traffic ratio	10.3	9.7	2.9	3.6	3.3	2.9	1.4	
Cable	Cable subscribers ('000s)	…	78.9	82.4	92.5	103.4	131.6	139.8	12.1
	Cable penetration(%)	…	6.0	6.3	7.1	7.9	10.1	10.7	12.1
	Average revenue per user (ARPU) US$	…	376.7	395.3	380.9	376.5	337.3	261.4	(7.0)
	Cable growth (%)	…	…	4.5	12.3	11.7	27.3	6.2	
ICT Index	Digital Access Index (DAI)	…	…	…	…	…	0.53	0.62	
	Digital Opportunity Index (DOI)	…	…	…	…	…	0.45	0.53	

*CAGR - Compound Annual Growth Rate

Source: TATT 2007

2.2.2 Teledensity Trends

Market forecasts (Informa 2006) have estimated that mobile penetration in Trinidad and Tobago will continue a strong growth pattern as shown in Table 2. As with the current subscription rates (> 100%), the estimated rates reflect multiple-subscriptions from single customers.

Table 2. Mobile Penetration Forecasts: Trinidad and Tobago (Informa 2006).

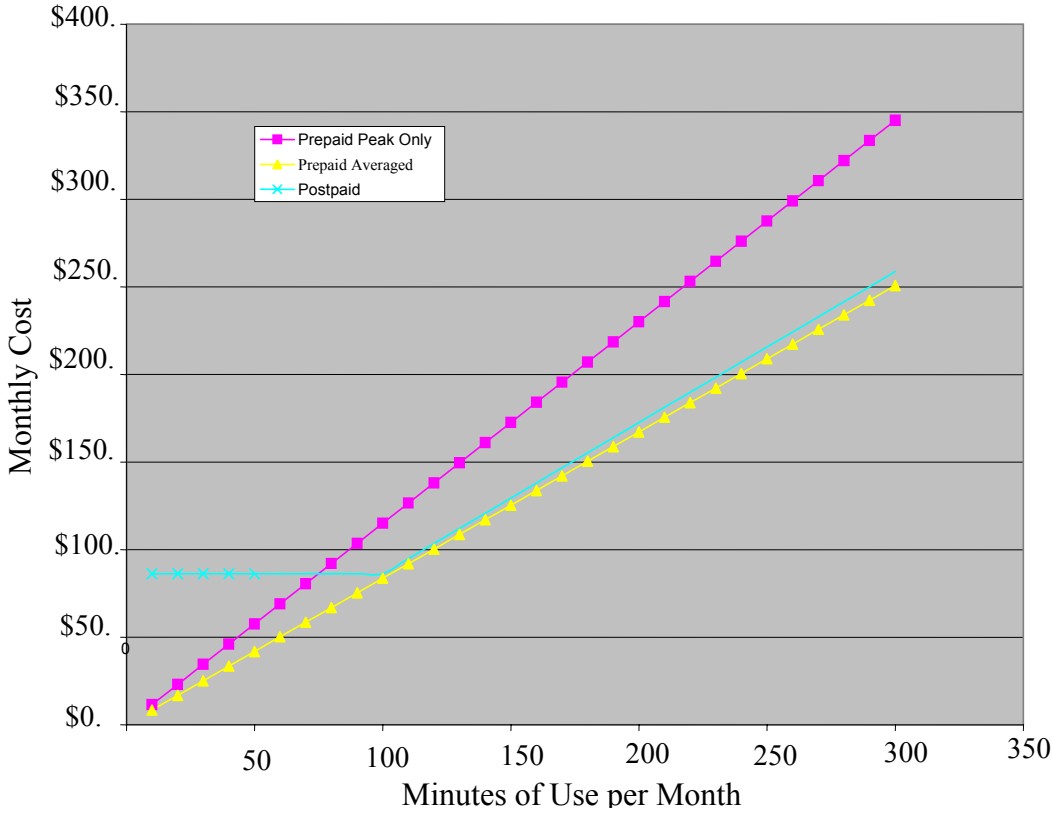
	2008	**2009**	**2010**	**2011**
Subscriptions	1,942,800	2,031,400	2,071,400	2,087,300
Penetration	186.32%	196.57%	202.25%	205.63%

2.2.3 Mobile Tariffs

Both mobile providers offer prepaid and postpaid mobile standard rate schemes, as well as packages on a 'Calling Party Pays' basis. As a measure of best value, monthly costs for prepaid and postpaid for various traffic volumes may be computed, using mobile tariffs in Trinidad and Tobago at the time the field work for this study was conducted. For mobile to mobile calls only, and neglecting prepaid voucher increments and handset costs, Figure 2 displays the comparative results.

On the basis of this comparison, prepaid service is lower than postpaid for usage below 80–100 minutes per month. For higher usage volumes, best-value prepaid tariffs are higher than postpaid for peak times. Average prepaid and postpaid tariffs are very similar in this range, with prepaid slightly lower. Actual usage for prepaid service lies between the prepaid peak only and prepaid averaged curves. For usage of less than 80 minutes per month, prepaid is cheaper, otherwise postpaid is cheaper.

Figure 2. Comparison of Prepaid and Postpaid Tariffs.



2.3. Poverty and Telephony Study: Methodology Brief

This study employed a quantitative survey conducted in poor urban and rural areas of Trinidad and Tobago, the lowest income groups mainly identified using the Trinidad and Tobago Poverty and Reduction and Social Development Draft Reports (IADB 2004; Kairi Consultants, 2007).

Personal interviews were held with 537 low-income respondents from 61 pockets of poverty, as shown in Figure 13, Appendix 2. Key demographics of the sample such as gender and age (also provided in Appendix 2) were close to national data.

Using a questionnaire designed by the Latin American and Caribbean Regional Dialogue on the Information Society (DIRSI), questions relating to the use of fixed lines, mobile, public pay phones and the Internet were posed. Mobile users (defined as those who had used a mobile phone in the three months prior to the interview) and non-users were sampled. The use of race related questions, frequently done in

Trinidad, were considered but not used in order for the research instrument to conform to the agreed upon format of DIRSI.

3. MOBILE USERS

3.1. Mobile Telephony: Users and Service Characteristics

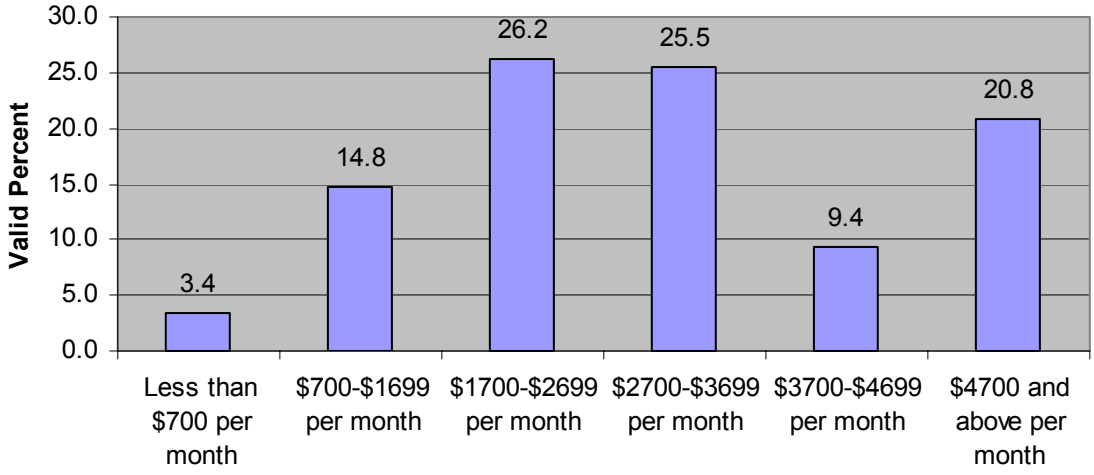
3.1.1 User Profiles

86% of 522 respondents had used a cell phone in the three months prior to the survey. For the purposes of this study, these were considered to be 'users'. Usage by geographic area surveyed ranged from 65% in predominantly rural Caroni to 100% in urban Port of Spain. Areas with higher urban than rural poverty generally had higher levels of use, for example 97% in St. George and 100% in the city of Port of Spain. The mixed areas which contain both urban and rural low-income inhabitants were also found to enjoy relatively high rates of access (85% – 95%). Rural areas such as Nariva/Mayaro (73%) and areas with proportionately higher rural populations such as Caroni (65%) exhibited the lowest percentages of use of mobile communication. Coverage did not appear to be a constraint to usage, since only 2% of the mobile non-user reported not having coverage.

Mobile phones were being used by all categories of the low-income population. 3.4% of the chief wage earners (CWE) in users' households were reportedly at or below the poverty line. About 80% of mobile users were earning at least the equivalent of the minimum wage TT$1600 (US$254/month), and about one-third were earning twice the minimum wage or more, as shown in Figure 3 for the 33% of users willing or able to reveal this information. 76% of users interviewed had not worked in the previous week.

The low economic status of the group surveyed was also reflected by the fact that only about half of the respondents reported having piped water inside their homes. 11% accessed water outside of the home while all other respondents accessed water by different means, including via standpipe (10%) and collected in barrels (20%).

Figure 3. Mobile Users by Monthly Income of Chief Wage Earner (TT$)[3].



More males (68%) than females (32%) were mobile users. The majority (70%) of heads of households of the mobile users were between 25 and 54 years old, 0.5% was under 19 years old and 11% were over 65. For 50% of users surveyed, secondary school was the highest education level achieved, while for 34% primary school was the highest attended. 5% had attended no school whatsoever.

3.1.2 Users vs. owners

The majority of users surveyed (96% of respondents) owned their own cell phone and most had purchased them new (97% of the 41% who chose to indicate whether they got their phone new or used). Of those users who did not own a phone, 84% borrowed from a friend or relative when necessary. Very few (5%) paid a friend or relative for its use while others accessed a cell through work or other means.

3.1.3 Acquisition patterns

Many of the persons surveyed (85%) acquired their mobile phones during the period 2005 to 2007. There had been a significant increase in purchase rate in April 2006 which peaked in May 2006 and remained steady until December 2006. These dates correspond to market liberalization in 2005 and the launch of service by the new entrant in March 30, 2006.

[3] US$1.00 approximately equivalent to TT$6.3

75% of users surveyed indicated that they purchased their cell phones independently or with a card package. 20% reportedly received them as a gift while others received them on loan or had found them. Phone prices ranged from under US$8.00 to over US$300.00, with the majority of purchases among users surveyed falling in the US$8.00 – US$16.00 (21%) and US$80.00 – US$160.00 (19%) ranges.

3.1.4 Prepaid versus Postpaid

96% of users used prepaid service while 4% used postpaid service. While 61% of prepaid users cited greater control of phone expenditures as the main reason for having chosen prepaid over postpaid service, 29% indicated that lower cost for prepaid over postpaid accounted for their choice and 5% indicated that they chose prepaid because it was easier to get than postpaid. Equal numbers of the few postpaid users surveyed cited greater control over expenditure, lower cost and greater ease of acquisition as the main reasons for their choice of service.

3.2. Mobile Telephony: Usage Patterns

3.2.1 Call Volume

Voice messages were being used more than text messages. Table 3 displays daily voice and SMS call volumes based on traffic reported for the week prior to the survey. The data show that call volumes exceeded SMS volumes and average incoming calls and text messages exceeded average outgoing calls and text messages respectively. It is interesting to note that despite the fact that average outgoing call volumes exceeded 3.5 calls per day, over 30% of users made less than one call per day.

Table 3. Incoming and Outgoing Voice and SMS Traffic

Calls*	Incoming Voice	Outgoing Voice	Incoming SMS	Outgoing SMS
0 ≤ x < 1 per day	21.8%	31.4%	43.8%	43.9%
1 ≤ x < 2 per day	21.8%	21.3%	16.0%	23.6%
2 ≤ x < 3 per day	23.2%	17.3%	16.0%	16.9%
3 ≤ x < 4 per day	3.4%	3.7%	5.3%	3.4%
x > 4 per day	29.7%	26.2%	18.9%	12.2%
Modal value, per day	> 4 call/day	< 1 call / day	< 1 SMS / day	< 1 SMS / day
Mean value, per day	4.39	3.57	2.68	1.95

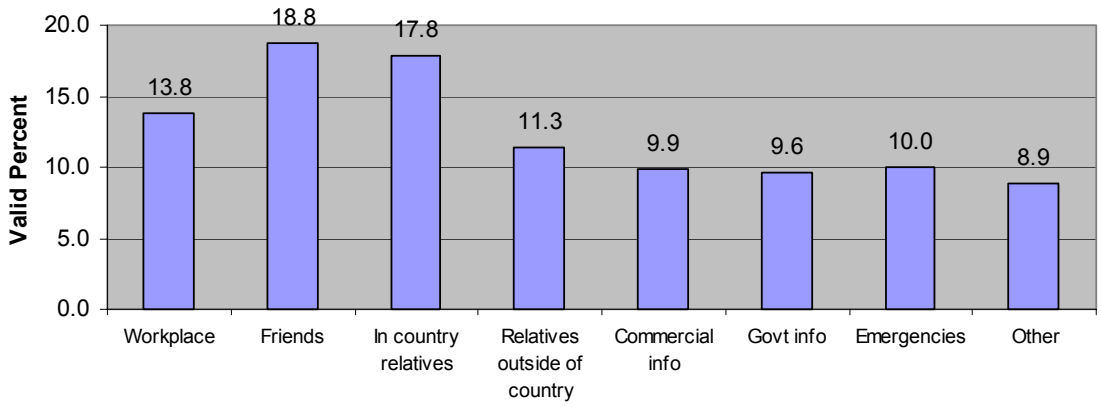
** x = number per day*

3.2.2 Call Patterns

Of all the mobile calls made in the month prior to the survey, the most frequent recipients were friends and in-country relatives, followed by work place, as shown in Figure 4. The profile of calling parties for calls received by respondents over the previous month showed a similar pattern, providing evidence of strengthening social networks.

Recharge cards generally lasted far less than a month. 42% of users estimated that their current recharge card would last them less than a week, 21.5% a week to 13 days, 14% 2 weeks to 20 days, 6.5% 3 weeks to 27 days and 13% 4 weeks to 34 days. Only 3% of users estimated that it would last 35 days or more.

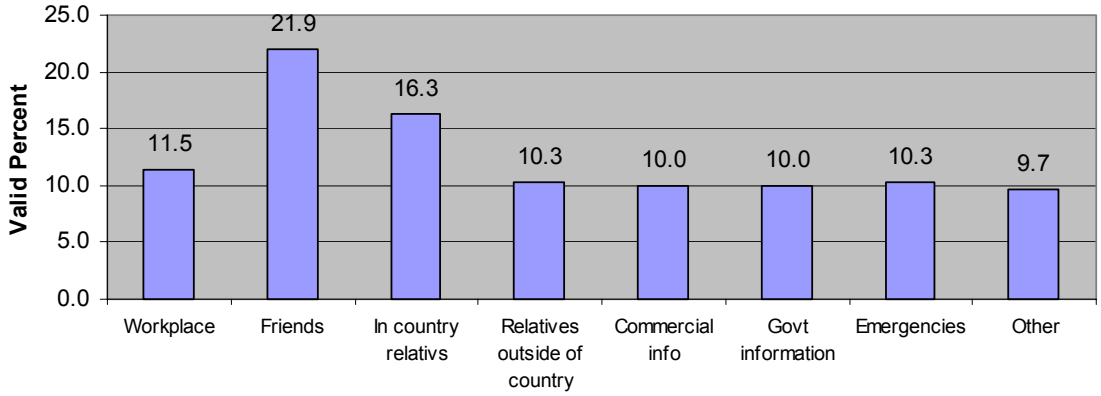
Figure 4. Frequency with which Various Recipients Called in previous Month.



3.2.3 SMS Patterns

Nearly half (46%) of mobile users surveyed had sent or received text (SMS) messages in the month prior to being interviewed. Of these, 58% reported that the advantage of SMS over voice calls was cost while 37% indicated that they preferred SMS over voice calls because it allows communication without distracting others. The main reason given for not using SMS over this period was a lack of understanding of its use (57%). Many others (23%) reported that SMS is inconvenient, while 4% indicated that their mobile did not support SMS and 5% that none of their contacts use it. As with voice calls, the majority of SMS messages were sent to friends and in-country relatives, followed by work place, as shown in Figure 5. Sending and receiving patterns for SMS were similar to within less than a percentage point for each category of party.

Figure 5. Frequency of Sending Messages to Various Recipients



3.2.4 Remittances

There was little understanding among respondents that financial transactions using mobile phones was at all possible. 97% of mobile users reported that they do not use their mobile to send or receive money from abroad.

3.2.5 M-services

The use of mobile phones for m-services was limited to very simple activities. Of users who had used their mobile phones to make any transaction, 50% had downloaded a ringtone or wallpaper. 22% had used the phone to participate in a contest or drawing.

3.3. Mobile Telephony: Cost and Expenditure Patterns

3.3.1 Quality and Cost Perception

Signal quality and the establishing of mobile connections was generally perceived as being good, with 90% of mobile users reporting acceptable levels or better, 7% reporting that it was poor and 3% that it was very poor.

Of the 5% of users who were postpaid customers, 46% had no opinion regarding their service, while 23% found it cheap or very cheap and 32% found it expensive or very expensive.

When asked the same question, of prepaid users, 57% had no opinion, while 17% responded that is was cheap or very cheap and 7% that is was expensive or very expensive.

3.3.2 Expenditure Patterns

Very few (4%) respondents had postpaid accounts, but of those almost all paid for their own service. Postpaid mobile bills are due monthly in Trinidad and Tobago. The average bill for respondents, based on the previous month, was US$57.00. Most bills were either greater than US$80.00 (28% of respondents) or between US$16.00 and US$32.00 (40% of respondents).

Prepaid owners also generally paid their own mobile expenses. 97% of surveyed prepaid users purchased their own recharge cards. 97% of prepaid users surveyed also purchased their last card in less than five weeks prior to the date of the interview and 94% reported that they purchased their cards more frequently than once in five weeks. The average cost of the last card purchased was US$5.00, with 60% of purchases being for cards of US$3 denomination. Half of all users purchased their cards once every other week, or more frequently. Prepaid respondents reported that it generally (79%) took them under fifteen minutes, from home, to get to a place where cards can be purchased, although for 5% of users, it took them half an hour or more.

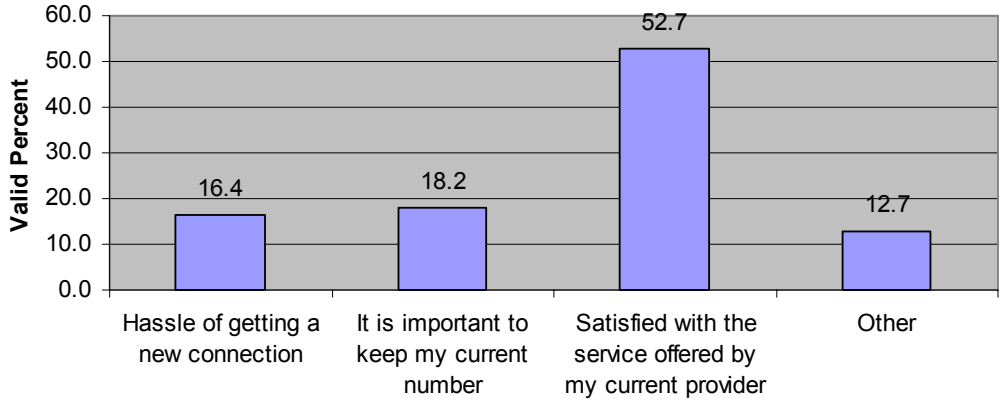
3.3.3 Cost Control Strategies and Sharing

Of the cost control strategies used among respondents, the most popular were use of the phone only to receive calls (38%) and calling during non-peak hours when rates are cheaper. Some (14%) used the phone only for sending SMS messages while others (12%) used missed calls / beeping as a cost control strategy.

3.3.4 Switching Incentives

When asked if mobile users would switch to a service provider that offered a lower rate, 33% said that they would definitely switch, 17% that they would definitely not switch and 4% that it was unlikely that they would. 14% were not sure and 22% reported that they may switch. 11% reported that it would depend on the rate on offer. The main reason given for not switching providers was satisfaction with existing service provider, as shown in Figure 6.

Figure 6. Reasons for Not Switching Provider despite Lower Rate.



3.3.5 Elasticities

The survey suggested that mobile usage among the poor is quite inelastic. When asked how users would react if their service cost was halved or income doubled, 44% and 66%, respectively, responded that they would not change their usage. Only 8% and 3.5%, respectively, said they would more than double their usage, as shown in Table 4. When asked how users would react if their service cost was doubled or their income halved, 35.6% and 39.9%, respectively, responded that they would not change their usage. Only 15.8% and 2%, respectively, would decrease their usage by more than half, as shown in Table 5.

Table 4. Mobile Usage Changes in Response to Lower Service Cost and Higher Income.

	Service Cost Halved	**Income Doubled**
No change to usage	44.3%	65.6%
Increase usage but not double	32.5%	22.9%
Double usage	14.9%	8.0%
More than double usage	8.3%	3.5%

Table 5. Mobile Usage Changes in Response to Higher Service Cost and Lower Income.

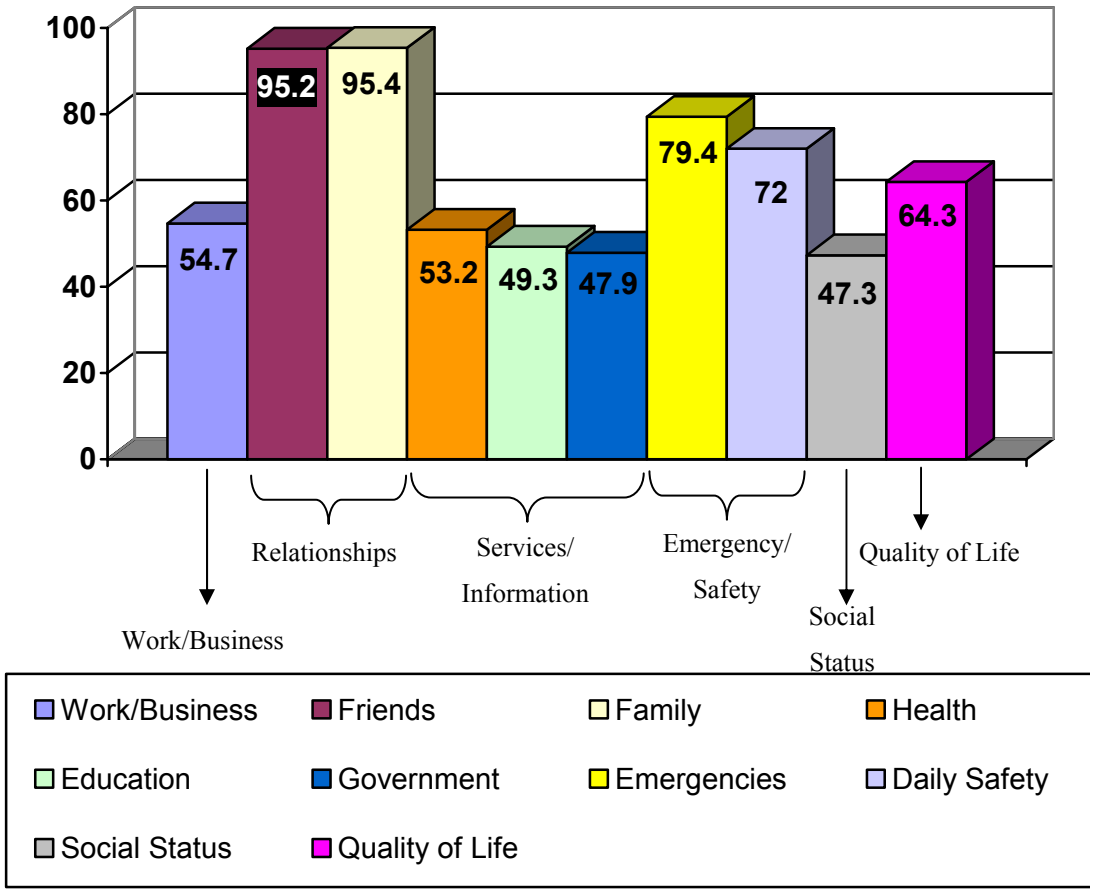
	Service Cost Doubled	Income Halved
No change to usage	35.6%	39.9%
Decrease usage but not halve	22.0%	23.2%
Halve usage	17.6%	32.3%
Decrease usage by more than ½	15.8%	2.0%
Stop using phone	8.9%	2.5%

3.4. Mobile Telephony: Perceived Benefits

Respondents generally (64%) indicated that mobile services had improved their quality of life. The most significant benefits of mobile service to low-income users surveyed related to relationships with family and friends as shown in Figure 7. These were followed by the benefit of having a means of communications in the event of an emergency and for daily safety. Respondents weighted quality of life as the next most important benefit of mobile service. Work and health were measured next highest followed by education, government and social status.

55% of respondents indicated that mobile effected improvements to work and business. About half of these said that they had found better job or business opportunities. The other significant improvements in this area included saving time at work and better communication with colleagues, clients and suppliers.

Figure 7. Life Improvements Brought about by Mobile Service.



There were some gender differences with respect to benefits of mobile. The most striking related to improvements in work with only 39% of surveyed women and 61% of men perceiving improvements in this area. 12% more men than women reported that mobile phones had improved their lives with respect to emergencies yet 9% more women than men reported improvements with respect to safety in their daily lives. Other, less significant, gender differences included improvements in relations, with more men than women reporting improvements in relationships with friends and more women than men reporting improved relationships with family.

On average there was a 50% consensus among the various age groups analysed that there had been some degree of improvement in access to education services and information. In terms of access to government services and information the average improvement rating was 49% across the age groups. The 25–29 and 50–54 age groups saw a marked improvement in access to government, with 58% and 57% respectively.

In terms of access to health services and information, the age groups that found improvement due to mobile phones to be most significant were the 20–24 and 25–29 age groups and more expectedly, those in the senior age brackets of 50–54, 55–59, 60–64 and 65 and over, who, on average, indicated a 57% improvement rating.

3.5. Substitution and Complementarity

The survey provided some evidence of mobile substitution. For example, 65% of public phone users indicated that their mobile use had decreased their use of public phones. 58%, who also had fixed line service, reported that their fixed line use had decreased on account of mobile. 61% reported that their use of a relative's or friend's fixed line had decreased.

The study also explored modes of complementarity between mobile and fixed telephony, Internet and public phones. Although 91% of respondents had made a call from their own mobile in the month prior to interview, all other forms of communication ranked far lower, the highest being fixed line, 31% reporting to have used one in the previous month.

3.5.1 Fixed telephony

Just over one third (36%) of users surveyed currently had a fixed line phone, 79% of whom had it for 5 years or more, with 32% having it between 5 and 9 years. In the week prior to being interviewed, 72% of these subscribers had used their fixed line to make or receive calls. Of those who did not, 57% indicated that they preferred to use a mobile phone. No one said that they had not used the fixed line because their contacts lived nearby or that their contacts did not have phones.

Based on the week prior to interview, 3.1 fixed line calls on average were made per day by mobile users and 3.2 on average were received per day, as shown in Table 6. As in the case of mobile call volumes, it is interesting to note that the modal values (between 1 and 2 calls received and sent per day) were lower than average call volumes.

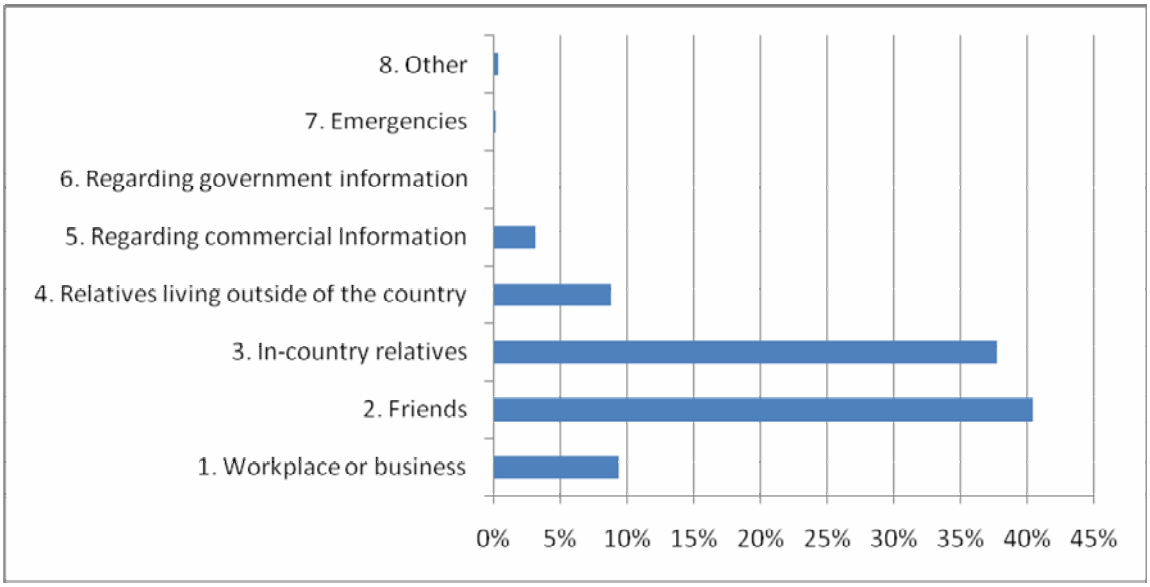
Table 6. Daily Average Phone Calls Made / Received from Landline by Mobile Users.

Calls*	Calls Received	Calls Made
0 ≤ x < 1 per day	21.7%	20.0%
1 ≤ x < 2 per day	30.1%	27.5%
2 ≤ x < 3 per day	22.9%	21.3%
3 ≤ x < 4 per day	4.8%	3.8%
x > 4 per day	20.5%	17.5%
Doesn't know	0%	10%
Modal value, per day	1 ≤ x < 2 per day	1 ≤ x < 2 per day
Mean value, per day	3.2 calls per day	3.1 calls per day

* x = number calls per day

Fixed line calls made in the week prior to interview, were made primarily to friends and in-country relatives, as shown in Figure 8. The profile of calling parties is similar, within 1% in each category. In the month prior to interview, only 17% of fixed line phones were used by people other than family of the subscribers surveyed. 22% of these non-family users were charged.

Figure 8. Recipients of Fixed Line Calls Made in Week Prior to Interview.



About half (49%) of all fixed line subscribers surveyed rated the service good or excellent, 12% rated it poor or very poor, while 39% rated it acceptable. The mean value of respondents' last monthly fixed line bill was US$38.00, with 31% of respondents' bills falling in the range US$16.00 to US$32.00. About half (52%) of

subscribers reported that they found the fixed line service expensive or very expensive while, on the other hand, 10% reported that it was cheap or very cheap. 38% found it neither cheap nor expensive.

3.5.2 Internet

Very little Internet use was reported by any respondents. Only 9% of all respondents had used the Internet in the month prior to the interview. 41% of these accessed it from their homes while 13% accessed it from the work place and an additional 13% accessed it from a cyber cafe. Other access points used include friends' or relatives' homes (4%), school (7%) and free public outlets (7%). The Internet users surveyed accessed it on average 17 days in the previous month.

Nearly half (43%) of the Internet users surveyed, reported that the service was expensive or very expensive. 5% reported that it was cheap and 46% that it was neither cheap nor expensive. The life improvement most highly rated (61% of Internet users) was access to education services and information. This was followed by relationships with friends (55%) and school (53%). Relationships with family (40%) and access to health services and information (37%) were rated next highest, followed by work (36%). A variety of other aspects such as quality of life, access to government services, emergencies, safety and social status were rated far less highly. Of the respondents who rated the Internet highly with respect to work, 29% reported that it had enabled them to find better job opportunities and 24% said that it facilitated communication with colleagues. An almost equal number (about 20% in each case) indicated that it saved time at work and enabled communication with more clients. 5% indicated that the Internet assisted in communicating with suppliers.

3.5.3 Public phones

Only 13% of respondents had used a payphone in the month prior to interview. 64% of these rated the public telephone service as acceptable, with 19% rating it as good or excellent and 17% as poor or very poor. 12% of public phone users rated it expensive or very expensive, 17% rated it cheap or very cheap and 71% had no opinion.

The time it took to get from home to the payphone ranged from 1 minute to 1 hour and 20 minutes, with an average time of 16.5 minutes and 26% of respondents

reporting that it took them 15 minutes. 38% of users reported that they used payphones because of easy access while 12% said they had no other option and 14% reported that they used them because they were lower cost.

4. MOBILE NON-USERS

4.1. Barriers to Usage

14% of the respondents interviewed had not used a cell phone in the three months prior to the survey. For the purposes of this study, these were considered to be 'non-users'. 39% of these had not used a cell phone because they can not afford it, well over half (58%) of these coming from Caroni and the others spread (4% – 9% each) over eight of the nine other major areas surveyed. No non-users from Tobago reported affordability as the reason for their non-use.

35% of mobile non-users surveyed did not think that having a mobile was necessary. The next most significant reason (10% of non-users) for not using a mobile was availability of a land line at home. 4%, evenly spread between Victoria, San Fernando and Caroni, indicated that they did not use cell phones because none of their contacts had phones. Another 4%, all just above the poverty line (CWE salary lying within US$111.00 and US$267.00 per month) and evenly spread between Victoria, Nariva/Mayaro and Caroni, said they could not because they had no electricity in their home. Only about 1% of respondents, all from Caroni, reported the reason as being lack of coverage where they lived and another 1%, all residents of Victoria, that they had no need for a cell as their contacts lived close by.

Marginally more male (38%) than female (30%) mobile non-users said they could not afford a mobile phone. Roughly as many female (41%) as male (38%) non-users thought that having a mobile was unnecessary. There was little gender split across the other reasons for non-use.

Workers on commission and unpaid workers in a family business or farm indicated that they either could not afford a mobile phone (50%) or that they did not think it was necessary to have one (50%). 20% of employees and 78% of self employed reported

that they did not think it was necessary to have a mobile.

Nearly half of all respondents with no formal education, and all those with vocational school as the highest level achieved, indicated that they could not afford a mobile phone. Respondents with a preschool level achieved, indicated that they could not afford a mobile (38%), it was not necessary (50%) or that they could not use a mobile as they had no electricity in their homes (12%). Respondents with primary schooling alone, indicated that they could not afford a mobile (18%), it was not necessary (50%) or that they had a landline in their homes (18%). All of those who were unaware of their highest level of education achieved, found mobile phones unnecessary.

4.2. Future Adoption

When mobile non-users were asked if they planned to get a mobile phone in the year following the interview, 18% said yes, 61% said no and 21% were undecided. Future adopters provided reasons for getting a mobile as shown in Figure 9. The figure demonstrates that the most popular primary reason for considering getting a mobile was the convenience of making and receiving calls. The most popular secondary reason was to be located in case of emergencies and the most popular tertiary reason was to stay in touch with family.

Of those who planned to get a mobile, 80% planned to use prepaid service, 7% planned to use postpaid and 13% were undecided. 67% of mobile non-users who planned to get postpaid mobile service in the year following the interview were choosing to do so because they perceived it as being cheaper than prepaid. No-one cited greater control or ease of acquisition as reasons for choosing postpaid over prepaid. Of the 80% of non-users who planned to get prepaid service in the year following the interview, 88% cited greater control of phone expenditures as the reason for their choice while 13% cited lower cost than postpaid as their reason. Figure 10 captures the future adoption profile of the low-income non-users surveyed.

Figure 9. What are the main reasons to get a mobile phone? (STM6).

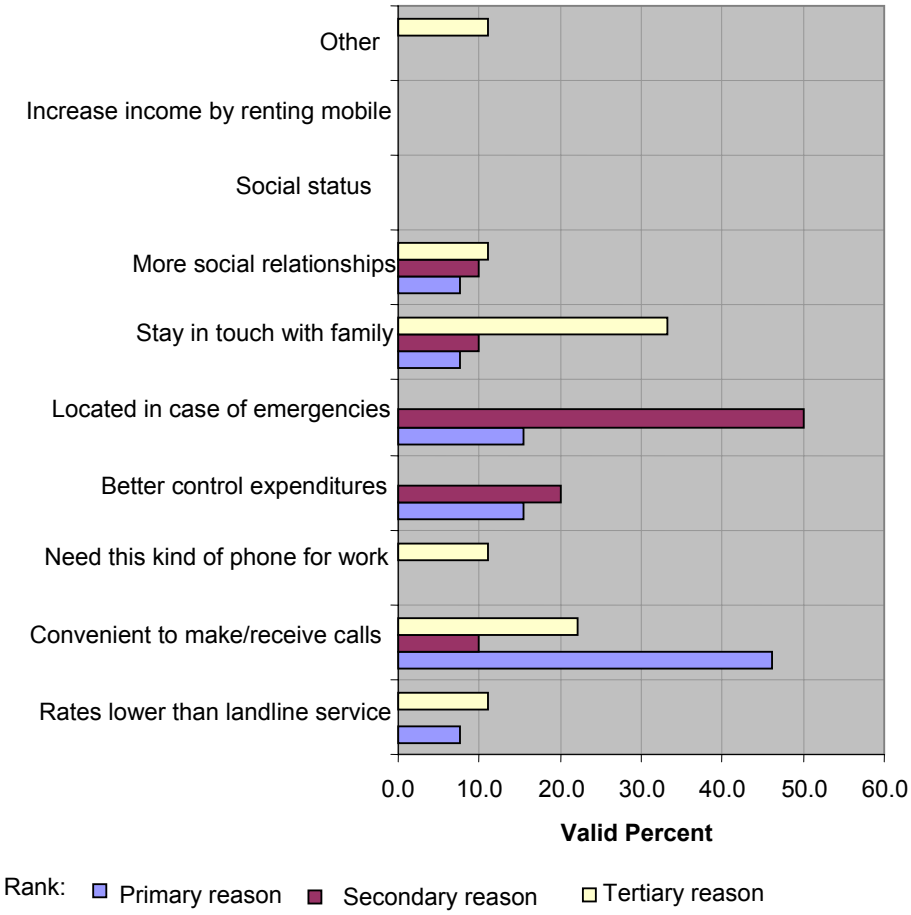
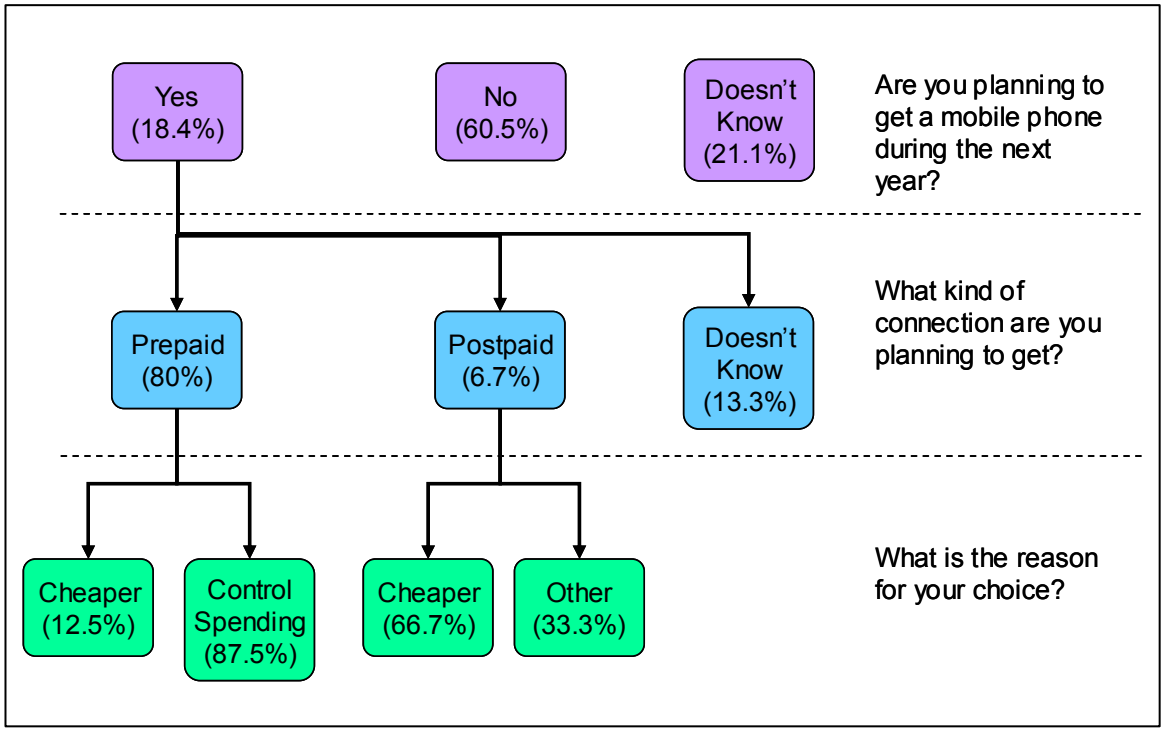


Figure 10. Future Adoption of Mobile in Surveyed Low-income Communities.



4.2.1 Willingness to Pay

Non-users who did not plan to get mobile phone service in the year following the interview were asked if they could afford to pay the US$11.90 per month it cost at that time for postpaid service. 33% said they could afford it and 67% said they could not. A striking finding was that 40% of men surveyed said that they could afford it while only 18% of women said they could. Also, 52% of those who said they could not, resided in Caroni and 40% who said they could afford it resided in Victoria. Respondents from households whose heads were younger than 35 years all indicated that they could not afford the monthly subscription. Half of mobile non-users surveyed who said they could afford the monthly rental were self employed while 40% of those who said they could not afford it, were employees.

4.3. Substitution

4.3.1 Fixed telephony

37% of non-users had a fixed line phone. 67% of these had it for 5 years or more, with 29% having it between 5 and 9 years. 84% of these respondents used their fixed line to make or receive calls in the week prior to being interviewed. Of those who did not use their fixed line, 50% indicated that the reason was that they cannot afford it.

Based on the week prior to interview, 1.9 calls on average were made per day and 3.9 on average were received per day, as shown in Table 7. For low call usage (less than 1 call per day), more calls on average were made than received while for higher call volumes (more than 4 calls per day), more calls on average were received than made.

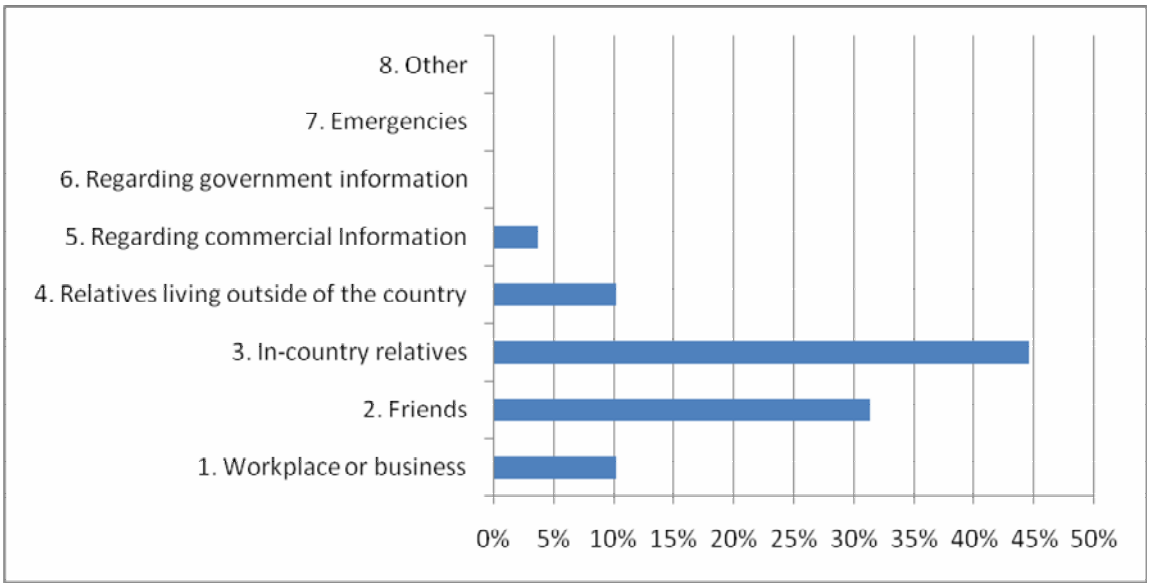
Table 7. Daily Average Phone Calls Made and Received from Landline by Mobile Non-Users.

Calls*	Calls Received	Calls Made
0 ≤ x < 1 per day	26.3%	52.9%
1 ≤ x < 2 per day	15.8%	17.6%
2 ≤ x < 3 per day	21.1%	17.6%
3 ≤ x < 4 per day	0%	0%
x > 4 per day	36.8%	5.9%
Doesn't know	0%	5.9%
Modal value, per day	x > 4 per day	0 ≤ x < 1 per day
Mean value, per day	3.9 calls per day	1.9 calls per day

***** *x = number calls per day*

Fixed line calls made in the week prior to interview, were made primarily to friends and in-country relatives, as shown in Figure 11. In the month prior to interview, only 13% of fixed line phones were used by people other than family of the subscribers surveyed. 25% of these non-family users were charged.

Figure 11. Recipients of Fixed Line Calls Made in Week Prior to Interview.



Of the fixed line subscribers among the non-mobile users surveyed, 44% rated the service good or excellent, 4% rated it poor or very poor, while 52% rated it acceptable. The mean value of respondents' last monthly fixed line bill was US$50.00. 44% of respondents' bills fell in the range US$16.00 to US$32.00. Half of mobile non-user subscribers' perceived fixed line service to be expensive or very expensive, 8% reported that it was cheap or very cheap and 38% found it neither cheap nor expensive.

4.3.2 Internet

Out of 62 mobile non-users surveyed, only one respondent reported accessing the Internet in the month prior to the interview. That respondent accessed Internet at a cyber café and at school, mainly for school and health purposes, and, to a lesser extent, for contacting friends and for emergencies. The respondent perceived Internet access to be expensive, and that it improved the quality of life 'somewhat'.

4.3.3 Public phones

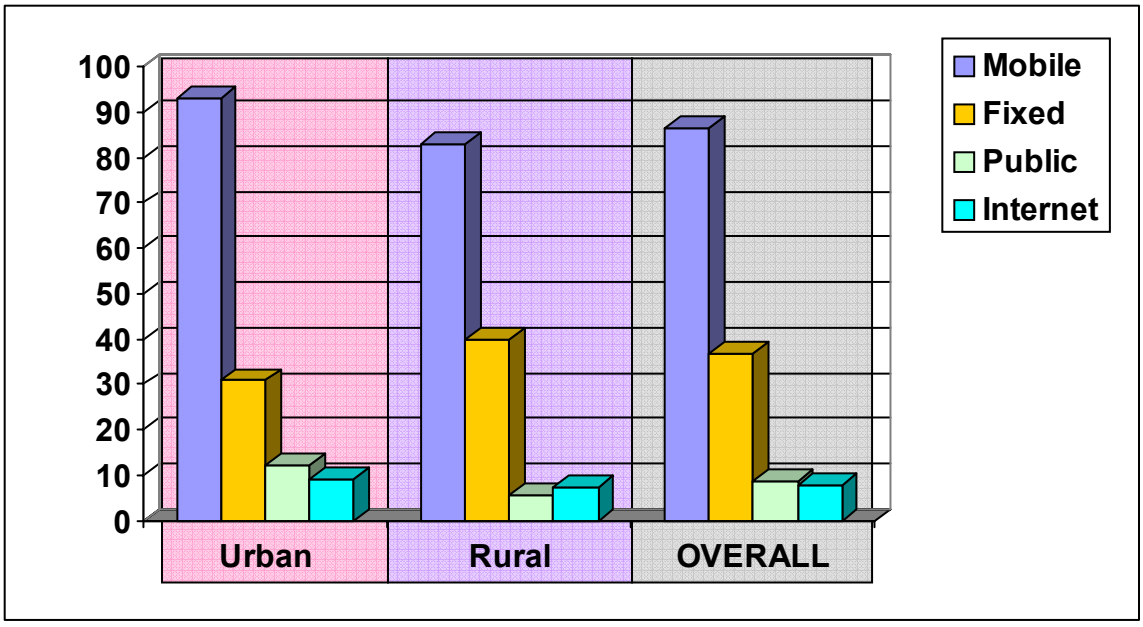
Of mobile non-users, 19% had used a payphone in the month prior to interview. Of these, almost half (46%) rated the public phone service as expensive or very expensive. 9% rated it cheap or very cheap and 46% rated it as neither expensive nor inexpensive. Most mobile non-users (64%) perceived public phone service quality as acceptable, 18% rated it as good or excellent and 18% as poor or very poor.

The mean time it took to get from home to the payphone ranged from 1 to 30 minutes with a mean time of 12.4 minutes 26% of respondents reported that it took them 15 minutes to get from home to the payphone. 38% of respondents reported that they used payphones because of easy access while 50% said they had no other option and 10% reported that they used them because they were lower cost.

5. CONCLUSIONS AND POLICY IMPLICATIONS

The study examined access and barriers to telecommunications as well as usage patterns and perceptions in selected low-income communities in Trinidad and Tobago. The distribution of usage among the surveyed population to various modes of communication, namely mobile telephony, fixed telephony, public telephones and the Internet, is illustrated in Figure 12.

Figure12. Low Income Telecommunications Usage (Urban and Rural).



The most striking feature of the findings is that mobile telephony, by a substantial margin, represents the most widespread form of telecommunications access within the low-income communities in Trinidad and Tobago. It is also interesting to note that the Trinidad and Tobago poor, who predominantly live in rural areas, appear to display

higher usage levels in urban areas than rural, in all modes of communication with the exception of fixed lines.

There is evidence that the lowest income group of persons surviving below the poverty line (incomes below US$111.00/month) use cell phones less than higher income categories of the sample population. This, however, would be in keeping with the experience of social exclusion of this group in areas of health, education and housing. For households whose head has an income below the poverty line, inclusion in the world of telephony is not as widespread as it is for other low-income households.

The study demonstrated that usage among the poor differs from national norms in a number of ways, as shown in Table 8.

Table 8. Comparison of Telecommunications Data: National and Surveyed Low Income Users.

	Fixed Line Subscribers / 100 Households	**Fixed Line Subscribers / 100 Inhabitants**	**Mobile Subscribers / 100 Households**	**Mobile Subscribers / 100 Inhabitants**	**Mobile/ Fixed Subscribers**	**Mobile Prepaid/ Postpaid**
National	94	24.9	477	126	5	9.3
Low income	34.4	8.9	156	62	6.9	26
Low income / National	0.37	0.36	0.33	0.49	1.38	2.8

For example, the household as well as personal fixed line subscription in the low-income communities surveyed was almost one third of the corresponding national penetration levels. While the low-income household and personal mobile subscription rates were one third and one half of national levels respectively, the ratio of mobile to fixed subscriptions in the low-income community sampled was 38% greater than the national average, and prepaid subscription rates were 2.8 times that of postpaid subscriptions.

Within the community of interest the profile of the most frequently identified cell phone user is an urban employed or self-employed male in a household whose chief

wage earner is between US$111.00 – US$587.00. An average of four calls a day are sent and received on the mobile for a variety of communication needs but the most frequent use is communicating with friends and relatives.

Interesting observations of the use and perceived benefits of cell phones by gender show that men, more frequently than women, noted improved relationships with friends whereas women noted an improvement in relationships with family. Both sexes, more men than women, acknowledged that the cell phone had to some extent improved work or business aspects of their lives. Young persons in their twenties and persons fifty years and over noted the most improvements in terms of access to health and information, after noting the importance of a cell phone for contacting friends and family.

The study suggested that the use of the cell phone in Trinidad and Tobago has considerable potential to make an impact in low income households. Two thirds of users attributed an overall improvement in quality of life to their mobile use. There was evidence of increased social networking, which contributes to the growth of social capital; and also evidence of increased employment opportunities as well as improved efficiency in the work place. The frequency of calls to family may indicate that the cell has become an agent of social monitoring and social control for the family members, in particular the adolescents. To understand the extent of this role would require further studies on the content of communication amongst mobile users.

The world of business and commercial transactions does not as yet feature prominently with mobile users within the study population. The image of the cell phone as primarily a person to person communication tool was apparent in this survey.

Prepaid packages, which allow better control of expenditure, were the preferred choice for 96% of low-income mobile users. This seems to be particularly important for those in most need, since the socio-economic analysis showed that among the low-income population, postpaid mobile users exhibited a better standard of living as compared to prepaid users.

Though prepaid offers greater control of expenditures, as recognized by respondents, it does not necessarily offer lower cost. In the case of Trinidad and Tobago at the time the survey was conducted, best-value prepaid service was cheaper than best-value postpaid for usage of less than 80 – 100 minutes per month, depending on time of use. Beyond this level of usage, best-value postpaid was cheaper. As, on average, low-income users were found to make 3.57 voice calls per day, the average duration of a call would have to be less than a minute (0.75 – 0.9 minute respectively) for prepaid to be cheaper than postpaid.

Although the volume of text messages per day was less than that of voice calls, text messages were recognized to be a cheaper, and less intrusive, method of communication as compared to making calls. Possible explanations for the limited use of short message service (SMS), in spite of the economic advantages, may be linked to the literacy levels of participants in the study. In addition to requiring technical competence in the use of a cell phone SMS demands a measure of comfort with spelling and literacy norms and standards. The population under study had lower levels of education than the national norm.

Mobile usage among the poor was found to be quite inelastic, many respondents indicating that they would not change their usage patterns, even if the service became more or less affordable than it is currently. The survey also showed that almost one fifth of non-users were interested in getting a mobile phone at some time in the future. There is therefore opportunity for growth in the cellular market among the poor.

The findings of the research suggest ways in which cellular impact in low income communities can be deepened. In particular:

1. **Price Analysis**: The relative cost of prepaid to postpaid tariff packages to mobile users should be continuously tracked. This data, together with pro-poor national policies, should inform regulations that relate to mobile pricing.

2. **Social Assistance**: The value placed on using mobile for safety, by both users and non-users, suggests that cellular phones could be used as a vehicle for social support among the poor. An examination of their application for these

purposes may prove particularly useful for especially vulnerable categories of the poor, such as the disabled, lone parents, one parent households, the elderly and large households.

3. **Pro-Poor Information Systems**: Cell phones were found to be predominantly used for voice communications by the poor surveyed. Yet, the high penetration rates and relative inelasticity suggest significant opportunity for increasing social inclusion through use of the channel for other means of data flow. Examining such strategies in areas including health, education, business and governance could lead to greater empowerment of low-income communities.

4. **Promotion of Literacy**: The use of SMS among the surveyed communities was found to be very low despite the imperative to cut cost. As this may be due to low literacy levels, the development of educational applications for mobile represents a means of reaching a traditionally excluded audience. This would also ensure that all users may eventually benefit from SMS use and the other uses that are being advocated for the cell phone.

There is reason to believe that the cell phone can play a prominent role in realizing inclusive policy objectives for Trinidad and Tobago. Indeed, it may feature strongly in many sectors as well as in over-arching national policy. This research study has provided important insights into the value and use of the cell phone among the poor, and it indicates that further work may be justified to enable increased impact.

REFERENCES

Baker, Judy L. (1995). Report No.14382- TR. Trinidad and Tobago. Poverty and Unemployment in an Oil Based Economy. October 27, 1995. Country Department III. Country Operations II. Latin America and the Caribbean. NY: World Bank.

Baker, Judy L.(1996). Poverty Reduction and Human Resource Development in the Caribbean. Washington DC: World Bank

Cambridge, Innette (2005) "La calidad de vida en los barrios urbanos de bajos ingresos: El caso de Beetham Gardens en Trinidad Y Tobago", in BODSON, Paul, CODERO, Allen, CARRASCO, Pia and GOULET, Jean (2005) Vivir en la cuidad, Lo cotidiano de la inserción urbana en México, América Central y El Caribe, FLASCO, Costa Rica. ISBN : 9977-68-133-3.

Cambridge, I, Foster, J. and Mallalieu K. 2007. Poverty in Trinidad and Tobago: A review of the literature (Unpublished).

CGAP (2006) Mobile Phones for Microfinance. CGAP Brief April 2006. Washington DC: Consultative Group to Assist the Poor (CGAP) http://www.cgap.org/portal/binary/com.epicentric.contentmanagement.servlet.ContentDeliveryServlet/Documents/Mobile-Phones-for-Microfinance-4.pdf. Accessed May 1, 2007

Entner, R. and Lewin, D. (2005). The Impact of the US Wireless Telecommunications Industry on the US Economy. Available at http://files.ctia.org/pdf/Report_OVUM_Economy.pdf. Accessed May 8, 2007

Frost and Sullivan. Social Impact of Mobile Telephony in Latin America. San Antonio, Texas: Frost and Sullivan.

http://www.gsmlaa.org/files/en/content/140/Social%20Impact%20of%20Mobile%20Telephony%20in%20Latin%20America.pdf Accessed August 2, 2007

GOTT. (2007). Fastforward. Trinidad and Tobago: Ministry of Public Administration and Information, Government of the Republic of Trinidad and Tobago (GOTT) http://www.fastforward.tt Accessed September 10, 2007

Henry, R and Melville, J. (1989). Poverty revisited. Paper presented at the Regional Conference on New Directions in Caribbean Social Policy, The University of the West Indies, St. Augustine, Trinidad and Tobago. Quoted in Baker, Judy L. 1995. Report No.14382- TR. Trinidad and Tobago. Poverty and Unemployment in an Oil Based Economy. October 27, 1995. Country

Department III. Country Operations II. Latin America and the Caribbean. NY: World Bank,

Henry, Ralph, St. Catherine, Edwin, Brown, Dennis, Rajack-Talley, Ann and Thomas Wendell. (2006). Chapter 2, in Policies for Poverty Reduction, edited by Liliana Rojas-Suaez and Carlos Elias, 73–276. Special Publications on Development No.1. Policy Perspectives for Trinidad and Tobago, From Growth to Prosperity. Washington DC: Inter-American Development Bank (IDB).

Kairi Consultants. (2007). Analysis of the 2005 Survey of Living Conditions in Trinidad and Tobago. Report prepared for the Ministry of Social Development, Government of Trinidad and Tobago. Trinidad and Tobago: Kairi Consultants Ltd.

IADB. (2004). The 2004 Trinidad and Tobago Poverty Reduction and Social Development Revised Draft Report. Report prepared for the Inter-American Development Bank by Kairi Consultant Ltd., Trinidad and Tobago.

Informa. (2006). Mobile and Wireless Opportunities in the Caribbean. (3rd edn.) Colchester: Informa.

Johnson, Andy (2007). Poverty cut in half, Sunday Express, May 13.

Lewin, David, and Sweet, Susan. (2005). The Economic Impact of Mobile Services in Latin America. Report for GSMA, GSM Latin America, and AHCIET, Indepen and Ovum, UK.

Lucky R. W. and Eisenberg J. (eds.) (2006). Renewing U.S. Telecommunications Research. Washington DC: The National Academies Press. http://books.nap.edu/openbook.php?record_id=11711&page=R1. Accessed May 9, 2007

Mallalieu, K. (2006). Pro Poor Mobile Capabilities: Service Offering in Latin America and the Caribbean. A Background Paper

Melville Juliet, Wint, Eleanor (eds.) (2007). A New Perspective on Poverty in the Caribbean: The Strength of a Participatory Approach. Kingston, Jamaica: Caribbean Development Bank/ Ian Randle Publishers.

Ministry of Finance. (2004). Trinidad and Tobago: Government of the Republic of Trinidad and Tobago,

Ministry of Social Development. (1996). The Determination and measurement of poverty in Trinidad and Tobago- Indicators From the 1992 Survey of Living Conditions. Trinifdad and Tobago: Government of the Republic of Trinidad and Tobago,

Moonesinghe, A., de Silva, H., Silva N., and Abeysuriya, A. (2006). Telecommunications use on a Shoestring: Expenditure and Perceptions of Costs amongst the Financially Constrained. Version 3.0 WDR Dialogue Theme 3rd Cycle Discussion Paper, WDR0610. September 2006. Available at: http://www.lirneasia.net/wp-content/uploads/2007/04/moonesinghe-de-silva-silva-abeysuriya-2006-teleuse-exp-cost-v30.pdf. Accessed May 7, 2007

Sharma, N. (2007). Mobile villagers climb social ladder. The Financial Express. March 04, 2007. http://www.financialexpress.com/fe_full_story.php?content_id=156648. Accessed May 8 2007.

Souter, D., Scott, N., Garforth, G., Jain, R., Mascarenhas, O. and McKemey, K. (2005). The Economic Impact of Telecommunications on Rural Livelihoods and Poverty Reduction: A study of rural communities in India (Gujarat), Mozambique and Tanzania. Report of DFID KaR Project 8347, 2005. London, UK Department for International Development (DFID)

Teekens R. (1990). Poverty data from two Family Budget Surveys in Trinidad and Tobago, 1989.

TATT. (2006). Domestic Market Analysis of the Telecommunications and Broadcasting Sectors January – March 2006. Trinidad and Tobago: Telecommunications Authority of Trinidad and Tobago (TATT) Available at http://www.tatt.org.tt/ddocs/Market_updateMarch_o6.pdf. Accessed May 11, 2007

TATT. (2007). Annual Market Report: Telecommunications and Broadcasting Sectors January – December 2006. Trinidad and Tobago: Telecommunications Authority of Trinidad and Tobago (TATT). http://www.tatt.org.tt/ddocs/Market_Report_2006.pdf. Accessed October 17, 2007

Vodaphone. (2005). Africa: Impact of Mobile Phones. Moving the debate forward. The Vodafone Policy Paper Series. Number 2. March, 2005. Newbury, UK: Vodaphone.

Waverman, L., Meschi, M., and Fuss, M. (2005). The Impact of Telecoms on Economic Growth in Developing Countries. Africa: The Impact of Mobile Phones. Vodafone Policy Paper Series 2 (March 2005). London: Vodophone.

Wint, Eleanor, (2007). The Poor in the Caribbean: Some Facts Figures and Postulates. Chapter 2 in ed. Juliet Melville and Eleanor Wint, 6–23 2007. A New Perspective on Poverty in the Caribbean, The Strength of a Participatory Approach. Kingston, Jamaica: Caribbean Development Bank/ Ian Randle Publishers.

APPENDICES

Appendix 1: Country Tariffs

Table 9. Best Values in Mobile Prepaid Tariffs[4].

PREPAID Indicator	Best value Tariffs	Observations
Price of the cheapest terminal - Prepaid	$99.00	
New line connection charge	$0.00	No connection fee
SIM card cost	$49.00	
SMS cost	$0.35/$0.65	on-net/off-net
Cost of a call to a fixed line (local) - PEAK	$ 1.25	6 am - 6 pm
Cost of a call to a fixed line (local) - OFF-PEAK	$ 0.75	6 pm - 7 am
Cost of a call to a fixed line (local) - WEEKEND	$ 0.58	Friday midnight - Sunday midnight
Cost of a call to a mobile phone on-net (local) - PEAK	$ 1.15	6 am - 6 pm
Cost of a call to a mobile phone on-net (local) - OFF-PEAK	$ 0.75	6 pm - 7 am
Cost of a call to a mobile phone on-net (local) - WEEKEND	$ 0.55	Friday midnight - Sunday midnight
Cost of a call to a mobile phone off-net (local) - PEAK	$ 1.50	7 am - 6 pm
Cost of a call to a mobile phone off-net (local) - OFF-PEAK	$ 1.50	6 pm - 7 am
Cost of a call to a mobile phone off-net (local) - WEEKEND	$ 1.40	Friday midnight - Sunday midnight
Value of the cheapest prepaid card	$ 10.00	
Validity of the cheapest prepaid card (in days)	365	Worst is 90 days

[4] Long distance national does not apply in Trinidad and Tobago

Table 10. Best Values in Mobile Postpaid Tariffs.

POSTPAID Indicators	Best Value Tariffs	Observations
Price of the cheapest terminal - Prepaid	$0.00	Selected telephones come free with postpaid plan
Monthly fixed charge	$86.25	
New line connection charge	$0.00	No connection fee
Contract duration (in months)	12	
Minutes included in plan	120	
SMS included in plan	50	
Is the terminal included in the cost of the contract?	No	
SMS cost	$0.35/$0.65	On-net/off-net for SMS outside of included SMS
Cost of a call to a fixed line (local) - PEAK	$0.79/$0.85	bundled minutes/outside bundled minutes
Cost of a call to a fixed line (local) - OFF-PEAK	$0.79/$0.85	
Cost of a call to a fixed line (local) - WEEKEND	$0.79/$0.85	
Tarification method	Per Second Billing	
Calling or Receiving party pays?	Calling Party Pays (CPP)	

Fixed Line Tariffs

At the time of the survey, there was only a single fixed line provider in Trinidad and Tobago. The standard charge rate codes for calling between areas in the twin-island republic are shown in Table 11, with a fixed unlimited tariff applicable for calls within the same area and various charge codes, A – I, applicable between different areas. Rates are higher during peak hours, 8:00 a.m. to 5:00 p.m., and lower during off peak hours. There are no special weekend rates, the day and night rates apply as usual. Calls to local mobile telephones cost TT$0.80 per minute across all networks.

Table 11. Standard Local Fixed Rates.

Code	A	B	C	D	E	F	G	H	I
Charge (TT$)	0.23 unlimited	0.69/min	0.61/min	0.46/min	0.35/min	0.31/min	0.23/min	0.15/min	0.08/min

Three fixed line 'Smart Choice' packages are available with a preset monthly payment and come with a preset bundled number of minutes for fixed, mobile and international calls respectively. The bundled minutes for mobile calls only apply to TSTT mobile destinations. Smart Choice prices for local calls, international calls and Internet access are shown in Table 12, Table 13 and Table 14 respectively, quoted in TT$ before the applicable 15% Value Added Tax (VAT).

Table 12. TSTT Fixed Line Packages – Local Calls.

Local Calling Features	**Gold**	**Silver**	**Bronze**
Monthly package fee	$250	$180	$100
Bundled minutes to fixed lines per month	Unlimited	900	500
Fixed line calls outside bundled mins (rate / min)	Free	$0.25	$0.25
Bundled minutes to TSTT mobile calls per month	100	75	25
Mobile calls outside bundled minutes (rate / min)	$0.80	$0.80	$0.80

Table 13. TSTT Fixed Line Packages – International Calls.

International Calling Features	Gold	Silver	Bronze
Bundled international minutes	100	75	25
Calls outside bundled minutes	Day	Evening	Weekend
USA, Canada, UK and Ireland (rate / min)	$1.25	$1.00	$0.50
Caribbean, Venezuela, India (rate / min)	$1.50	$1.00	$0.75
Rest of the world (rate / minute)	$2.50	$2.00	$1.50
Other countries*	$6.00	$6.00	$6.00
'Talk n' Save' discounts	20% off 5 int'l numbers	20% off 4 int'l numbers	20% off 3 int'l numbers

Note: International calls to mobile telephones attract a $1.00 minute surcharge except USA, Canada and other countries with Receiving Party Pays.
Day: Mon - Fri, 7 am to 6 pm; Evening: Mon - Fri, 6 pm to 7 am; Weekend: Friday midnight to Sunday midnight
**Other countries include Antarctica, Ascension, Christmas & Cocos Keeling Islands, Comoros, Cook Island, Cuba, Falkland Islands, Greenland, Guinea Bissau, Kiribati, Nauru Island, Niue Island, Norfolk Islands, Papua New Guinea, Sao Tome and Principe, Solomon Islands, Somalia, St Helena, Tokelau, Tuvalu, Vanuatu, Wallis and Futuna.*

Table14. TSTT Fixed Line Packages - Internet Access.

International Calling Features	Gold	Silver	Bronze
Internet	Gold	Silver	Bronze
Savings on high speed internet access monthly fee	20%	15%	10%

Public Phone Tariffs

Public payphone rates are exactly the same as fixed line rates as given in Table 13 TSTT Fixed Line Packages – International Calls. Calls to local mobile telephones cost TT$0.80 per minute across all networks. The coin operated payphones only allow local calls while card operated payphones allow both local and international calls.

There are two types of calling cards available, namely 'Companion' and 'Talk Fuh So'. 'Companion' calling cards allow local and international calls from any touch-tone telephone. They are available in $10, $30, $60 and $100 denominations. 'Talk Fuh So' calling cards **only** allow international calls from public payphones. They are

available in $20 denomination only. Please note that all prices are quoted in TT$ before the applicable 15% Value Added Tax (VAT).

Table 15. Public Payphones Rates

Indicators: PUBLIC PAYPHONES	Tariffs	Observations
Cost of call to fixed line – PEAK (8 am to 5 pm.)	$0.08, $0.15, $0.23, $0.31, $0.35, $0.46, $0.61, $0.69	Same cost as fixed line, depending on location
Cost of call to fixed line - OFF-PEAK (5 pm to 8 am.)	$0.08, $0.15, $0.23	
Cost of call to fixed line – WEEKEND	$0.08, $0.15, $0.23, $0.31, $0.35, $0.46, $0.61, $0.69	No weekend rates
Cost of call to mobile – PEAK	$ 0.80	Across all networks
Cost of call to mobile - OFF-PEAK	$ 0.80	
Cost of call to mobile - WEEKEND	$ 0.80	
Tarification method	per minute	
Minimum value of card	$11.50	

Appendix 2: Methodology

National Socio-economic (NSE) Indicator

In planning this survey the percentage of the population considered to be low-income was derived from the national poverty reports of Trinidad and Tobago. The most recently published information, provided in the 2004 Trinidad and Tobago Poverty Reduction and Social Development Revised Draft Report (IADB 2004), categorized as poor "households with adult equivalent per capita expenditure values less than TT$376.54 per month." That report estimated the poor at 24% of the population.

However, the *Analysis of the 2005 Survey of Living Conditions in Trinidad and Tobago* (Kairi Consultants 2007), categorizes as poor, "households with adult equivalent per capita expenditure values less than TT$653.99 per month", and estimates that 17% of the population can today be defined as poor.

Since eliciting information on income, and related, issues proved difficult during the survey, other measures were also used to assist in focussing the survey analysis on the genuinely poor respondents. These were:

- Provisions for supply of potable water
- Quality of housing as indicated by the material used for walls

Sampling Strategy

The probabilistic sample was selected using a combination of sampling methodologies at different stages:

Stage 1: The sample size was chosen such that the margin of error was +5% with a 95% confidence interval. This is a generally accepted standard for samples of this nature.

Stage 2: The overall sample size was calculated as shown in Table 16.

Table 16. Calculation of Overall Sample.

National Population[5]	1,262,366
Total low-income Population Percentage[6]	24.00
Total low-income Population, N	302,968
Margin of Error, e	5.00
Confidence Interval (%)	95.00
Level of Confidence, z	1.96
Sample Size[7]	384
No Response Factor (%)	10
Calculated Sample Size	422
Final Sample Size	**500**

[5]Source: CSO (2000)
[6] Source: IADB (2004) using data derived from 1997/1998 Household Budgetary Survey
[7] Calculated using $[((N(z/2e)^2)/(N-1+ (z/2e)^2)]$

Stage 3: The overall sample was then allocated according to the available poverty data. The sample was allocated by the larger listed areas as shown in Table 17.

Table 17. Calculation of Sample by Geographic Area.

Island	Area	Urban / Rural	% of Poor Population[8]	% of Sample	Number of Respondents
Trinidad	Port of Spain	Urban	2.6	13	13
	San Fernando	Urban	2.7	14	14
	St. George	Urban, Rural	32.9	165	98
	Caroni	Urban, Rural	7.6	38	94
	Nariva / Mayaro	Rural	4.9	25	22
	St. Andrew / St. David	Urban, Rural	9.1	46	101
	Victoria	Urban, Rural	20.6	103	88
	St. Patrick	Urban, Rural	15.3	77	86
Tobago	Tobago	Urban, Rural	4.3	22	21
TOTAL			**100**	**503**	**537**

The Ministry of Social Development (Ministry of Social Development 1996, 23) found the highest incidence of poverty to be in the San Juan/Laventille (12.7%) and Tunapuna/ Piarco (9.7%) regions. They also found that "A significant proportion of the poor were located in the Sangre Grande area . . . the more densely populated County of St. George, therefore, contained the largest share of the country's poor-28.9%" (Ministry of Social Development 1996) and "Among the poorest households are those found in Rio Claro/ Mayaro, Sangre Grande, Princess Town, Point Fortin and Siparia, where the poor constitute more than 40% of the households. The Rio Claro/ Mayaro area appeared to have the highest proportion of poor households-constituting 56.5%"(Ministry of Social Development 1996, 61).

Stage 4: This sample was then further subdivided into the LOW-INCOME communities that belong to each larger area. In the absence of data permitting accurate numerical definition of 'pockets of poverty', an alternative approach was

[8] Source: IADB (2004) Table 4, p. 49

formulated to select the samples at the community level. A combination of sources was used, as follows:

- The latest available electoral list[9], as used in the Lirne-Asia methodology, was used as a preliminary guide.
- Supporting data, including information from the Central Statistical Office (CSO)[10] contributed to defining the population demographics and the location of specific communities to be sampled.
- The company contracted to conduct the field work also utilised its rich experience of the socio-economic characteristics of communities in directing field staff as to which specific low-income urban and rural communities to target.

The specific target communities are listed in Table 18 and illustrated in with the sample requested in each area. The size of samples, by area, was slightly above those initially calculated, to ensure that the overall minimum target of 500 completed questionnaires was achieved.

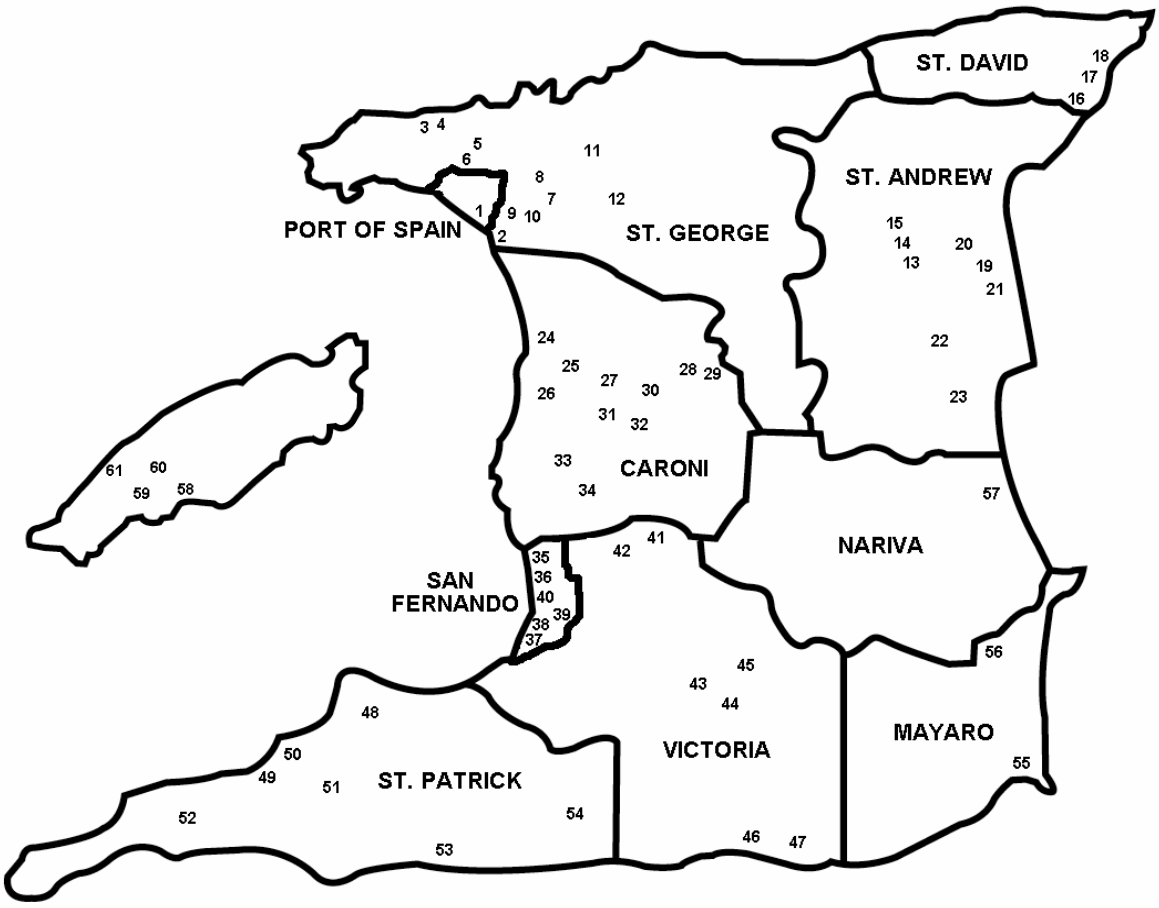
[9] The Electoral List is provided by the Elections and Boundaries Commission and the version utilised was the list as of first quarter 2007.
[10] Supporting data included but was not limited to the CSO 2000 Population and Housing Census data as well as the CSO – Geographic Information Section – Map of Population Distribution of communities by Municipal Corporations.

Table 18. Sample by Target Community with Quota.

Target Communities with Quota		
MAP #	**Area**	**Sample**
	PORT OF SPAIN	
1	Sea Lots	7
2	Beetham Estate	6
	ST. GEORGE	
3	Bagatelle	10
4	Patna Village	10
5	Debe / Belle Vue	10
6	Upper St. James	10
7	Malick	10
8	Never Dirty	10
9	Laventille	10
10	Morvant	10
11	La Canoa	10
12	Mt. D'Or	10
	ST. ANDREW / ST. DAVID	
13	Sangre Grande	10
14	Walk Street	10
15	Pines	10
16	Rampanalgas, Toco	7
17	North Eastern Settlement, Toco	7
18	Bois Bande, Toco	7
19	Fishing Pond	10
20	Oropouche	10
21	Brooklyn Settlement	10
22	Coal Mine	10
23	Plum Mitan	10
	CARONI	
24	Felicity, Chaguanas	7
25	Petersfield	7
26	Old Train Line, Chaguanas	10
27	Enterprise, Chaguanas	7
28	Talparo	10
29	Tamana	10
30	Mamoral	10
31	Brasso	10
32	Chickland, Chaguanas	7
33	Calcutta Settlement No. 2, Couva	7
34	Basta Hall, Couva	7

Target Communities with Quota		
MAP #	**Area**	**Sample**
	VICTORIA	
35	Old Train Line - Harmony Hall, Marabella	10
36	Old Train Line – Agnes Street, Vistabella	10
41	Mayo	10
42	Claxton Bay dump	10
43	Diggity Road, Barrackpore	10
44	Carat Hill, Barrackpore	10
45	5th Company	10
46	La Lune, Moruga	10
47	La Ruffin, Moruga	10
	SAN FERNANDO	
37	Embacadere	3
38	Paradise Cemetery	3
39	The Six (Adjacent to Sting Nightclub)	4
40	King's Wharf, San Fernando	4
	ST. PATRICK	
48	Sobo Village, La Brea	10
49	Point Ligoura, Pt. Fortin	10
50	New Lands, Pt. Fortin	10
50	Salazar Trace (Mora), Pt. Fortin	10
52	Chatham	10
53	Quinam	10
54	Rock Road	10
	NARIVA / MAYARO	
55	La Savanne / Guayaguayare	9
56	Cedar Grove, Mayaro	8
57	Kernahan Village, Manzanilla	8
	TOBAGO	
58	Scarborough	5
59	Signal Hill	5
60	Patience Hill	5
61	Bethel	5
	TOTAL	**525**

Figure 13. Low-income Communities Sampled.



Stage 5: The sample was then stratified based on the available national demographic statistics, although some variations were expected because of a number of factors including, but not limited to:

1. An internal migration of poverty catalyzed by urban expansion, employment opportunities, infrastructural development, etc.
2. Changes in residential distribution patterns, especially due to the recent impetus on government assisted housing programmes.
3. Changes in population growth-reduction patterns by area, which have occurred over the past decade.

As such, the sample had to be re-allocated by smaller communities to ensure that the participation of low-income respondents was solicited, since this was a major objective of the survey.

Actual Sample Distribution

Gender

Notwithstanding the expected deviations, the sample distribution in gender of respondents) closely matched national demographics (Table 19).

Figure 2. Gender Distribution of Respondents.

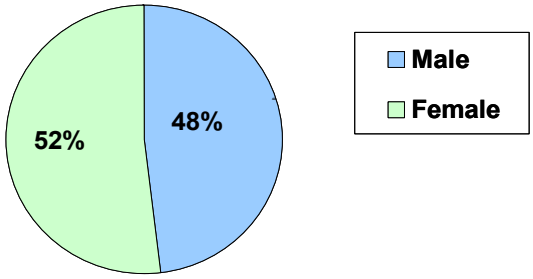


Table 19. Gender Comparison: Survey / National[11].

	Male (%)	Female (%)
National	50	50
Respondents	48	52

Age

The distribution of ages across sampled low-income respondents is shown in Figure 15, with this distribution of ages offset against national figures in Table 20. From the comparison it can be seen that for most of the age groups shown, the values were within a ± 2% range of matching the national demographic structure. The biggest disparities were in the 10–14 and 15–19 age groups, which fell short in terms of the actual respondents. This can be explained by the fact that persons belonging to these age groups would normally be in attendance at school, or may be at work, during the time periods when the field interviews took place. In many cases, older persons are

[11] Source: CSO (2000.)

most likely to be present at home during the day which accounts for the higher percentages of persons in the higher age groups.

Figure 15. Age Distribution of Respondents.

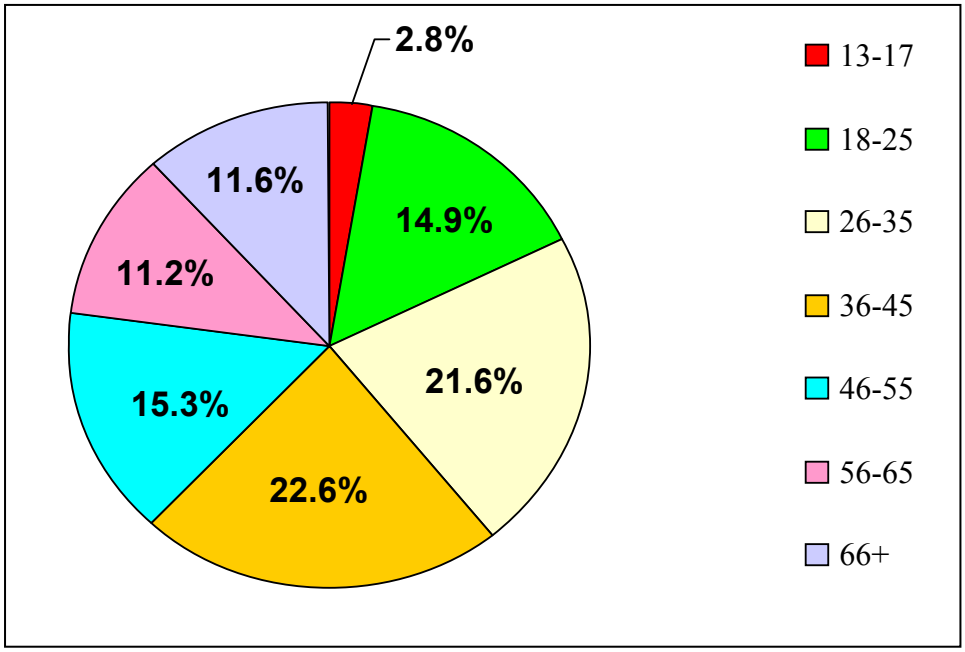


Table 20. Age Comparison: Survey / National[12].

	Age Groups%											
	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
National	13.8	12.4	11.3	12.0	10.4	8.6	7.1	5.7	4.7	3.7	3.3	7.1
Respondents	0.4	4.9	10.4	10.8	10.8	12.2	8.4	11.8	6.5	5.3	5.3	13.2

Size of Household

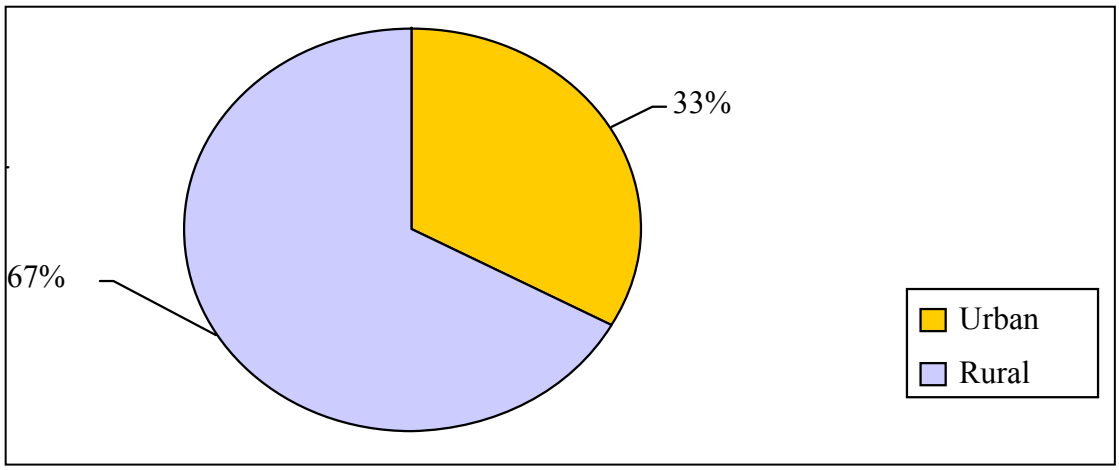
Most of the households visited had between two and five family members in residence.

Urban/rural

A 1:2 ratio in terms of urban to rural respondents, reflected the areas selected for survey due to the fact that rural low-income communities are more prevalent than urban low-income communities.

[12] Source: CSO (2000.)

Figure 16. Urban/Rural Distribution of Respondents.



Housing

The survey showed that the urban poor generally have better quality houses than the rural poor. The majority of respondents (63.4%) in urban areas have walls made of brick, block, stone, gravel, cement or concrete while the majority of respondents in rural areas (46.3%) had walls made of wood or adobe. The range of materials used among the rural low-income population was also more diverse that their urban counterparts with some rural inhabitants having walls made of discarded materials or reeds, bamboo, palm leaves and/or mud.

Water supply

Published data shows that roughly 70% of all households have piped water supply and water borne toilet facilities (CSO 2000). The survey showed that the provision of water is much better for urban than for rural low-income areas. A high percentage of the urban respondents had piped water in their homes while the corresponding figure was lower for rural respondents. Generally, the second most accessible water source for both the urban and rural low-income population was barrel water (collected rainwater).

Fieldwork Notes

Quite different response rates were achieved for the different sections of the questionnaire which was structured as follows:

1. General data distinguishing the interviewee including a detailed address, respondent's name, age, gender and the date and time of the visit.
2. Section I – Data on household members – including names, relationship with the head of the household, age, gender, literacy, occupation, income, etc.
3. Section II – Housing data / traits – including specifics on the dwelling unit including such as occupancy time, construction materials, access to utilities, etc.
4. Section III – People that have used a mobile phone service – including length of use, ownership of mobile, cost of mobile, service provider, reason for choice, expenditure on mobile, frequency of expenditure, ratings on cost, etc..
5. Section IV – People who have **not** used a mobile phone service – including reason for not using mobile, future purchase plane, package choice, cost rating, etc.
6. Section V – Households that have a fixed landline phone – including length of installation, frequency of calls (made/received), scope of usage, cost ratings, behavioural forecasting, etc.
7. Section VI – Households that don't have a fixed phone line (landline) – including reason for choice, future indications, expenditure behaviour, etc.
8. Section VII – Internet – Usage patterns, cost ratings, extent of use, quality of life impact, etc.
9. Section VIII – Other forms of communication – including communication alternatives, call frequency, recipients of communication, public telephone access, cost ratings et al.
10. Interviewer's remarks – interviewer and supervisor name, etc.

Constraints

The main limitations encountered during this exercise, especially with regard to fieldwork, were as follows:

1. Many respondents became impatient due to the length of the survey.

2. Respondents were generally hesitant or unable to reveal information about income and the corresponding source of such income. As a result Sections I and II (above) consistently had the lowest response rate throughout the entire field exercise

3. The findings of this exercise are not representative of Trinidad and Tobago consumers as a whole. The data presented here are only representative of the opinions and behaviour patterns of low-income telephone users and cannot be extrapolated to interpret national circumstances.

References for Appendix 2

CSO. n.d. Percentage Distribution of Households, by Urban/Rural Area and Facilities Available for use. Continuous Sample Survey of Population (CSSP). Trinidad and Tobago: Central Statistical Office (CSO)

http://cso.gov.tt/statistics/pdf/Table17_HBS.pdf. Accessed May 20, 2007

CSO. (2000). Population and Housing Census Community Register. Trinidad and Tobago: Central Statistical Office (CSO)

Kairi Consultants. (2007). Analysis of the 2005 Survey of Living Conditions in Trinidad and Tobago. Report prepared for the Ministry of Social Development, Government of Trinidad and Tobago. Trinidad and Tobago: Kairi Consultants Ltd

IADB. (2004). The 2004 Trinidad and Tobago Poverty Reduction and Social Development Revised Draft Report. Report prepared for the Inter-American Development Bank by Kairi Consultant Ltd., Trinidad and Tobago.

Ministry of Social Development. (1996). The Determination and measurement of poverty in Trinidad and Tobago- Indicators From the 1992 Survey of Living Conditions. Trinidad and Tobago: Government of the Republic of Trinidad and Tobago,