PAKISTAN ICT INDICATORS SURVEY – 2014

GALLUP PAKISTAN

Affiliated with Gallup International

Pakistan's Foremost Social Research Lab

December 2014

Table of Contents

Table of Contents

List of Tables and Figures

Table of Contents

List of Figures

Section 1: Household Indicators

Section 1.1: Households

Table of Contents

List of Boxes

ACKNOWLEDGEMENTS

The **Pakistan ICT Indicator Survey 2014** has been prepared by Gallup Pakistan for the **National ICT R&D Fund**, which is a part of the Ministry of Information Technology, Government of Pakistan. This survey was designed over a range of indicators to adequately assess the ICT landscape in Pakistan.

Gallup Pakistan would like to thank all the National ICT R&D Fund Team involved in this study including but not restricted to following: **Mr. Wasim S. Hashmi Syed, General Manager (Monitoring), Mr. Jawad Azfar, Manager (Monitoring), Mr. Ihsan Ellahi, Manager (Monitoring), Mr. Muhammad Idrees Awan, Manager (Project Evaluation), Mr. Asfand Yar Khan, Deputy Manager (Monitoring), Mr. Mohsin Mahmood, Deputy Manager (Coordination).** The Monitoring team has also been supported for various activities by **Mr. Muhammad Jehanzeb Shahid, Assistant Manager (Monitoring).**

Various references were consulted for this publication. The publication from the **Partnership on Measuring ICT for Development**, by the United Nations Statistics Division, OECD and Eurostat was especially helpful for measuring and understanding ICT indicators. Other material includes a similar survey conducted by Egypt for measuring its ICT penetration along with a report from INSEAD on global ICT infiltration.

For benchmarking purpose Gallup-KPMG study 2001, commissioned by Ministry of Science and Technology has been extensively used. Similarly for international benchmarking World Bank Data Portal has been widely used and quoted.

Gallup Pakistan would also like to thank over 5000 men and women across Pakistan who agreed to be part of the survey work conducted for the study. We wish to acknowledge their trust and generosity, expressed to Gallup's Male and Female interviewers.

FOREWORD

Information and communications technologies (ICTs) have become a widespread feature of societies and economies around the world. These technologies and their associated applications are becoming increasingly critical for social and economic development. The transformational effects engendered by permeation of ICTs around the world are bedded in the emergence of the modern "knowledge economy", which derives its core production and consumption processes from the available ICT infrastructure and resources.

ICTs have also begun exercising valence over social and political realms – domestically, as well as internationally. Social communication and interactions around the world are increasingly cast and conducted in a vocabulary heavily immersed in ICT services. This transformation in societal infrastructure is one of the most powerful effects triggered by the global spread of ICTs. Furthermore, ICTs have increasingly become an effective and efficient tool and platform for conducting political communication, deliberation, participation and mobilization. Recent domestic political changes and upheavals from around the world underline the growing significance of ICTs in vocalizing and exercising political actions. Perhaps the most important indication of the growing salience of ICTs around the world is their status as a paradigm for facilitating and nourishing the fundamental human rights discourse – as evidenced by the United Nation's declaration of internet accessibility as a right necessary for exercising and enjoying the human rights to freedom of expression and opinion, and other fundamental human rights. This global declaratory regulation instructs all states to ensure that unrestricted internet access is broadly available to a state's populace.

Over the last two decades ICTs have changed formats and broken technological barriers to induct new services into different arenas. These technologies have expanded globally with increasing velocity in this time period, while concurrently becoming core structural features of the global economy. The linkages between ICTs and economic progress in general, and the quantification of these impacts have been a source of intense research and debate around the world.

The growing importance of ICTs is reflected in the creation of harmonized global indicators to quantify, gauge, and assess ICT prevalence and quality in each state. These indicators are designed and disseminated widely by the International Telecommunications Union (ITU). All states have been encouraged to incorporate these indicators into their policy institutions as a route to facilitate the growth and expansion in ICTs domestically.

The criticality of ICTs in different realms has heightened the importance of creating comprehensive, sustainable, and progressive national strategies for facilitating the growth and increasing penetration of ICT services and resources. The Government of Pakistan (GoP) has broadly recognized and accepted its role as a regulator and policy-maker in facilitating the increasing penetration of ICTs throughout the country. Over the last decade and a half, the importance of unleashing the potential of ICTs in Pakistan has been prominent in the official governmental discourse, as well as policies crafted by the GoP.

As a part of its efforts to enhance ICT proliferation in the country, the Government of Pakistan has dedicated a portion of gross revenues generated from the telecommunication industry to invest in the development and research of ICTs. The Government views this initiative as an important step in transforming Pakistan's economy into a modern knowledge economy – aligned and at par with global standards and practices. This vision has been reified in the creation of the National ICT R&D Fund under the Section 42 of the Companies Ordinance of 1984.

This Report is based on the nationwide research study undertaken by Gallup Pakistan for the National ICT R&D Fund. In pursuance of its mandate, the Fund commissioned this research and analysis publication to

update national baseline ICT indicators. The nationwide data presented in this publication provides a composite picture of the prevalence and penetration of ICTs in Pakistan.

The data in this publication was collected and analyzed primarily for three clusters: households, students/schools, and enterprises. Together these three clusters complete the socio-economic universe in which ICTs are applied. The statistical details and analysis, including qualitative analysis, that follows in this report is the first step in building a solid evidence pool on ICT indicators in the country that will serve two important purposes. First, the in-depth ICT indicator data in this publication will provide a picture of the ICT landscape in the country that can be compared with other countries and regions in the world. Second, the empirical data gathered and analyzed here will provide strong statistical evidence to chart the progress of ICT indicators, as well as formulate sound and effective policies for the development of ICTs in the country.

Gallup Pakistan Team		**National ICT R&D Fund Team**	
1	Dr. Ijaz Gilani, *Chairman (Gallup Pakistan)*	1	Wasim S. Hashmi Syed, General Manager (Monitoring)
2	Bilal Gilani, CEO (Gallup Pakistan)	2	Jawad Azfar, Manager (Monitoring)
3	Taimur Saeed, Assistant Manager (R&D)	3	Ihsan Ellahi, Manager (Monitoring)
4	Murad Javed, *Assistant Manager (R&D)*	4	Muhammad Idrees Awan, Manager (Project Evaluation)
5	Umar Taj, Consultant	5	Asfand Yar Khan, Deputy Manager (Monitoring)
		6	Mohsin Mahmood, Deputy Manager (Coordination)
		7	Muhammad Jehanzeb Shahid, Assistant Manager (Monitoring)

The Have-nots of the IT Revolution in Pakistan: Unserved ICT Households of Pakistan

Gallup Pakistan has done a summarising exercise to understand the overall ICT landscape of Pakistan by looking at the unserved ICT households (HHs) across Pakistan. The definition of '*unserved*' included those households who do not have any of the following key ICT gadgets:

Gallup Criterion for ICT Unserved HHs

- No mobile phone
- No radio
- No computer
- No internet
- No landline

Our understanding is that these unserved HHs are the have-nots of the ICT revolution that has happened between the years 2001 and 2014. In terms of the hierarchy of government priorities, the inclusion of these unserved ICT households should be at the top.

Scope of 'Unserved' ICT Households

According to Gallup analysis, around 21% of households in Pakistan are unserved by ICT. These households do not have basic ICT instruments such as mobile phones or any sophisticated instrument such as the internet.

This adds up to **5.2 million households** or about **35 million men and women** who do not have access to even the basic ICT instruments.

What is the profile of these unserved ICT households?

For any policy prescription in this direction, it is crucial to know the answers to these questions: who are these unserved 35 million men and women? Where do they live? What is their age, education and gender?

The following key findings emerged from this analysis done by Gallup experts.

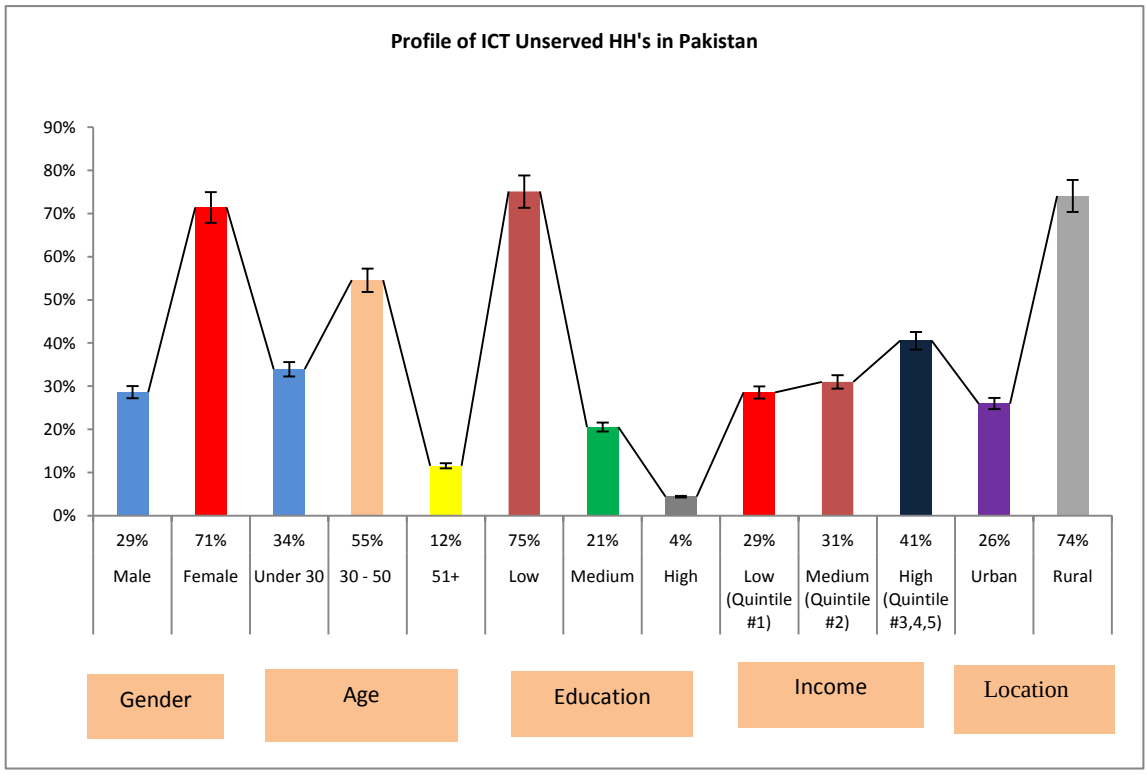
a) Significant Gender Disparity

The unserved population of Pakistan are mainly females i.e. 71% of the unserved population of Pakistan are females. One of the primary underlying factors in poor ICT penetration among females is the huge disparity in literacy rates between males and females. According to the recent figures available in Economic Survey 2014, females are twice as likely to be illiterate when compared with males across Pakistan. In Balochistan and many Low HDI (Human Development Index) districts of Sindh, this likelihood of being illiterate can be as high as three times.

b) Significant Urban- Rural Disparity in Access to ICT

74% of unserved Pakistanis live in rural areas of Pakistan. Many initiatives of the Government of Pakistan and in particular that of Ministry of Information Technology (MoIT) under the USF (Universal Services Fund) have targeted rural areas in multi-pronged ways, addressing both supply of ICT as well as creating and facilitating the demand for ICT in the past ten years. However, Gallup ICT Indicators Study 2014, points to many gaps that still exist in reducing the ICT Rural-Urban Divide. Gallup experts are also of the opinion that many of the unserved villages in Pakistan have a supply issue rather than a demand issue. In general, Pakistanis across the board have readily adopted different new technologies, irrespective of income and education. The gap, therefore, is explained more by the lack of supply.

c) Education and Access to ICT



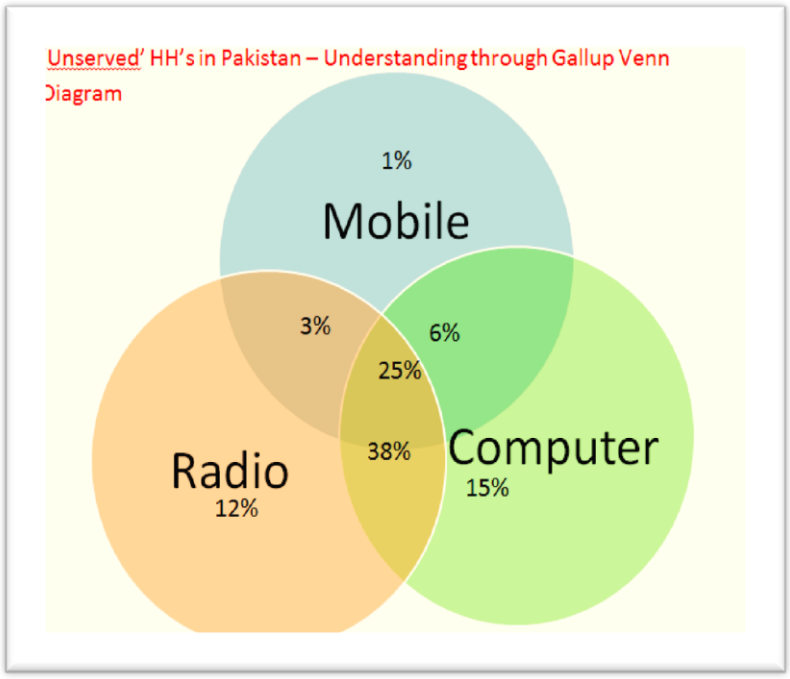
Source: Pakistan ICT Indicators Survey, 2014

Interestingly, education has been found to be one of the key determinants of access to ICT. 75% of unserved Pakistanis belong to the lowest education strata i.e. they are either illiterate or only have Primary Education. Gallup experts are of the opinion that literacy is a good predictor of access and use of ICT in Pakistan. In other words, as one's education attainment improves, access to and use of ICT improves significantly. It is hoped that with near universal primary enrolment in Pakistan (Aser 2014) and a far larger proportion of Pakistani men and women attaining tertiary education (Undergraduate and Postgraduate – recent estimate shows a 1,000% increase in enrolment between 2002 and 2014 (Economic Survey 2014)) would increase access to ICT dramatically among younger cohorts.

Venn diagram for Understanding the Access to Mobile, Radio and Computer

Gallup experts have looked at the ICT access data from Pakistan, through the Gallup Venn Diagram, the renowned way of summarizing data.
We have taken three key indicators:

- Use of radio
- Use of mobile phones
- Use of computer



Source: Pakistan ICT Indicators Survey, 2014

The diagram shows a whole set of ICT indicators in a succinct manner. For example 25% Pakistanis do not have either of three ICT gadgets 12% have just radio but no mobile phone or internet for example.

Regional Analysis of ICT Access in Surveyed Districts

Gallup has further come up with ICT **'Unserved' District Index** in which ranking of the poorest ICT Index is done.

Below table shows the data.

Serial	Divisions	Unserved by ICT % of HH's
1	BAHAWALPUR	33%
2	BANNU	*
3	D. I. KHAN	30%
4	DERA GHAZI KHAN	22%
5	FAISALABAD	32%
6	GUJRANWALA	29%
7	HAZARA	5%
8	HYDERABAD	39%
9	KALAT	*
10	KARACHI	13%
11	KOHAT	*
12	LAHORE	18%
13	LARKANA	27%
14	MALAKAND	12%
15	MARDAN	12%
16	MIRPUR KHAS	*
17	MULTAN	25%
18	NASIRABAD	42%
19	PESHAWAR	24%
20	QUETTA	8%
21	RAWALPINDI	12%
22	SARGODHA	37%
23	SIBI	*
24	SUKKUR	48%
25	ZHOB	*

Note: The color scheme shows Unserved Index i.e. Green is the most served and Red is the most unserved.

* Sample size is too small for analysis.

Scope for Universal ICT Access and Usage: No too far a dream

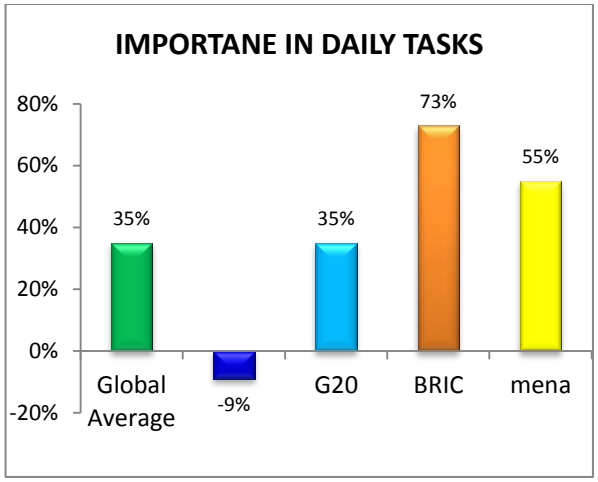
The efficacy of ICT infrastructure in creating efficiency by enhancing people's mobility, both literally and figuratively, is quite established. Much of this report has and will talk about the causal links clearly established by a multitude of studies ranging from those done by ITU (International Telecommunications Union), UNCTAD (United Nations Conference on Trade and Development) and likes to those done by private sector like the McKinsey Global Institute.

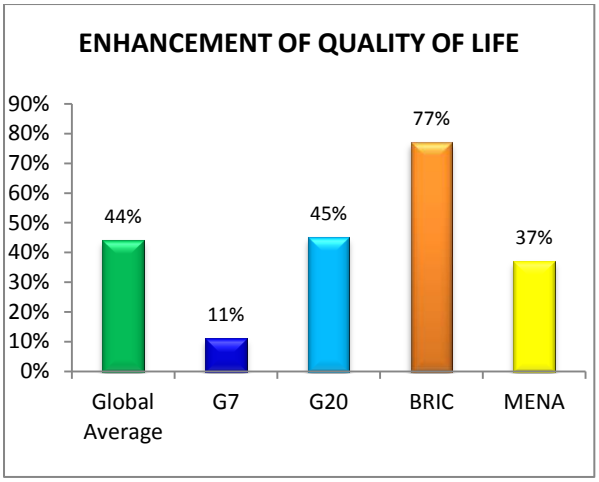
How far is Pakistan from benefiting to the fullest from ICT and achieving universal ICT access and use? In order to understand this question we take the proxy of mobile phones as a good equivalent of other ICT gadgets and try to understand if there is a demand for ICT in Pakistan. In other words how important does the consumer perceive the ICT gadgets (proxy mobile phones) to be in solving different normal day problems.

A global study done by Gallup International and presented at the GSMA Congress 2013, the world's largest gathering of the IT Sector.

Following are the key findings:

Mobile is a symbol of mobility: Emerging nations including those in the MENA (Middle East and North Africa) region value mobile phones much more than upscale markets.



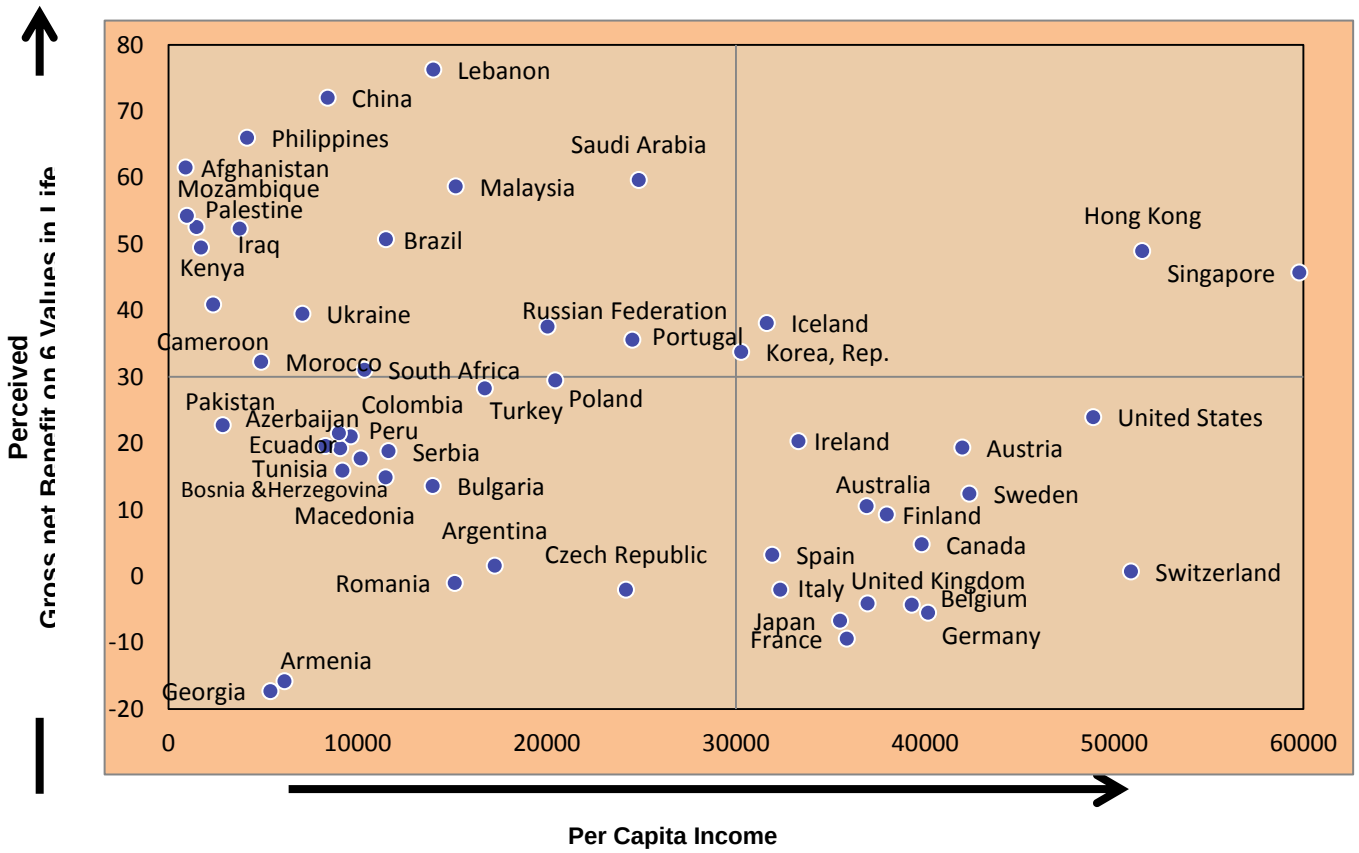


*Work, daily Chores, Social life, Knowledge, knowing the World and achieving ones potential in life

As the above tables suggest, emerging nations see greater efficacy of ICT (proxy mobile phones) than the developed world. They perceive ICT to be a great tool in enhancing the quality of life.

Across low and high Income countries: Low-income countries and specially emerging nations put a higher value on the benefits of mobile phones.

As the below data shows, Pakistan ranks similarly to low income countries on the perceived benefit of mobile technologies.



Source: Gallup International Social Media Study 2013-14

DEFINITIONS OF ICT INDICATORS

DEFINITIONS OF ICT INDICATORS

SECTION 1.1: Household Based Indicators		
Indicator		Definitions and notes
HH1	Total number of households in Pakistan	A household is a group of two or more persons who make some common provision for food or other essentials of living and who are without usual place of residence elsewhere
HH2	Proportion of households with access to electricity	Electricity is not an ICT commodity, but it is an important prerequisite for using many ICTs. It is therefore included in the core list as a reference indicator.
HH3	Proportion of households with a radio	*Proportion of households with a radio* is calculated by dividing the number of in-scope households with a radio by the total number of in-scope households.
HH4	Proportion of households with a TV	*Proportion of households with a TV* is calculated by dividing the number of in-scope households with a TV by the total number of in-scope households.
HH5	Number of households with Cable TV Connections in Pakistan	Total count of households in the country who obtain television transmission through a cable connection.
HH6	Total population watching Cable Television	Total count of individuals in the country who use a cable connection to routinely view television content.
HH7	Total population watching Terrestrial Television	Total count of individuals in the country who use an antenna for receiving and viewing television content.
HH8	Proportion of households with telephone	*Proportion of households with telephone* (fixed or mobile) is calculated by dividing the number of in-scope households with a telephone (fixed or mobile) by the total number of in-scope households.
HH9	Proportion of Fixed Telephone lines per 100 inhabitants	*Fixed telephone lines per 100 inhabitants* are calculated by dividing the number of fixed telephone lines by the population and multiplying by 100.
HH10	Proportion of households with a computer	*Proportion of households with a computer* is calculated by dividing the number of in-scope households with a computer by the total number of in-scope households.
HH11	Primary uses of computers at home	The list of computing activities performed by the individual or any member of the household. The list of activities is then reported by its relative share compared to all other activities.
HH12	Percentage share of branded and unbranded computers	Branded computers comprise of all hardware parts being marketed under the same brand. Unbranded computers comprise of hardware marketed under a range of brands.
HH13	Percentage share of new versus used computer	This definition can be approached in two ways. Firstly, a new computer may refer to that computing device which has not been used previously and the current owner of this device is its first owner. The second approach could be the elapsed time period in which the computing device has been bought. More simply, it could refer to a new computer which has been bought within a certain time frame.
HH14	Share of laptops/notebooks versus desktops	Laptop computers, also known as notebooks, are portable computers that can be taken and used in different environments. They include a screen, keyboard, and a track pad or trackball, which serves as the mouse. Because laptops are meant to be used on the go, they have a battery which allows them to operate without being plugged into a power outlet. Laptops also include a power adapter that allows them to use power from an outlet and recharges the battery. A desktop computer (or desktop PC) is a computer that is designed to stay in a single location. It may be a tower (also known as a system unit) or an all-in-one machine, such as an iMac. Unlike laptops and other portable devices, desktop computers cannot be powered from an internal battery and therefore must remain connected to a wall outlet.

Definitions of ICT Indicators

HH15	Proportion of individuals who used a computer in the last 12 months	The *proportion of individuals who used a computer* is calculated by dividing number of in-scope individuals who used a computer from any location in the last 12 months by the total number of in-scope individuals.
HH16a	Proportion of households with internet access	The *proportion of households with Internet access* at home is calculated by dividing the number of in-scope households with Internet access by the total number of in-scope households.
HH16b	Percentage of the population using internet	The number of internet users expressed as a percentage of the total population in the country. Internet usage may refer to any activity performed on the internet or any means through which the internet is accessed.
HH17	Proportion of individuals who used the Internet in the last 12 months	The *proportion of individuals who used the Internet* is calculated by dividing the total number of in-scope individuals who used the Internet (from any location) in the last 12 months by the total number of in-scope individuals.
HH18a	Number of internet users in Pakistan	The total count of individuals across the country who have used the internet to perform any online activity with any type of internet connection.
HH18b	Location of individual use of the Internet in the last 12 months	The proportion of individuals who used the Internet at each location can be calculated as either: the proportion of in-scope individuals or the proportion of Internet users, using the Internet at each location.
HH18c	City-wise and urban-rural distribution of internet users	The proportion of internet users in selected cities (top 10) and the relative share of urban and rural internet users.
HH19	Internet activities undertaken by individuals in last 12 months	Internet activities undertaken by in-scope individuals from any location in the previous 12 months. Internet activities are defined per the response categories in provided in the Statistical Report.
HH20	Major purposes (at least four main purposes) of using the internet	Internet activities are: use of the Internet for getting information (several response categories per the model question below), for communicating, for purchasing or ordering goods or services, for Internet banking, for education or learning activities, for dealing with government organisations and for leisure activities (several response categories per the model question below).
HH21	Proportion of households with access to the internet by type of access	The number of households with access to the internet expressed as a percentage of total number of households in the country. Further categorization based on the mechanism employed to obtain internet service.
HH22	Frequency of individual use of the internet in the last 12 months	Frequency of use can be: at least once a day, at least once a week but not every day, at least once a month but not every week, or less than once a month. For international comparability, output is most simply presented as the proportion of in-scope individuals using the Internet with each frequency.
HH23	Percentage of narrowband/dialup internet users versus broadband	Broadband internet defined as having connectivity speed of over 256 kbps, while narrowband is defined as internet connectivity speeds of under 256 kbps. The indicator depicts the relative share of each of these two segments among the total internet users in the country.
HH24	Split of fixed line internet usage versus wireless internet use	Fixed broadband refers to technologies such as DSL (Digital Subscriber Line), cable modem, high speed leased lines, fibre-to-the-home, power line, satellite etc.
HH25	Split of fixed/static internet users versus mobile users	Mobile internet refers to technologies such as Wideband CDMA (W-CDMA), known as Universal Mobile Telecommunications System (UMTS) in Europe; High-speed Downlink Packet Access (HSDPA), complemented by High-Speed Uplink Packet Access (HSUPA); CDMA2000 1xEV-DO and CDMA 2000 1xEV-DV. Access can be via any device (handheld computer, laptop or mobile cellular telephone etc.).

Definitions of ICT Indicators

HH26	Split of internet users from mobile/cellular phones versus others	Mobile internet users have been defined as those users who access the internet on their mobile device to obtain services such as GPRS or Edge (the two types of mobile internet services available in Pakistan)
HH27	Proportion of internet users with both, mobile and fixed line internet connections	The percentage of internet users who access internet services using both fixed line segments and mobile segments,
HH28	Fixed Internet Subscribers per 100 inhabitants	Internet subscribers per 100 inhabitants are obtained by dividing the number of Internet subscribers by the population and multiplying by 100. An Internet subscriber is someone who pays for access to the public Internet (a TCP/ IP connection). The statistic is measured irrespective of the type or speed of access, the type of device used to access the Internet, or the method of payment.
HH29	Fixed broadband internet subscribers per 100 inhabitants	Broadband Internet subscribers per 100 inhabitants are obtained by dividing the number of Broadband Internet subscribers by the population and multiplying by 100. Broadband access is defined as being equal to, or greater than 256 kbps, as the sum of the capacity in both directions.
HH30	Mobile broadband subscriptions per 100 inhabitants	Mobile broadband refers to technologies at speeds of at least 256 Kbit/s, in one or both directions, such us Wideband CDMA (W-CDMA), known as Universal Mobile Telecommunications System (UMTS) in Europe; High-speed Downlink Packet Access (HSDPA), complemented by High-Speed Uplink Packet Access (HSUPA); CDMA2000 1xEV-DO and CDMA 2000 1xEV-DV. Access can be via any device (handheld computer, laptop or mobile cellular telephone etc.).
HH31	Fixed broadband internet access tariffs per month is US $, and as a percentage of monthly per capita income	The Internet access tariff includes the tariff components of monthly line rental, line usage charge and Internet access charge, plus any tax that may be levied (as this is a service used by both residential and business consumers).
HH32	International Internet bandwidth per inhabitant (bits/second/inhabitant)	International Internet bandwidth refers to the capacity which backbone operators provision to carry IP traffic measured in bits per second.
HH33	Proportion of individuals who used a mobile cellular telephone in the last 12 months	Dividing the number of individuals who have used a mobile cellular phone for any given activity over the last 12 months by the total number of individuals
HH34	Percentage of population covered by a mobile cellular telephone network	The percentage of households with a mobile cellular telephone is calculated by dividing the number of in-scope households with a mobile cellular coverage by the total number of in-scope households and multiplying by 100.
HH35	Mobile cellular telephone subscriptions per 100 inhabitants	*Mobile cellular subscribers per 100 inhabitants* are obtained by dividing the number of mobile cellular subscribers by the population and multiplying by 100.
HH36a	Current growth rate of internet in Pakistan	This is calculated by the addition in internet users over a certain time period expressed as a percentage of total accumulated internet users.
HH36b	Internet usage in age cohorts	The percentage of internet users in a range of age wise categories. The age segments are treated as a separate group, among which the rate of internet usage is determined.
HH37	Mobile cellular telephone prepaid tariffs per month in US$, and as a percentage of monthly per capita income	Mobile cellular prepaid tariffs are based on the methodology of the OECD monthly low-user basket13 (version 2001), which includes the cost of monthly mobile usage for 25 outgoing calls (on-net, off-net and to a fixed line) in predetermined ratios, plus 30 SMS messages
HH38	Percentage of localities with public Internet access centers (PIACs)	Percentage of localities with public Internet access centres (PIACs) is computed by dividing the number of localities with at least one PIAC by the total number of the country's localities and then multiplying by 100.

SECTION 1.2: Educational Institutes Based Indicators		
Indicator		Definitions and notes
S1	Proportion of schools with a radio used for educational purposes	The proportion of schools with a radio is used for educational purposes is calculated by administrative data collection through annual school census (or extract data from school records).
S2	Proportion of schools where a television is used for educational purposes	The proportion of schools where a television is used for educational purposes is calculated by administrative data collection through annual school census (or by extracting data from school records).
S3	Proportion of schools with a telephone communication facility	The proportion of schools with a telephone communication facility is calculated by administrative data collection through annual school census (or by extracting data from school records).
S4	Proportion of schools with internet access by type of access	The proportion of schools with internet access by type of access is calculated by administrative data collection through annual school census (or by extracting data from school records).
S5	Proportion of learners who have access to internet at school	The proportion of learners who have access to internet at school is calculated by administrative data collection through annual school census (or extract data from school records) or through a sample school survey or household survey.
S6	Learners-to-computer ratio in schools with computer-assisted instruction	The Learners-to-computer ratio in schools with computer-assisted instruction is calculated by administrative data collection through annual school census (or by extracting data from school records).
S7	Proportion of ICT-qualified teachers in schools	The proportion of ICT-qualified teachers in schools is calculated by administrative data collection through annual school census (or by extracting data from school records).
S8	Percentage of students who use internet at schools, colleges, universities and do not use internet at home	The percentage of users who perform internet activities in their place of education and do not perform internet activities at their place of residence,
S9	Split of internet users between students and the general population	The composition of internet users segregated among students and the non-student population.
S10	Proportion of schools with electricity	Schools with electricity as a percentage of the total number of schools in the country.

SECTION 1.3: Enterprise Based Indicators		
Indicator		Definitions and notes
E1	Proportion of businesses using computers	The proportion of businesses using computers is calculated by dividing the number of in-scope businesses using computers during the 12-month reference period by the total number of in-scope businesses. Sub-indicators may be constructed using the classificatory variables, industry and size (for details, see 'Methodological notes' below). An example of a sub-indicator is the proportion of manufacturers using computers.
E2	Primary uses of computers in offices	This refers to the main activities performed on a computing device located at the place of work. These activities incorporate official usage of computing devices.
E3	Proportion of businesses using the internet	The proportion of businesses using the Internet is calculated by dividing the number of in-scope businesses using the Internet by the total number of in-scope businesses. Sub-indicators may be constructed using the classificatory variables, industry and size.
E4	Proportion of persons employed routinely using the internet	The proportion of employees using the Internet is calculated by dividing the number of employees using the Internet (in all in-scope businesses) by the total number of employees (in all in-scope businesses). Sub-indicators may be constructed using the classificatory variables, industry and size.

E5	Proportion of businesses with a web presence	The proportion of businesses with a Web presence is calculated by dividing the number of in-scope businesses with a Web presence by the total number of in-scope businesses. Sub-indicators may be constructed using the classificatory variables, industry and size. A Web presence includes a Web site, home page or presence on another entity's Web site (including a related business). It excludes inclusion in an online directory and any other Web pages where the business does not have substantial control over the content of the page.
E6	Proportion of businesses receiving orders over the internet	For international comparability, the proportion of businesses receiving orders over the Internet is most simply calculated by dividing the number of in-scope businesses receiving orders over the Internet by the total number of in-scope businesses. Alternatively, output could be presented as the proportion of in-scope businesses using the Internet (for a discussion of this, see 'Methodological notes' below). Sub-indicators may be constructed using the classificatory variables, industry and size.
E7	Proportion of businesses placing orders over the internet	For international comparability, the proportion of businesses placing orders over the Internet is most simply calculated by dividing the number of in cope businesses placing orders over the internet by the total number of in-scope businesses. Alternatively, output could be presented as the proportion of in-scope businesses using the Internet. Sub-indicators may be constructed using the classificatory variables, industry and size.
E8	Internet-usage activities in Pakistani enterprises	The major segments in which enterprises utilize the internet to perform official online tasks.
E9	Proportion of businesses using the internet by type of access	A major aim of this indicator is to present the proportion of in-scope businesses with broadband access; therefore the response categories chosen allow aggregation to narrowband and broad-band. As businesses can use more than one type of access service, multiple responses are possible. For international comparability, output is most simply presented as the proportion of in-scope businesses using each type of access service, for instance, the proportion of businesses accessing the Internet by DSL.
E10	Proportion of businesses with an intranet	The proportion of businesses with an intranet is calculated by dividing the number of in-scope businesses with an intranet by the total number of in-scope businesses. Sub-indicators may be constructed using the classificatory variables, industry and size. An intranet refers to a network using the same protocol as the Internet and allowing communication within an organisation. It is typically set up behind a firewall to control access.
E11	Proportion of businesses with an extranet	The proportion of businesses with an extranet is calculated by dividing the number of in-scope businesses with an extranet by the total number of in-scope businesses. Sub-indicators may be constructed using the classificatory variables, industry and size. An extranet is a private, secure extension of an intranet running on Internet protocol. It allows selected external users to access some parts of an organization's intranet.
E12	Proportion of businesses with a local area network (LAN)	The proportion of businesses with a LAN is calculated by dividing the number of in-scope businesses with a LAN by the total number of in-scope businesses. Sub-indicators may be constructed using the classificatory variables, industry and size. A local area network (LAN) refers to a network connecting computers within a localized area such as a single building, department or site; it may be wireless.

E13	Proportion of persons employed routinely using computers	The proportion of persons employed (by in-scope businesses) who routinely used a computer during the reference period. A computer is a desktop or a laptop computer. It does not include equipment with some embedded computing abilities such as mobile cellular phones, personal digital assistants (PDAs) or TV sets.
E14	Proportion of businesses using the internet by type of activity	Internet activities undertaken by in-scope businesses during the reference period

SECTION 1.4: Production Based Indicators		
Indicator		Definitions and notes
M1	Proportion of total business sector workforce involved in the ICT sector	ICT workforce (or ICT employment) consists of those persons employed in businesses that are classified as belonging to the ICT sector. Total business workforce represents all persons engaged in domestic production in the business sector. In a national accounts framework, employment can be measured in terms of headcounts, jobs, full-time equivalents (FTE) or hours worked
M2	ICT sector share of gross value added	Gross value added for a particular industry represents its contribution to national GDP. It is sometimes referred to as GDP by industry and is not directly measured (but is estimated in a national accounts framework). In general, it is calculated as the difference between production (gross output) and intermediate inputs (the energy, materials and services required to produce final output).
M3	ICT goods imports as a percentage of total imports	ICT goods are defined per the OECD's 2003 ICT goods classification, based on the 1996 and 2002 Harmonized System classification. It can be found in UNCTAD (2007)
M4	ICT goods exports as a percentage of total exports	ICT goods are defined per the OECD's 2003 ICT goods classification, based on the 1996 and 2002 Harmonized System Classification. It can be found in UNCTAD (2007)
M5	Proportion of learners enrolled at the post-secondary level in ICT-related fields	Number of learners currently admitted in ICT-related fields as a percentage of all learners enrolled in educational institutions in a given country at the post-secondary level
M6	What are the segments, such as homes, multinationals, local businesses or government agencies in which these computers are being sold and what is the percentage share of each segment?	Incidence of computer hardware sales across the country, categorized into segments of the population.
M7	What is the overall size of the computer market in US$?	(Computer market is defined as laptops/PCs/Servers/ Notebooks/etc. as well as networking equipment and storage, which are to be reported against separately.
M8	What is the current growth rate?	The increase in size of the computer market relative to the previous year
M9	What is the percentage of users who use Internet at office (or work place) and do not use Internet at homes?	The segment of users who use internet for official purposes at the workplace but do not use it for domestic purposes at their place of residence

SECTION 1.5: Government Sector Based Indicators		
Indicator		Definitions and notes
G1	Proportion of persons employed in central government organizations routinely using computers	The proportion of persons employed routinely using computers is calculated by dividing the number of persons employed routinely using computers in all in-scope activities, by the total number of persons employed (in-scope)
G2	Proportion of persons employed in central government organizations routinely using the Internet	The proportion of persons employed routinely using internet is calculated by dividing the number of persons employed routinely using internet in all in-scope activities, by the total number of persons employed (in-scope)

G3	Proportion of central government organizations with a Local Area Network (LAN)	The proportion of organizations with a LAN is calculated by dividing the number of in-scope organizations with a LAN by the total number of organizations
G4	Proportion of central government organizations with an intranet	The proportion of organizations with an intranet is calculated by dividing the number of in-scope organizations with an intranet by the total number of organizations
G5	Proportion of central government organizations with Internet access, by type of access	This indicator should be calculated as the proportion of in-scope organizations with Internet access that use each type of access service, for instance, the proportion of organizations with Internet access that use a broadband service as their means of access.
G6	Proportion of central government organizations with a web presence	The proportion of organizations with a web presence is calculated by dividing the number of in-scope organizations with a web presence by the total number of in-scope organizations
G7	Selected Internet-based services available to citizens, by level of sophistication of service	The main indicator is expressed in terms of the percentage of a country's population that is theoretically able to access each Internet-based service. Note that this does not refer to whether a citizen has the equipment or knowledge necessary to access those services, whether s/he needs to access those services or whether s/he directly benefits (for example, most of the services are not relevant to children but they are assumed to indirectly benefit if their parent or guardian accesses services electronically). The ability to access each service will usually be linked to the relevant jurisdiction, for example, a citizen residing in a particular state will theoretically be able to access Internet-based services offered by that state government, though may not need to, wish to, or be technically capable of doing so

Source: *Core ICT Indicators*, Partnership on Measuring ICT for Development (2005), "Revisions and Additions to the Core List of ICT Indicators" (*Partnership*, 2009).

INTRODUCTION

INTRODUCTION

Gallup Pakistan was commissioned by National ICT R&D Fund to undertake a research study to update ITU ICT Indicators in Pakistan. Following a successful award of the project to Gallup, three modules of survey work were undertaken during January 2014:

Module 1: HH Survey of n=3000 spread across urban and rural Pakistan, covering all four provinces of Pakistan.
Module 2: Education Institutions Survey with n=500 schools and n=500 students across the country.
Module 3: Enterprise Survey with n=500 from urban and rural areas of Pakistan

The report for this study comprises of two volumes:

Volume 1: Descriptive and Analytical Report
Volume 2: Statistical Report

The report comprises of three sections with tabular data for a total of **81** indicators. In each of the three sections, indicators covered are as follows:

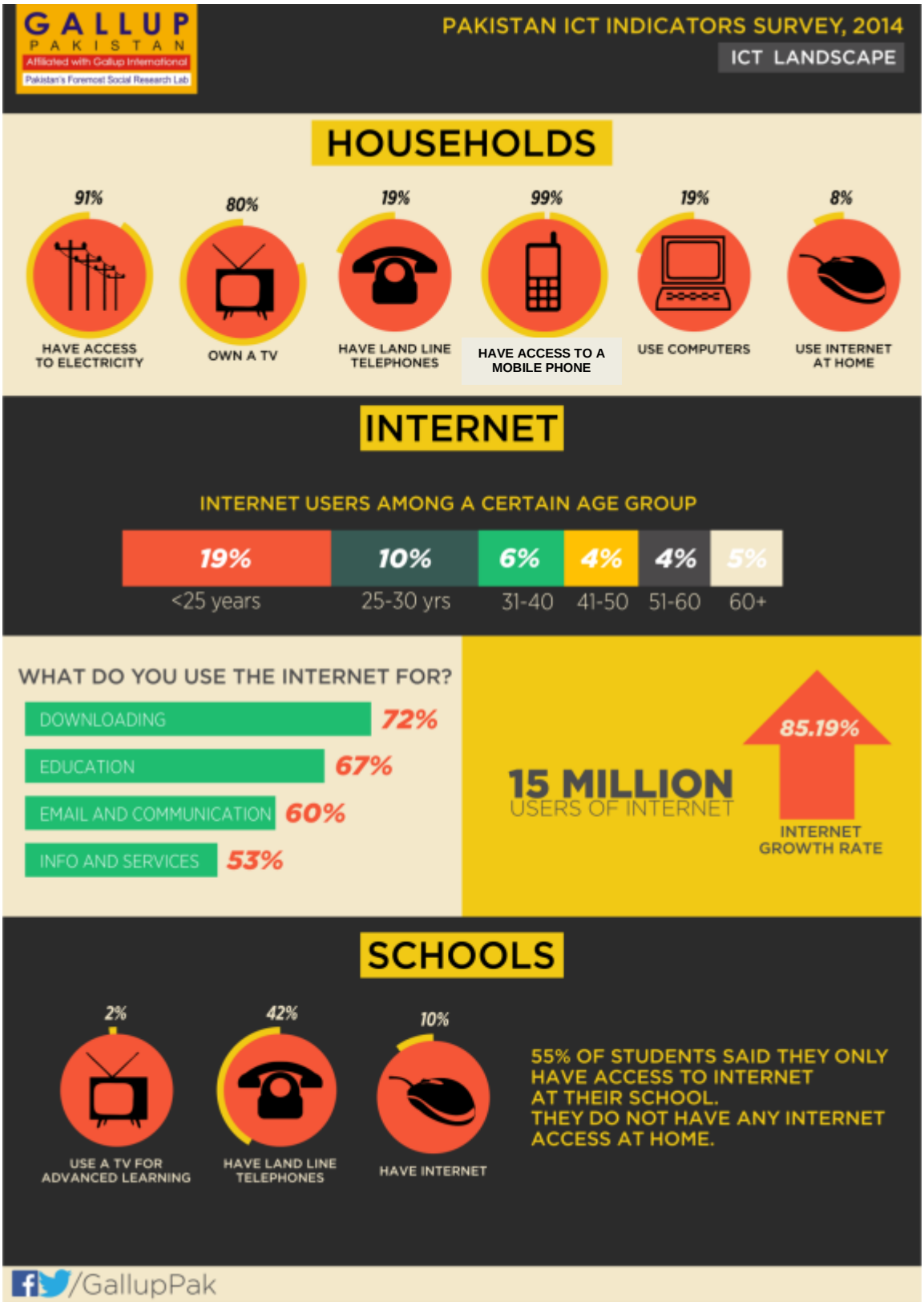
Section 1:	HH based indicators	41
Section 2:	Education Institutions indicators	10
Section 3:	Enterprise Indicators	14
Section 4:	Production Indicators	9
Section 5:	Government Indicators	7

If there are any further queries regarding the tabular data, please do not hesitate to contact the undersigned.

Sincerely,

Taimur Saeed
Project Lead from Gallup Pakistan
Email: taimur.saeed@gallup.com.pk

EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

SECTION 1: **CURRENT ICT LANDSCAPE**

Households Based ICT Indicators

Households: 91% have Electricity; 27% have Radio

There are over 26 million households in Pakistan. Of these, **91%** have access to electricity as of 2010. In a previous survey in 2000, only **80%** of households had electricity. The number was even lower in 1990 at **60%** (Global Tracking Framework).

When asked about a radio, only 27% of Pakistani households claimed to own one.

Households: 80% own TV; 13.9 million have cable television connections

80% Pakistani households own a television. A breakdown shows that the figure is higher for urban areas (**92%**) compared to rural areas (**75%**).

The number of households with a cable connection is **13.9 million** and the number of cable television viewers in Pakistan is over **63 million**. The total number of viewers who watch terrestrial television is **49.7 million**.

Households: 19% have landline connections; 3.2 lines/100 inhabitants

Only **19%** of Pakistani households have a fixed landline connection. A provincial analysis shows that KPK leads in this indicator with **57%** households having a landline connection while Sindh has the least at **7%.**

Connection to telephone lines per 100 inhabitants is also low. Only **4%** of the population had telephone lines in 2009 and 2010 and this percentage fell down to **3%** in 2011 and remained at **3%** for 2012. According to the current numbers, only **3.22** fixed telephone lines are present for 100 inhabitants.

Mobile Phone: 99% users; 92% with network coverage

99% Pakistanis claim they have used a mobile phone in the past 12 months. Furthermore, at the moment **92%** of the Pakistani population has mobile cellular network coverage (PTA Annual Report, 2013).

According to this survey, **66.7** individuals per 100 inhabitants have mobile cellular telephone subscriptions.

Computer: 19% users; 55% of computer users use it for viewing videos

22% Pakistani households have a computer but only **19%** of the households claim to have used in the past 12 months. **29**% of the computer users said they used the computer for the internet, **55%** of computer users said to watch videos and **13%** said they use it for calculations. **29%** Pakistani computer users use it to gather information, **2%** use it for other purposes and **22%** don't use it.

When asked if they own a branded or an unbranded computer, **54%** computer users said their computer was branded compared to **37%** who said it was not branded. **9%** said they did not know.

Executive Summary

Internet: 8% have access at home; 8% currently using it

Only **8%** of Pakistani households have access to the internet at home. **31%** of households with a high level of education have access to the internet compared to **1%** of low education households.

Furthermore, only **9%** of Pakistani households have used the internet in the last 12 months and only **8%** claim they are currently using the internet. So the total number of internet users in Pakistan is about 15 million.

When internet users were asked where they most frequently used the internet, home was the most popular location with **78%** of the internet using respondents using the internet at their house. **12%** used it at another person's home, **11%** used it at work and a further **11%** at their place of business. Only **2%** used the internet in a public area and **7%** used cyber cafes. **12%** claimed to use the internet on their mobile phones and **12%** mentioned other locations. These locations of internet use are not mutually exclusive as a respondent may have used the internet at more than one location.

Internet: 35% users in Karachi; 72% use it for downloading; 38% with DSL

Karachi leads the country with the highest proportion of internet users **(35%)** followed closely by Gujrat at **20%.** Lahore had only **14%** users.

Downloading remains the most popular internet activity with **72%** of the internet users using this facility compared to **67%** for education, **60%** for email communication and **53%** to gain information about goods and services.

The most popular source of internet connection is DSL at **38%** followed by cable net at **31%** and EVDO at **22%.** Furthermore, approximately **43%** Pakistani internet users use the internet once a day where as **36%** say they use to once a week compared to **21%** their usage falls below the once a week category.

Internet: 88% with broadband connections; 69% have fixed line internet

The percentage of internet using households with broadband internet connection **(88%)** is much higher than those with narrowband or dial-up connections **(12%).**

Similarly, more internet users in Pakistan have a fixed line internet **(69%)** compared to a wireless internet network **(31%).** This means that **69%** of Pakistani internet users are static/fixed users of the internet.

An analysis of mobile phone internet users shows that **11%** of the internet users in Pakistan access the internet using a mobile phone. However, **79%** of internet users in Pakistan claim they have access to both mobile and fixed internet whereas **21%** say they have access to either one.

Internet Subscriptions/100: 5 fixed internet; 0.3 mobile broadband

When it comes to internet subscriptions, there are **5** fixed internet connections for 100 inhabitants in Pakistan. This figure is even lower for mobile broadband internet subscriptions at **0.3**.

Expenditure on Internet: 10.69% of monthly income; $11.23 paid

The average Pakistani household with access to the internet pays about **10.69%** of the monthly per capita income on fixed broadband internet access. This means that an average of **$11.23** is paid by Pakistani internet users for this service.

Executive Summary

Internet Growth and Usage: 85.19% growth of internet use

The rate of internet growth in Pakistan is quite high at **85.19%.** The largest numbers of internet users are in the under 25 age bracket with **19%** of the country's internet users belonging to this category. Lowest is in the 31-40 and 41-50 age bracket at **4%.**

Internet Bandwidth: 43.8 bits/second/inhabitant

There has been a rapid rise in the international internet bandwidth per inhabitant over the past 4 years. This figure reached 43.8 bits/second/inhabitant in 2007.

Education Institutions and use of ICT

Schools: 2% use television; 42% with telephones; 10% with internet

Only **1%** of Pakistani education institutes use the radio for education purposes. Furthermore, only **2%** use the television for the same purpose. When asked if there was a fixed line telephone facility in the institute, only **42%** said yes.

Of the education institutes with internet access, **14%** used a dial up, **51%** used DSL and **20%** used a wireless local loop. **2%** of schools use GPRS, **10%** use cable net and **10%** use Wimax. **20%** education institutes said they used EVDO for internet access. These answers are again not mutually exclusive and a particular school may use more than one type of internet access.

Education Institutes: 10% with internet; 75% with ICT qualified teachers

Only **10%** of Pakistani learners have access to the internet at school. The mean learners-to-computer access ratio is **19.93** for Pakistan. Furthermore, only **75%** Pakistani schools claim to have an ICT qualified computer teacher on their staff.

Internet users: 55% at educational institute; 28% students

55% of Pakistani students say they use the internet at school, college or university but do not have such access at home. Moreover, **28%** of the internet users in the country are students.

Enterprises and use of ICT*

Businesses: 77% with computers; 76% of them for office work

77% of Pakistani businesses say a computer was used in the last 12 months for work purposes. When asked what the computer is used for, **76%** of businesses who use a computer said all office work was done on computers, **11%** said it was used for checking official emails and **13%** to use the cashier facility.

Businesses: 63% used internet for office work

Furthermore, **63%** Pakistani businesses say the used the internet for office related work in the last 12 months. **46%** of the organizations said less than **25%** of the employees used the internet for work, **30%** said between **25%** and **50%** had access and **13%** said between **50%** and **75%** had internet access.

* Please refer to definition and scope of enterprises in the methodology section

Business that said **75%** to **100%** of the employees used the internet while working was the least with **11%.**

Businesses: 49% have web presence; 26% receive orders on internet

When asked if their establishment had web presence from the first of that month, **49%** said yes and **46%** said no. **5%** did not respond.

Furthermore, **26% enterprises** receive orders for goods and services over the internet whereas **35%** of the businesses send orders for goods and services over the internet.

Internet usage at enterprises varies with **54%** using it to send and receive emails, **37%** to gain information about goods and services, **8%** for getting information from government organizations and **16%** for performing internet banking. Only **5%** use it to deal with government organizations. A majority of the businesses use DSL (**69%**) followed by Wimax (**31%**).

Businesses: 26% intranet; 15% extranet; 24% LAN

26% of enterprises use intranet compared to **15%** that use extranets. Moreover, **24%** of Pakistani businesses have a local area network (LAN).

ICT in Production Sector

Production: 2% workforce in ICT sector

2% of the Pakistani business sector workforce is engaged in the ICT sector. Business sector workforce excludes that which is engaged in agricultural activity.

Production: 4.37% share of ICT sector in Gross Value Added

The share of ICT production in the total gross value added of the Pakistani market is 4.37%. This figure can be construed as the relative size of the ICT sector in the overall economy of Pakistan.

Exports: 0.2% share of ICT sector in Pakistani Exports

ICT share in the total exports of Pakistan has remained fairly constant over the past 3 years while exhibiting a share of 0.2% in the total exports of the country.

Computer Sales: 67.95% of Computer Sales in Pakistan for Households

Among the total computer sales in the country, Households represent the highest share of computer purchasers with a share of 67.95% of all computers sold in the country. This is followed by enterprises which consume around 27% of all computer sales in Pakistan. The corresponding share for the government sector is quite low with a figure of 4.65% in this segment.

SECTION 2: COMPARISON WITH 2001 BASELINE STUDY (Gallup-KPMG Study)

Household Internet: 446,460 connections in 2001; 2,113,567 today

According to the ICT survey in 2001, there were **446,460** internet connections in Pakistani households. By 2014, this figure had increased to approximately **2.1 million**. Today about **8%** of Pakistani households have internet access which means that there has been a growth of **227%** between 2001 and 2014.

Executive Summary

Overall Internet Users: 1086% increase; 15.3 million users

In the survey conducted in 2001, there were **1.2 million** internet users in Pakistan and today this number is **15.3 million**, meaning that the country has witnessed a staggering **1086%** increase in internet connectivity in the past 12 years. In Urban locations the users have increased from **1.2 million** to **10 million** representing a **680%** growth.

Location of Internet Use: 45% at home in 2001; 78% today

In 2001, approximately **45%** of internet users accessed internet from home compared to **25%** who used cyber cafes. Today, **78%** of internet users access the facility from home and the percentage of users using cyber cafes has dropped down to **7%**.

Internet Use: 17% for emails in 2001 and 60% today

For the ICT Survey in 2001, **51%** Pakistani households' main purpose of using the internet was to chat, **17%** for emails and **17%** for internet calling. **6%** said they used it for browsing whereas **9%** said other activities.

In 2014, a majority (**72%**) of internet users say they use the facility for downloading, followed by educational purposes (**67%**) and emails (**60%**). Today, **43%** more Pakistani internet users use the facility for email communications.

Internet Expenditure: Rs. 715 in 2001; Rs. 1140 today

Between 2001 and 2014, the average expenditure on internet connections has increased by **59.44%** from **Rs. 715** in 2001 to **Rs. 1140** in 2014.

PC Ownership: 93.75% non-branded in 2001; 31% today

According to the data, in 2001 **6.25%** of PC owners had a branded PC compared to **93.75%** who had a non-branded computer. In 2014, this divide is **59%** for branded and **31%** non-branded computers.

Revenue Generation: Rs. 29.8 billion in 2001; Rs. 162.4 billion in 2014

The revenue generation by the IT sector in 2001 stood at **Rs. 29.8 billion** whereas the GDP contribution was **Rs. 6.6 billion**. Today, the revenue generation is **Rs. 162.4** billion which represents a **444%** increase.

Enterprise Internet Activity: 77% Emails in 2001; 54% emails in 2014

In 2001, **77%** of Pakistani businesses used the internet for email purposes, **48%** for fax and **25%** surfing the web. Today email accounts for **54%** of total internet activity and information about goods and services is second at **37%**.

SECTION 3: REGIONAL AND GLOBAL COMPARISIONS

Cellular Subscriptions/100 inhabitants: 71.7 in Pakistan; 96 in World

Pakistan's performance remains low in cellular subscription per 100 inhabitants at **71.7**. The only figure lower is that of Africa at **63**. The developing world averages at **89** whereas the developed world stands at **128** and the global average is **96**.

Executive Summary

Cellular Subscription Growth Rate: 7.01% for Pakistan; 5.40% for the world

In Pakistan the growth rate for mobile cellular subscriptions (**7.01%)** has been much higher than the developed world (**3.70%**), the global rate (**5.40%**) as well as the rate of the developing world (**6.10%**).

Internet Penetration: 39% global rate; 9% for Pakistan

Internet penetration in Pakistan remains quite low. Where the global rate is **39%** and the developing and developed world are at **39%** and **77%** respectively, the rate of internet penetration in Pakistan is only **9%.** This rate is lower than the African continent (**16%**), the Arab States (**38%**) as well as the Americas (**61%**) and Europe (**75%**).

Men: Women Internet Usage: 33:29 Developed; 12:6 Pakistan

The gender imbalance in internet usage in Pakistan also exists. **12%** of men compared to **6%** of women use the internet. In the developing world this ratio is **33%** to **29%** (men to women) and in the developed world at **80%** to **74%** (men to women).

Household Internet Penetration: 8% in Pakistan; 28% Developing World

The internet penetration at the household level in Pakistan is also limited. Only **8%** of Pakistani households have internet access compared to the average of **28%** in the developing world and **78%** in the developed world. Regionally, only Africa has a lower rate at **7%** as Europe (**77%**), Americas (**61%**) and Asia Pacific (**33%**) all post a higher rate.

SECTION 4: **FORECASTING TRENDS 2015-2018**

Household Computer Penetration: 10.4 million in 2018

In 2001, the numbers were 0.5 million and in 2014 they had increased to **5.8 million**. Assuming an expansion rate of **80%** in the short term (2014-2018), then in 2018 the expected household computer penetration can be approximately **10.4 million**.

Mobile Cellular Penetration: 2.4% in 2001; 72% in 2014; 93.6% in 2018

Pakistan has quite successfully incorporated mobile technology. In 2001, only **2.4%** of the population had mobile cellular access and this number has increased to **72%** in 2014. If a **6%** growth rate in mobile cellular penetration is assumed then by 2018 approximately **93.6%** of Pakistanis will have access to mobile cellular services. By 2018, the use of internet via mobile services is also expected to rise from **11%** today.

Addendum

As value-added features of the report, Gallup is offering the following additional analysis.

1- Regression Analysis for Core ICT Indicators. The purpose of this is to gather greater insights into the mechanics of the ICT framework in Pakistan. This analysis can be found in section 5 of the Report.
2- Case studies (Total 7 in numbers) from the Enterprise segment.
3- Global examples of ICT Development reported in boxes throughout the report.

Key figures from the ICT Indicator Survey 2014

HH1	Total number of households in Pakistan	26,419,591						
HH2	Proportion of households with access to electricity	91%						
HH3	Proportion of households with a radio	*27%*						
HH4	Proportion of households with a TV	*80%*						
HH5	Number of households with Cable TV Connections in Pakistan	11,317,583						
HH6	Total population watching Cable Television	66,075,042						
HH7	Total population watching Terrestrial Television	37,918,219						
HH8	Proportion of households with telephone	*19%*						
HH9	Proportion of Fixed Telephone lines per 100 inhabitants	*3.224*						
HH10	Proportion of households with a computer	*22%*						
HH11	Primary uses of computers at home	To use the internet 29%	To view videos 55%	For analytical purposes 13%	To gather information 29%	Don't use it 22%	Others 2%	
HH12	Percentage share of branded and unbranded computers	Branded 54%	Non Branded 37%	DK 9%				
HH13	Percentage share of new versus used computer	1 month ago 3%	1-3 months ago 5%	3-6 months ago 13%	6 months to 1 year ago 19%	More than one year ago 60%		
HH14	Share of Laptops/notebooks versus desktops	Laptop/Notebook 17%	Desk-top 74%	Both a Laptop and Desktop 9%				
HH15	Proportion of individuals who used a computer in the last 12 months	19%						
HH16a	Proportion of households with internet access	8%						
HH16b	Percentage of the population using internet	8%						
HH17	Proportion of individuals who used the Internet in the last 12 months	9%						
HH18a	Number of internet users in Pakistan	15,313,846						
HH18b	Location of individual use of the Internet in the last 12 months	Home 78%	Work 11%	Place of education 11%	Another person's home 12%	In a public area 2%	Cyber café 7%	Through the mobile phone 12%
HH18c	City-wise and urban-rural distribution of internet users	Karachi 35%	Gujrat 20%	Jacobabad 20%	Nasirabad 20%	Sahiwal 18%	Haripur 17%	Rahim Yar Khan 17%

		Toba Tek Singh 17%	Sheikhupura 16%	Rawalpindi 16%	Kasur 15%	Quetta 15%	Lahore 14%	Dadu 13%
		Gujranwala 12%	Sargodha 12%	Chagai 10%	Chakwal 10%	Killa Saifullah 10%		
HH19	Internet activities undertaken by individuals in last 12 months	For downloading 72%	For education purpose 67%	For sending and receiving email 60%	To gain information about goods and services 53%	To gain information about health 40%	To gain information about government institutions 35%	To gain telephone access on the internet that is VOIP 16%
		Dealing with government organizations 12%	Internet banking 9%	To buy goods and services (online shopping) 6%				
HH20	Major purposes (at least four main purposes) of using the internet	For downloading 72%	For education purposes 67%	For sending and receiving email 60%	To gain information about goods and services 53%			
HH21	Proportion of households with access to the internet by type of access	Dial up 1%	DSL 38%	Wireless local loop 10%	GPRS 17%	Cable net 31%	Wimax 5%	Evdo 22%
HH22	Frequency of individual use of the internet in the last 12 months	At least once a day 43%	At least once a week 36%	Less than once a week 21%				
HH23	Percentage of narrowband/dialup internet users versus broadband	12% vs. 88%						
HH24	Split of fixed line internet usage versus wireless internet use	69% vs. 31%						
HH25	Split of fixed/static internet users versus mobile users	69% vs. 31%						
HH26	Split of internet users from mobile/cellular phones versus others	11% vs. 89%						
HH27	Proportion of internet users with both, mobile and fixed line internet connections	79%						
HH28	Fixed Internet Subscribers per 100 inhabitants	5.47						
HH29	Fixed broadband internet subscribers per 100 inhabitants	7.46						
HH30	Mobile broadband subscriptions per 100 inhabitants	0.30						
HH31	Fixed broadband internet access tariffs per month is US $, and as a percentage of monthly per capita income	$11.23	10.69%					
HH32	International Internet bandwidth per inhabitant (bits/second/inhabitant)	2007 43.48						
HH33	Proportion of individuals who used a mobile cellular telephone in the last 12 months	99%						

HH34	Percentage of population covered by a mobile cellular telephone network	92%						
HH35	Mobile cellular telephone subscriptions per 100 inhabitants	67						
HH36a	Current growth rate of internet in Pakistan	85.19%						
HH36b	Internet usage in age cohorts	Under 25 years 19%	25–30 years 10%	31–40 years 6%	41- 50 years 4%	51-60 years 4%	60+ years 5%	
HH37	Mobile cellular telephone prepaid tariffs per month in US$, and as a percentage of monthly per capita income	$0.77/month						
HH38	Percentage of localities with public Internet access centers (PIACs)	0%						

Indicator		ICT Indicators Survey 2014						
S1	Proportion of schools with a radio used for educational purposes	1%						
S2	Proportion of schools where a television is used for educational purposes	2%						
S3	Proportion of schools with a telephone communication facility	42%						
S4	Proportion of schools with internet access by type of access	Dial up 14%	DSL 51%	WLL 20%	GPRS 2%,	Cable-net 10%	Wimax 10%	Evdo 20%
S5	Proportion of learners who have access to internet at school	10%						
S6	Learners-to-computer ratio in schools with computer-assisted instruction	19.93						
S7	Proportion of ICT-qualified teachers in schools	75%						
S8	Percentage of students who use internet at schools, colleges, universities and do not use internet at home	45%						
S9	Split of internet users between students and the general population	28%						
S10	Proportion of schools with electricity	Primary Public 36%	Primary Private 82%	Secondary Public 90%	Secondary Private 99%	Higher Secondary Public 96%	Higher Secondary Private 99%	

E1	Proportion of businesses using computers	77%						
E2	Primary uses of computers in offices	Off work is done on computer 76%	Only for checking official emails 11%	Use the cashier facility 13%				
E3	Proportion of businesses using the internet	63%						
E4	Proportion of persons employed routinely using the internet	Less than 25% (46%)	Between 25% and 50% (30%)	Between 50% and 75% (13%)	Between 75% and 100% (11%)			
E5	Proportion of businesses with a web presence	49%						
E6	Proportion of businesses receiving orders over the internet	26%						
E7	Proportion of businesses placing orders over the internet	35%						
E8	Internet-usage activities in Pakistani enterprises	Sending and receiving emails 54%	Getting information about goods and services 37%	Getting information from government/public organizations 8%	Performing internet banking or accessing other financial services 16%	Dealing with government organizations/public authorities 5%		
E9	Proportion of businesses using the internet by type of access	Dialup 6%	Wireless local loop 8%	DSL 69%	GPRS 6%	Cable Net 12%	Wimax 31%	Evdo 2%
E10	Proportion of businesses with an intranet	26%						
E11	Proportion of businesses with an extranet	15%						
E12	Proportion of businesses with a local area network (LAN)	24%						
E13	Proportion of persons employed routinely using computers	More than five persons (49%)						
E14	Proportion of businesses using the internet by type of activity	Emails 54%	Getting information about goods/services 37%	Performing Internet Banking 16%				

M1	Proportion of total business sector workforce involved in the ICT sector	2.03%						
M2	ICT sector share of gross value added	4.37%						
M3	ICT goods imports as a percentage of total imports	3.6%						

M4	ICT goods exports as a percentage of total exports	0.2%						
M5	Proportion of learners enrolled at the post-secondary level in ICT-related fields	10%						
M6	What are the segments, such as homes, multinationals, local businesses or government agencies in which these computers are being sold and what is the percentage share of each segment?	Enterprises 27.4%	Households 67.95%	Government 4.65%				
M7	What is the overall size of the computer market in US$? \	$334 million						
M8	What is the current growth rate?	8%						
M9	What is the percentage of users who use Internet at office (or work place) and do not use Internet at homes?	25%						

G1	Proportion of persons employed in central government organizations routinely using computers	57.95%						
G2	Proportion of persons employed in central government organizations routinely using the Internet	60.22%						
G3	Proportion of central government organizations with a Local Area Network (LAN)	59.36%						
G4	Proportion of central government organizations with an intranet	43.52%						
G5	Proportion of central government organizations with Internet access, by type of access	Dialup 3.95%	DSL 70.67%	GPRS 5.72%	Cable Net 14.18%			
G6	Proportion of central government organizations with a web presence	74.55%						
G7	Selected Internet-based services available to citizens, by level of sophistication of service	Hajj Applications	E-Enablement of Senate and National Assembly	E-Services at SECP	Automation of Estate Office	Development of Urdu Lexicon	Online Legal Services	Automation of Patent Office, Karachi
		E-Filing of Tax Returns, FBR						

Volume 1:

MAIN REPORT

Section 1:

CURRENT ICT LANDSCAPE IN PAKISTAN

Section 1.1:

HOUSEHOLDS

THIS SECTION REPORTS 41 ICT INDICATORS FROM PAKISTANI HOUSEHOLDS

HOUSEHOLDS

INDICATOR NUMBER 1: TOTAL NUMBER OF HOUSEHOLDS IN PAKISTAN

The total number of households in Pakistan is 26,419,591. The number reflects the composite spread of households across the country.

Household Definition:

A household is a group of two or more persons who make some common provision for food or other essentials of living and who are, without usual place of residence elsewhere.

INDICATOR NUMBER 2: HOUSEHOLDS WITH ACCESS TO ELECTRICITY

91% of all households in Pakistan were connected to the electrical grid in 2010. This number reflects a significant and steady increase in the penetration and access of electricity across Pakistan.

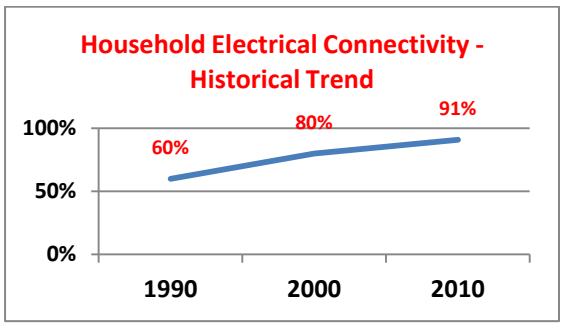
The increase in electrical connectivity for households becomes prominent when analyzed from a historical perspective. As the figure indicates, in 1990, only 60% of all households in Pakistan had access to electricity. The proportion increased to 80% in 2000, and reached 91% in 2010.

Table 1.1: **Number of Households**

Total No. of household in Pakistan	**26,419,591**

Source: Projection for 2012 using the Gallup Consumer Survey

Fig 1.1*:



Source: "Global Tracking Framework" issued jointly by the World Bank and the International Energy Agency
*This is the most recent figure available

BOX #1: ICT AND DEVELOPMENT

As ICT becomes widespread, there is a focus on research to assess the positive impact of connectivity in boosting competiveness and well-being. ICTs have gained importance in the current economic context and developing countries have to adapt to this system in order to make their economic growth more stable and sustainable. Studies reveal that ICT and development has an exponential relationship – the higher the ICT readiness of a country, the higher the social and economic impacts. This means that developing countries need to invest in building up ICT infrastructures and develop the necessary skill base required for optimal exploitation which will be necessary to obtain significant results.

UNDP-Information Communication Technology for Development
(http://web.undp.org/evaluation/documents/essentials_5.pdf)

27% of households in Pakistan own a Radio

HOUSEHOLDS

INDICATOR NUMBER 3: **PROPORTION OF HOUSEHOLDS WITH A RADIO**

Conventional radio sets are becoming technologically obsolete throughout the world. This reality is borne out in the results indicating the proportion of households with a radio set in Pakistan. 73% of Pakistani households reported that they did not possess a radio at home, while only 27% of the households still own a radio set.

When results are disaggregated along geographical lines, a clearer picture emerges. Punjab has the lowest proportion of households with a radio set at 16%, while 84% of the households in the province do not own a radio. In contrast, a significant 47% of the households in KPK still have access to a radio at home, while 53% do not own the equipment. Sindh and Balochistan lie closer to the national proportion. 28% of the households in Sindh own a radio, while 72% reported otherwise. In Balochistan, 37% of the households reported possessing a radio set, while 63% of households located in Balochistan do not have access to radio at home.

The urban-rural metric provides an alternative, yet predictable take on this indicator. More households in rural settings own a radio (29%), as compared to urban households (23%).

Socioeconomic indicators delineate alternative insights into radio ownership in Pakistani households. In general, households with higher education and income levels are more likely to own a radio at home.

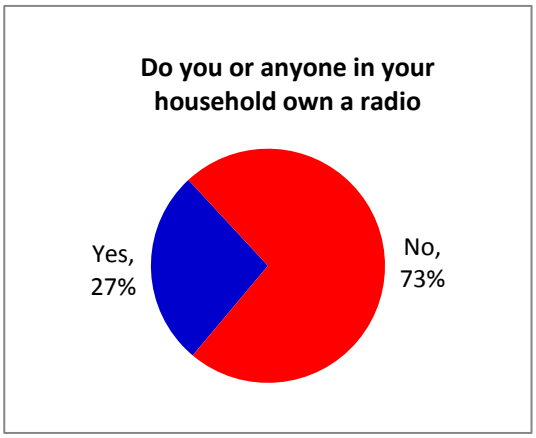
Table 1.2: **Proportion of households with a Radio**

(Row %)

Q5. Do you or anyone in your household own a Radio?			
		Yes	**No**
All Pakistan		27%	73%
Gender	**Male**	32%	68%
	Female	21%	79%
Age of the Respondent	**Under 30**	28%	72%
	30 – 50	27%	73%
	51+	22%	78%
Education	**Low**	21%	79%
	Medium	32%	68%
	High	31%	69%
HH Income	**Low (Quintile #1)**	25%	75%
	Medium (Quintile #2)	17%	83%
	High (Quintile #3,4,5)	31%	69%
Location	**Urban**	23%	77%
	Rural	29%	71%
Province	**Punjab**	16%	84%
	Sindh	28%	72%
	KPK	47%	53%
	Balochistan	37%	63%

Source: Pakistan ICT Indicators Survey, 2014.

Fig 1.2:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 3000 respondents from all four provinces, including urban and rural areas

31% of the respondents with high educational backgrounds own a radio at home, while 21% of the households with low educational levels possess a radio. Similarly, a greater proportion of high-income households (31%) retain radio sets at home. 25% of the low-income households own radio sets.

80% of households in Pakistan own a Television

HOUSEHOLDS

INDICATOR NUMBER 4: PROPORTION OF HOUSEHOLDS WITH A TV

Television has become the ubiquitous source for entertainment and information for Pakistani citizens. A substantial 80% of the Pakistani households own a television set, while only 20% lack access to this technological medium.

Provincial data further substantiates these findings. KPK has the highest proportion of households with a television set, with 87%. Punjab comes in second with 83% of the households possessing television sets. Sindh and Balochistan trailed the Northern provinces. 76% of the Sindhi households own a television set at home, while 72% of households in Balochistan reported the presence of a television set at home.

Possession of a television can also be understood from a socioeconomic vantage point – in particular, through educational and income lenses. In general, rich and educated Pakistani households are more likely to own a television set at home. 85% of the high income households in Pakistan own a television set, while the proportion drops to 66% for low-income households. Similarly, 92% of the households with high education levels own a television, which declines to 71% as household education levels to lower scales.

The urban-rural disaggregation of household television ownership follows this pattern. While a 92% of urban households own a television, the proportion decreases to 75% in rural Pakistan.

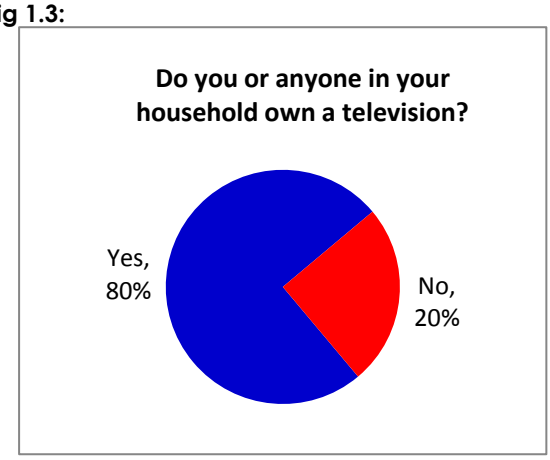
Table 1.3: **Proportion of households with a TV**

(Row %)

Q1. Do you or anyone at your home own a television?		Yes	No
All Pakistan		80%	20%
Gender	Male	76%	24%
	Female	86%	14%
Age of the Respondent	Under 30	84%	16%
	30 – 50	79%	21%
	51+	72%	28%
Education	Low	71%	29%
	Medium	87%	13%
	High	92%	8%
HH Income	Low (Quintile #1)	66%	34%
	Medium (Quintile #2)	76%	24%
	High (Quintile #3,4,5)	85%	15%
Location	Urban	92%	8%
	Rural	75%	25%
Province	Punjab	83%	17%
	Sindh	76%	24%
	KPK	87%	13%
	Balochistan	72%	28%

Source: Pakistan ICT Indicators Survey, 2014.

Fig 1.3:



Source: Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 3000 respondents from all four provinces, including urban and rural areas.

HOUSEHOLDS

INDICATOR NUMBER 5:
NUMBER OF HOUSEHOLDS WITH CABLE TV CONNECTIONS IN PAKISTAN

Number of Households with cable television connections in Pakistan	**11,317,583**

The total number of households with cable television connections in Pakistan is 11,317,583. This number represents a substantial expansion in the cable television industry in Pakistan over the last two decades.

INDICATOR NUMBER 6:
TOTAL POPULATION WATCHING CABLE TELEVISION

Total Cable Television Viewers in Pakistan	**66,075,042**

In absolute terms, the total number of cable television viewers in Pakistan is 66,075,042. This number reflects substantial increases in cable television viewership in Pakistan over the last decade.

INDICATOR NUMBER 7:
TOTAL POPULATION WATCHING TERRESTRIAL TELEVISION

Total Cable Terrestrial Viewers in Pakistan	**37,918,219**

In absolute terms, the total number of terrestrial and satellite television viewers in Pakistan is 37,918,219. This number reflects the declining share of terrestrial television viewership in Pakistan, which has been increasingly shifting to cable television. When juxtaposed, the viewership versus terrestrial/satellite television viewership tells the story of the rapid shift towards the cable spectrum of television viewing in Pakistan.

19% of all households in Pakistan have a fixed landline connection

HOUSEHOLDS

INDICATOR NUMBER 8: PROPORTION OF HOUSEHOLDS WITH TELEPHONE

Fixed landline telephone penetration has declined sharply in Pakistan since the advent of cellular services. A substantial 81% of the Pakistani households do not own a fixed landline connection at home, while only 19% of the households still retain the service.

Provincial data provides crucial insights into the geographical attributes of household access to landline connections. Households in KPK have bucked the national trend on fixed landline connections. 57% of the households in KPK still retain a fixed landline connection at home. In contrast, only 10% of the households in Punjab and 7% of the households in Sindh have fixed landline telephone connections at home. Households in Balochistan lie closer to the national proportion on this indicator. 24% of the households in Balochistan have access to fixed landline telephones at home.

The dispersion of fixed landline telephone connections in Pakistani households can also be deconstructed through socioeconomic indicators. In general, level of income and education is a stable determinant of fixed landline telephone connections in Pakistani households – where high income and high education are directly proportional to landline connections at home. While 30% of high education households have retained fixed landline connections at home, only 13% of the low education households have the same service at home. Similarly, 24% of the high income households have fixed landline connections; a proportion that declines sharply to 5% of the low-income households.

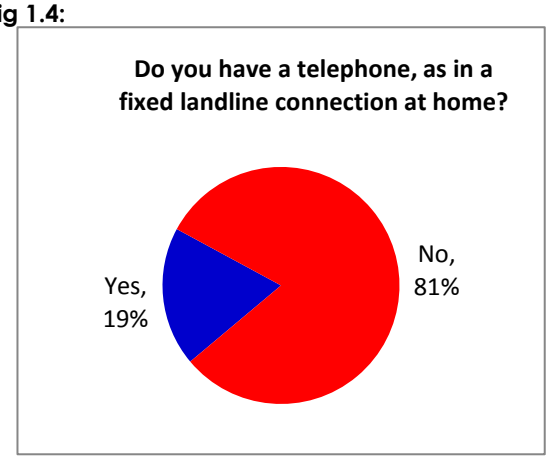
Table 1.4: **Proportion of households with telephone**

(Row %)

Q35. Do you have a telephone, as in a fixed landline connection at your home?		Yes	No
All Pakistan		19%	81%
Gender	**Male**	18%	82%
	Female	21%	79%
Age of the Respondent	**Under 30**	19%	81%
	30 – 50	20%	80%
	51+	15%	85%
Education	**Low**	13%	87%
	Medium	22%	78%
	High	30%	70%
HH Income	**Low (Quintile #1)**	5%	95%
	Medium (Quintile #2)	10%	90%
	High (Quintile #3,4,5)	24%	76%
Location	**Urban**	24%	76%
	Rural	17%	83%
Province	**Punjab**	10%	90%
	Sindh	7%	93%
	KPK	57%	43%
	Balochistan	24%	76%

Source: Pakistan ICT Indicators Survey, 2014.

Fig 1.4:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 3000 respondents from all four provinces, including urban and rural areas.

HOUSEHOLDS

INDICATOR NUMBER 9: FIXED TELEPHONE LINES PER 100 INHABITANTS

Fixed landline telephone connections are increasingly disappearing as a commonly accessed and used telephonic communication route by Pakistani households. Current data indicates that 3 fixed telephone lines per 100 inhabitants in Pakistan (3.224).

The decline in fixed landline telephone connections in Pakistani households becomes prominent when analyzed from a historical perspective. As the figure indicates, the fixed telephone line density has declined to 3.224 per 100 inhabitants in 2014, from 4 in 2009. This declining trend in fixed telephone lines is explained by the dramatic and exceptional increase in mobile cellular communication throughout Pakistan.

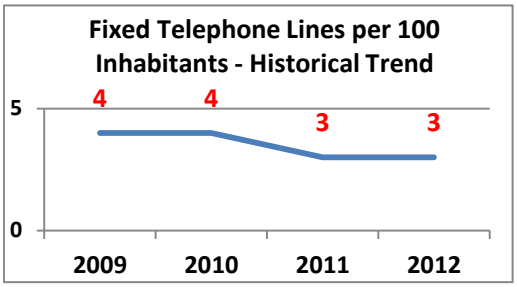
Fixed Telephone Lines per 100 Inhabitants	**3.224**

Table 1.5: **Fixed Telephone Lines per 100 Inhabitants**

Fixed telephone lines per 100 inhabitants	2009	2010	2011 *	2014
	4%	4%	3%	3%

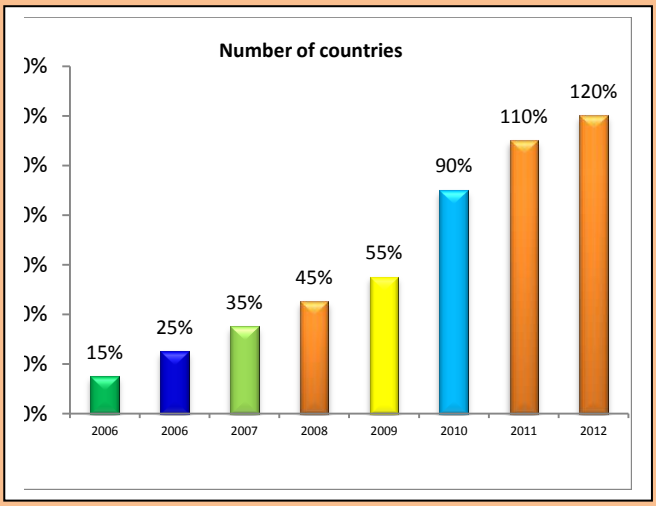
Source: Pakistan ICT Indicators Survey, 2014.
*This is the second most recent figure available

Fig 1.5*:



BOX #2: THE US NATIONAL BROADBAND PLAN

In 2009, the Federal Communications Commission (FCC) was asked by the US Congress to create a National Broadband Plan which would allow every American access to broadband capability. Such a plan required understanding broadband deployment, adoption and affordability alongside advancing US national priorities of civic participation, entrepreneurship, public safety, education, healthcare and energy. Extensive public consultation was done by the FCC and a plan was presented in 2010 which highlighted the importance of broadband for US economic opportunity, competitiveness, job creation and innovation. FCC has made significant progress since then and achieved 90% of the targets on its agenda. Today, Americans are aware of the importance of broadband and the investment in broadband infrastructure in the US is increasing along with broadband speeds. This trend is not limited to the US alone for many other countries have also jumped on this bandwagon leading to a global increase in national broadband policies since 2005 (see figure).
(www.broadband.gov)



22% of all Pakistani Households have a computer at home

HOUSEHOLDS

INDICATOR NUMBER 10: **PROPORTION OF HOUSEHOLDS WITH A COMPUTER**

Computer penetration in Pakistani households remains low. Results indicate that nationally, only 22% of the households have computers at home – regardless of whether the hardware is used. 78% of the households still lack ownership of a computer at home.

Provincial data reveals the differential access to computers at home in different regions. Households in KPK have the highest proportion of computers with 39% - above the national average. 22% of the Sindhi households possess a computer at home, while 20% of the households in Balochistan have computers at home. Both provinces hover around the national average. Surprisingly, computer penetration in Pakistani households is the lowest in Punjab, where only 18% of the households own the hardware.

The urban-rural landscape follows a predictable pattern in terms of household computer ownership. 32% of all urban households own a computer, which falls to 17% in rural areas.

The results become granular when analyzed through socioeconomic metrics. Income and education are strong determinants of computer ownership and access. Generally, as household income increases, the probability of computer ownership increases concurrently. While only 7% of the low-income households in Pakistan own computers, the proportion rises to 28% as household income reaches the higher quintiles. Data reveals that education is an even stronger predictor of computer ownership. While only 10% of the low-education households own a computer, the proportion rises sharply 49% in households with higher educational levels.

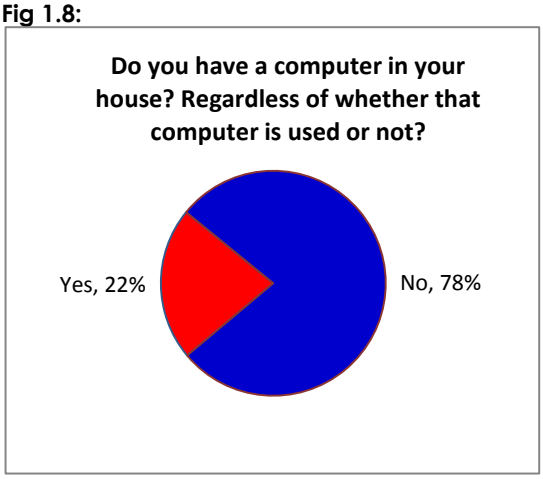
Table 1.8: **Proportion of households with a computer**

(Row %)

Q8. Do you have a computer in your house? Regardless of whether that computer is used or not?		Yes	No
All Pakistan		22%	78%
Gender	**Male**	24%	76%
	Female	19%	81%
Age of the Respondent	**Under 30**	26%	74%
	30 – 50	19%	81%
	51+	15%	85%
Education	**Low**	10%	90%
	Medium	26%	74%
	High	49%	51%
HH Income	**Low (Quintile #1)**	7%	93%
	Medium (Quintile #2)	13%	87%
	High (Quintile #3,4,5)	28%	72%
Location	**Urban**	32%	68%
	Rural	17%	83%
Province	**Punjab**	18%	82%
	Sindh	22%	78%
	KPK	39%	61%
	Balochistan	20%	80%

Source: Pakistan ICT Indicators Survey, 2014

Fig 1.8:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 3000 respondents from all four provinces, including urban and rural areas.

55% Pakistanis used computers to "watch videos"

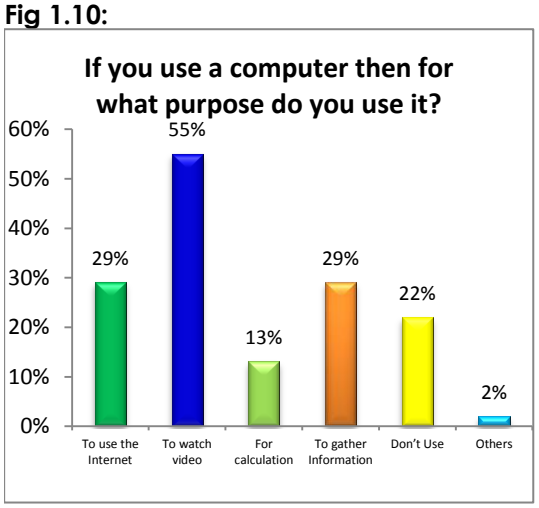
HOUSEHOLDS

INDICATOR NUMBER 11: PRIMARY USES OF COMPUTERS AT HOME

Computers can be used for a variety of purposes to match the needs of each user. Pakistani users were asked about their primary activities while using computers at home. As the figure on the right indicates, 55% of Pakistani computer users use the hardware "to watch videos". This consumption of videos far outshone alternative uses of computers. "Using the Internet" and "Gathering Information" emerged as the second most oft-repeated activities by computer users in Pakistan.

61% of the computer owners in Sindh use their hardware to access and consume videos, while 53% use their computers to access the Internet. 55% of computers owners in Punjab used their computers to watch videos, while 33% accessed internet on their computers. In KPK, 48% of computer owners use the hardware to watch videos. A significant 35% of the computer owners in KPK do not use their devices. 59% of computer owners in Balochistan use the device to watch videos, while 38% use it to gather information.

Fig 1.10:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 662 (Computer Users) respondents from all four provinces, including urban and rural areas.

Increase in educational qualifications leads to more variance in computer usage.

Owners with low educational qualifications use their devices to watch videos (47%). Crucially, 44% of computer owners with low educational backgrounds do not use their devices, despite having access to it. Computer owners with higher educational backgrounds are equally likely to use their computers for entertainment i.e. showing videos (54%), or for informational uses i.e. accessing the internet (50%) or gathering information (49%).

54% Pakistanis own branded computers

HOUSEHOLDS

INDICATOR NUMBER 12: PERCENTAGE SHARE OF BRANDED AND UNBRANDED COMPUTERS

Computers in Pakistan can be bought through a variety of channels, and in a variety of formats – particularly as either branded or non-branded devices. The majority of Pakistani computer owners (54%) indicated that their devices at home were branded computers. A significant 37% reported that their computers were non-branded. Non-branded computers are put together by hardware suppliers and retailers throughout Pakistan. These figures indicate that both markets have a healthy consumer base.

Educated computers consumers are more likely to purchases branded hardware. While 64% of the consumers with high education levels are likely to buy branded computers, the proportion declines to 50% of medium education computer users, and 49% of low education computer users.

Regional analysis provides a clear indication of the market for branded and non-branded computers. Computer owners in Sindh, Balochistan and Punjab prefer buying and using branded computers. 86% of the users in Balochistan own branded computers, 60% of the computer owners in Sindh, and 56% of the computer owners in Punjab own branded computers. In contrast, KPK has a large market for non-branded computers. 60% of the computers in KPK households are non-branded, while only 27% of the computers in the province are branded.

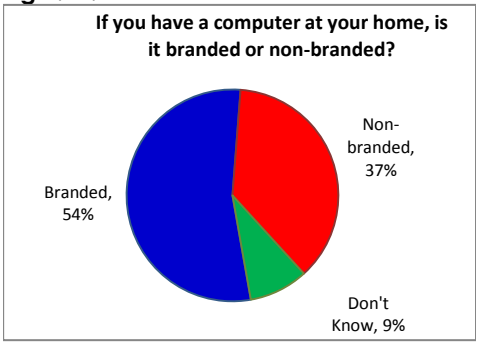
Table 1.11: **Percentage share of branded and unbranded computers**

(Row %)

Q10. If you have a computer at your home, is it branded or non-branded?		Branded	Non-branded	Don't Know
All Pakistan		54%	37%	9%
Gender	**Male**	52%	42%	6%
	Female	57%	29%	14%
Age of the Respondent	**Under 30**	58%	38%	4%
	30 – 50	49%	36%	15%
	51+	59%	28%	13%
Education	**Low**	49%	28%	23%
	Medium	50%	43%	7%
	High	64%	33%	3%
HH Income	**Low (Quintile #1)**	76%	14%	10%
	Medium (Quintile #2)	63%	24%	13%
	High (Quintile #3,4,5)	54%	40%	6%
Location	**Urban**	59%	31%	9%
	Rural	50%	41%	9%
Province	**Punjab**	56%	33%	11%
	Sindh	60%	33%	7%
	KPK	27%	60%	13%
	Balochistan	86%	12%	2%

Source: Pakistan ICT Indicators Survey, 2014.

Fig 1.11:



Source: Pakistan ICT Indicators Survey, 2014. Sample Size: 662 (Computer users) respondents from all four provinces, including urban and rural areas.

60% Pakistanis bought a computer more than a year ago

HOUSEHOLDS

INDICATOR NUMBER 13: Percentage share of new versus used computer

Table 1.10: **What is the percentage share of new versus used computers?**

(Row %)

Q11. If you have a computer then how long ago did you buy it?		1 month ago	1-3 months ago	3-6 months ago	6 months to 1 year ago	More than one year ago	Total
All Pakistan		3%	5%	13%	19%	60%	100%
Gender	**Male**	2%	5%	14%	19%	60%	100%
	Female	4%	4%	13%	18%	61%	100%
Age of the Respondent	**Under 30**	2%	4%	11%	19%	64%	100%
	30 – 50	4%	5%	17%	19%	55%	100%
	51+	0%	3%	17%	17%	62%	100%
Education	**Low**	5%	6%	20%	18%	51%	100%
	Medium	3%	4%	13%	19%	61%	100%
	High	1%	4%	11%	19%	65%	100%
HH Income	**Low** (Quintile #1)	0%	3%	0%	38%	59%	100%
	Medium (Quintile #2)	3%	5%	16%	22%	54%	100%
	High (Quintile #3,4,5)	2%	3%	13%	18%	64%	100%
Location	**Urban**	3%	3%	10%	20%	64%	100%
	Rural	3%	6%	16%	18%	57%	100%

Source: Pakistan ICT Indicators Survey, 2014.

The table above is a good measure of the extent of time elapsed during which a computer was bought by the household. These figures are therefore indicative of split between new and used computers. The vast majority of Pakistanis bought employ a computer purchased more than a year ago and hence use an older version of computer. Only a small minority of households in Pakistan purchased a computer within a time span of 1 month indicating that computing devices are generally viewed as fixed assets with very infrequent up-gradations.

Age wise segmentation of this indicator reveals that older members of the households are more likely to own an old computer. It is also the segment of the population which utilized computing facilities less frequently and hence feels less need for up-gradation to newer versions of computing hardware.

Analysing the indicator in terms of education level of the respondent reveals an interesting insight into the choices of households pertaining to purchasing a new computer. For instance, as the table above illustrates, as the respondent's educational attainment increases marginally, he/she is more likely to own a used computer. This may be counterintuitive at first glance however a closer examination of data clarifies the picture. Higher educated individuals can be considered as being early adopters of computers and thus are more likely to use an old computer while the less educated segments are just now resorting to purchasing computers and hence represent a higher share of new computer users.

Location segmentation reveals that urban households are less likely to use a new computer as compared to rural households. Again this is because urban households were early adopters of computing technology while rural households have recently adopted this technology and therefore depict a greater share among new computer users.

74% of computers owned are desktops

HOUSEHOLDS

INDICATOR NUMBER 14: Share of Laptops/notebooks versus desktops

Table 1.10a: **What is the share of laptops/notebooks versus desktops?**

(Multiple Response)

Q12. If you have a computer, then what kind of a computer is it?					
		Laptop/Notebook	Desktop	Both a laptop and a desktop	Total
All Pakistan		17%	74%	9%	100%
Gender	**Male**	17%	77%	6%	100%
	Female	18%	69%	13%	100%
Age of the Respondent	**Under 30**	16%	74%	10%	100%
	30 – 50	17%	75%	8%	100%
	51+	24%	62%	14%	100%
Education	**Low**	16%	78%	5%	100%
	Medium	12%	80%	8%	100%
	High	24%	64%	12%	100%
HH Income	**Low** (Quintile #1)	6%	86%	7%	100%
	Medium (Quintile #2)	8%	84%	8%	100%
	High(Quintile #3,4,5)	16%	74%	11%	100%
Location	**Urban**	15%	76%	8%	100%
	Rural	18%	72%	10%	100%
Province	**Punjab**	11%	73%	16%	100%
	Sindh	16%	75%	8%	100%
	KPK	28%	66%	5%	100%
	Balochistan	12%	88%	0%	100%

Study: Pakistan ICT Indicators Survey, 2014

The table above illustrates the type of computers owned by various household categories. The first trend is a relative preponderance of desktops as compared to notebooks and laptops. Among laptops and notebooks, the former is owned by a greater share of population. The ownership of notebooks is still very low across the country. Interestingly, females are more likely to own a notebook relative to males.

Additionally, the older population segment is more likely to own a laptop as compared to a desktop. This may be because of the easier handling and operations associated with a laptop and the greater need for mobility among the older population in the country.

There is also a sizeable increase in the proportion of laptops owned as the population becomes more educated. Indeed education itself may be a major reason for the high ownership of laptops as the immense advantages they provide to students especially at higher educational levels. Accordingly, the income segmentation is similar to educational segmentation but for different reasons. Laptops are generally more expensive items compared to desktops and as the income cohort of the population increases, laptops fall within the purchasing power of high income consumers.

19% Pakistanis used a computer in the last 12 months

HOUSEHOLDS

INDICATOR NUMBER 15: PROPORTION OF INDIVIDUALS WHO USED A COMPUTER IN THE LAST 12 MONTHS

Computer usage is an important feature of the communication landscape in developed countries. However, computer usage is restricted to a minority of Pakistan's population. 19% of Pakistanis used a computer in the last 12 months – even when all locations are considered. This implies that a substantial 81% of the country's population is disconnected from computers.

Provincial data reveals differential computer usage patterns in the four provinces. Residents from KPK have the highest proportion of computer users in the past 12 months i.e. 24%. This finding is consistent with the high computer presence in KPK's households. 19% of Sindh's population and 18% of Punjab's population used a computer in the last. Balochistan has the lowest proportion of computer users in the country, where only 15% of the population used a computer in the past 12 months.

The urban-rural landscape follows a predictable pattern in terms of computer usage trend. 30% of Pakistan's urban residents have used a computer in the past year, as compared to 14% in the rural areas.

The likelihood of computer usage increases with income and education. While only 9% of the population from low income background used computers in the past year, the proportion increases to 23% of high income individuals. Education is an even stronger predictor of computer usage in Pakistan. While only 6% of individuals with low incomes used a computer in the last year, 48% of those with higher educational background used computers in Pakistan.

Age has an inverse relationship with computer usage. While 26% of Pakistanis under the age of 30 used a computer in the last year, only 7% of those aged above 51 years used a computer in the same period.

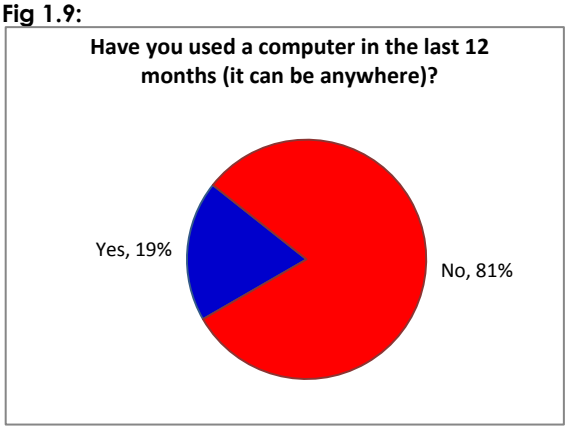
Table 1.9: **Proportion of individuals who used a computer in the last 12 months**

(Row %)

Q16. Have you ever used computer in last 12 months (it can be anywhere)?		Yes	No
All Pakistan		19%	81%
Gender	Male	23%	77%
	Female	14%	86%
Age of the Respondent	Under 30	26%	74%
	30 – 50	14%	86%
	51+	7%	93%
Education	Low	6%	94%
	Medium	22%	78%
	High	48%	53%
HH Income	Low (Quintile #1)	9%	91%
	Medium (Quintile #2)	12%	88%
	High (Quintile #3,4,5)	23%	77%
Location	Urban	30%	70%
	Rural	14%	86%
Province	Punjab	18%	82%
	Sindh	19%	81%
	KPK	24%	76%
	Balochistan	15%	85%

Source: Pakistan ICT Indicators Survey, 2014.

Fig 1.9:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 3000 respondents from all four provinces, including urban and rural areas.

8% Pakistanis have internet access at home

HOUSEHOLDS

INDICATOR NUMBER 16a: PROPORTION OF HOUSEHOLDS WITH INTERNET ACCESS

Internet penetration becomes fully embedded in a society when households access and use the web. However, the internet is still at its nascent stages of permeation in the Pakistani society. A tiny fraction of the country's population – 8% - has access to the internet at home.

Education and income are important drivers of internet access and penetration. Data compiled in this report indicates that only 1% of low education households have internet access at home. This proportion rises to 7% in medium education households, and crucially, to 31% in households with a higher educational background. Difference between internet access in low and high income households is also revealing. While only 1% of low income households have internet access at home, 12% of high income households enjoy internet connectivity.

The low national internet penetration is also reflected in the numbers from the provinces. Sindh emerged as the most connected province, where 14% of the respondents indicated that they had internet access at home – above the national penetration number. 8% of the residents from Punjab and 7% of the respondents from Balochistan indicated that they had internet access at home. KPK has the lowest internet penetration rate. Only 4% of the province's population has internet access at home.

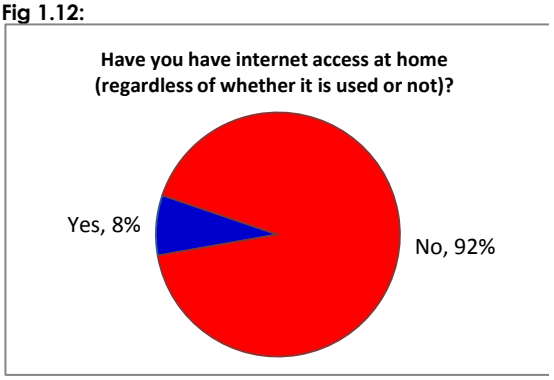
Table 1.12: **Proportion of households with internet access**

(Row %)

Q17. Do you have internet access at your home (regardless of whether it is used or not)?		Yes	No
All Pakistan		8%	92%
Gender	Male	9%	91%
	Female	7%	93%
Age of the Respondent	Under 30	12%	88%
	30 – 50	5%	95%
	51+	5%	95%
Education	Low	1%	99%
	Medium	7%	93%
	High	31%	69%
HH Income	Low (Quintile #1)	2%	98%
	Medium (Quintile #2)	1%	99%
	High (Quintile #3,4,5)	12%	88%
Location	Urban	17%	83%
	Rural	4%	96%
Province	Punjab	8%	92%
	Sindh	14%	86%
	KPK	4%	96%
	Balochistan	7%	93%

Source: Pakistan ICT Indicators Survey, 2014.

Fig 1.12:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 3000 respondents from all four provinces, including urban and rural areas.

8% of Pakistan's population is currently using the internet

HOUSEHOLDS

INDICATOR NUMBER 16b: PERCENTAGE OF THE POPULATION USING INTERNET

The data gleaned from this study also yields the number of Pakistanis currently using the internet. In percentage terms, this translates into 8% of the country's population.

Deconstructing internet users in Pakistan by age groups provides a vivid picture of the strongest proclivity to use internet in the country. The youth in Pakistan is more likely to access and use the internet. Internet usage is inversely related to age in Pakistan. 19% of those aged below 25 years access and use the internet. This percentage declines to 10% in those aged between 25 and 30 years. 6% of those aged 31-40 use the internet, while only 4% of those aged 41-50 and 51-60 use the internet in Pakistan. This percentage picks up slightly to 5% in senior citizens (aged 60+).

An important implication of this finding is that internet usage in Pakistan should increase significantly.

Demographically, a large proportion of the country's population is young. This burgeoning youth population is increasingly aware of the internet, and will most likely become active internet users – thereby pushing internet access and usage penetration to a higher percentage of the national population.

Table 1.14: **Percentage of the population using internet**

What percentage of the population is using internet?		
		Internet Usage
All Pakistan		8%
Age of the Respondent	Under 25	19%
	25 – 30	10%
	31– 40	6%
	41- 50	4%
	51- 60	4%
	60+	5%
Location	Urban	18%
	Rural	5%
Province	Punjab	9%
	Sindh	14%
	KPK	4%
	Balochistan	8%

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 3000 respondents from all four provinces, including urban and rural areas.

Provincially, Sindh has the highest percentage of the population using the internet at 14%. 9% of the population in Punjab uses the internet, with Balochistan trailing at 8%. KPK has the lowest number of internet users in the population at 4%.

9% Pakistanis used the internet over the last year

HOUSEHOLDS

INDICATOR NUMBER 17: PROPORTION OF INDIVIDUALS WHO USED INTERNET IN THE LAST 12 MONTHS

Low internet penetration in Pakistani households implies that a smaller proportion of the country's population uses internet. This reality is borne out in the data gathered and represented here. Only 9% of Pakistanis claimed to have used internet over the last 12 months. A substantial proportion of the country's population did not access or use the internet in the recent past.

Education and Income are strong predictors of the propensity to use internet. In particular, the level of education is directly proportional to internet usage. Only 1% of Pakistanis with low education levels used the internet in the last year. This proportion increases to 8% when individuals attain a medium level of education. Critically, 35% of those with higher educational background used the internet over the last year. Similarly rising income ushers in resources to access and use the internet. 3% of the Pakistanis using the internet come from low income backgrounds. However, when individual incomes rise to the higher quintiles, the proportion of Pakistanis using the internet increased to 12%.

Provincial data provides a consistent snapshot of internet penetration and usage in the country: a minority of the population in each province uses the internet. Sindh emerged as the most connected province, where 14% of the respondents indicated that they had used the internet over the last year – above the national penetration number. 9% of the residents from Punjab and 8% of the respondents from Balochistan indicated that they used the internet over the same period. KPK has the lowest internet penetration rate. Only 4% of the provincial population reported internet usage in the last 12 months.

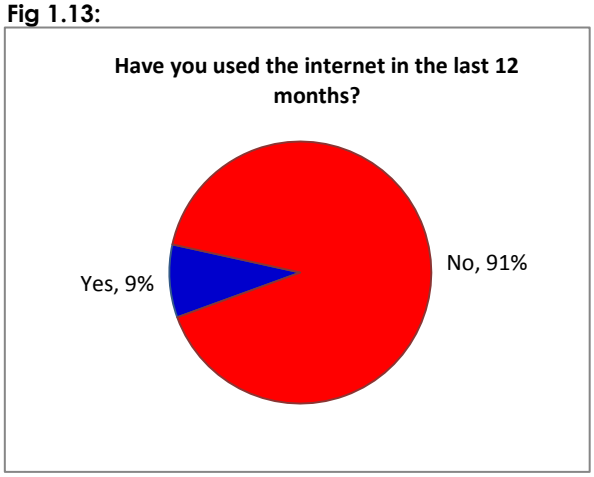
Table 1.13: **Proportion of individuals who used internet in the last 12 months**

(Row %)

Q21. Have you used the internet in the last 12 months?		Yes	No
All Pakistan		9%	91%
Gender	**Male**	12%	88%
	Female	6%	94%
Age of the Respondent	**Under 30**	14%	86%
	30 – 50	5%	95%
	51+	4%	96%
Education	**Low**	1%	99%
	Medium	8%	92%
	High	35%	65%
HH Income	**Low (Quintile #1)**	3%	97%
	Medium (Quintile #2)	2%	98%
	High (Quintile #3,4,5)	12%	88%
Location	**Urban**	18%	82%
	Rural	5%	95%
Province	**Punjab**	9%	91%
	Sindh	14%	86%
	KPK	4%	96%
	Balochistan	8%	92%

Source: Pakistan ICT Indicators Survey, 2014

Fig 1.13:



Source: Pakistan ICT Indicators Survey, 2014
Sample Size: 3000 respondents from all four provinces, including urban and rural areas.

BOX #3: ICT AND HEALTH

It has been seen that under the right circumstances health ICTs can reduce medical errors. A significant number of medical errors in hospital administration and consultations are related to medication. The three most common types of errors that occur are because of forgetfulness/inattention by the patient and the doctor, error from lack of knowledge and errors of planning or judgement. Errors of this kind can lead to adverse drug reactions and in the United States this is one of the leading causes of death. By allowing healthcare professionals to easily obtain and share information, ICT can prevent medication errors in the healthcare field. Additionally, with e-prescribing, it is now possible for physicians to check for adverse drug reactions, relating to a patients personal history, thereby reducing allergic and other drug reactions.

Physicians for a National Health Program
(http://www.pnhp.org/news/2007/january/on-the-front-lines-of-care-primary-care-doctors-office-systems-experiences-and-vie)

15,313,846 is the number of total internet users in Pakistan

HOUSEHOLDS

INDICATOR NUMBER 18a: NUMBER OF INTERNET USERS IN PAKISTAN

The data gleaned from this study also yields the total number of Pakistanis currently using the internet. In absolute numbers, the total population currently using the internet in Pakistan is 15,313,846.

Deconstructing internet users in Pakistan by age groups reveals that age plays a crucial role in driving the propensity to use internet. The youth in Pakistan is more likely to access and use the internet. The total number of internet users aged below 30 years is 10,188,395. These numbers decline significantly for higher age cohorts. The total number of internet users aged between 30-50 years is 4,562,901, while the total number of internet users aged above 51 years is 562,549.

Table 1.15: **Number of internet users in Pakistan**

All Pakistan		15,313,846
Gender	**Male**	9,313,319
	Female	6,000,527
Age of the Respondent	**Under 30**	10,188,395
	30 – 50	4,562,901
	51+	562,549
Education	**Low**	1,129,710
	Medium	4,832,648
	High	9,351,488
HH Income	**Low (Quintile #1)**	493,995
	Medium (Quintile #2)	493,995
	High (Quintile #3,4,5)	14,325,856
Location	**Urban**	10,063,384
	Rural	5,250,461
Province	**Punjab**	6,875,604
	Sindh	5,000,439
	KPK	1,125,099
	Balochistan	2,312,703

Source: Pakistan ICT Indicators Survey, 2014

There is a significant difference in the total number of internet users in urban and rural areas. In Pakistan's urban centers, the total number of internet users is 10,063,384. In absolute terms the total number of internet users in rural areas is 5,250,461.

Income levels provide an alternative snapshot of viewing the absolute numbers of internet users in Pakistan. The total number of low and middle income internet users in Pakistan is 493,995. However, this number increases to 14,325,856 when high income internet users are quantified.

BOX # 4: BIG DATA

The exponential growth in velocity, volume and variety of data has been popularly termed as big data. As the volume of data increases, organisations are finding it difficult to manage it with existing data management tools. In 2011 alone, 1.8 zettabytes (or 1.8 trillion gigabytes) of data were created. The term 'big data' is relative and according to the Gartner Group it is applied when extreme data processing and information management issues occur, that "exceed the capability of traditional information technology along one or multiple dimensions to support the use of the information assets". However, this problem also represents an enormous opportunity as big data is estimated to create 4.4 million global IT jobs that could change the nature of economic activity. The figure shows the number of health IT jobs created in the US alone between Jan '07 and Jan '12.

Gantz, J. and D. Reinsel. 2011. "Extracting Value from Chaos." IDC IVIEW

(http://www.emc.com/collateral/analyst reports/idc-extracting-value-from-chaos-ar.pdf)

78% of Pakistani internet users use the internet at home

HOUSEHOLDS

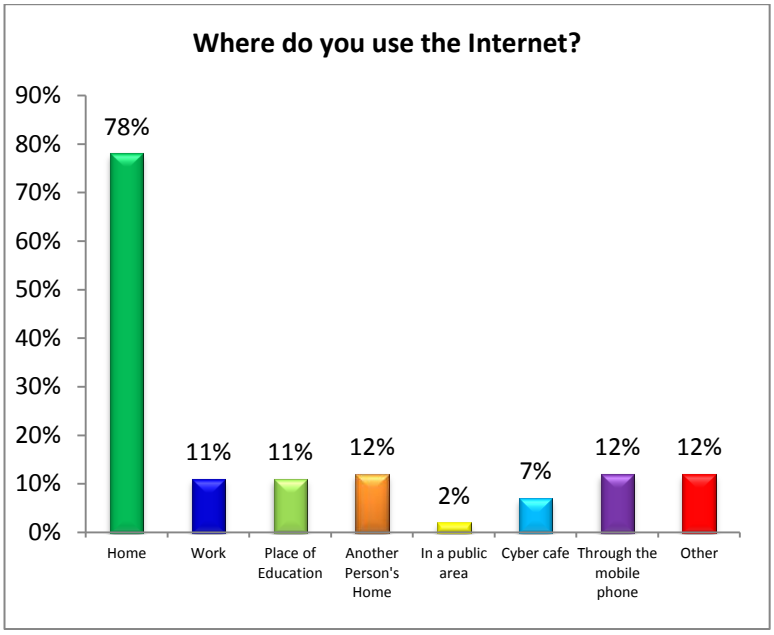
INDICATORS NUMBER 18b: LOCATION OF INDIVIDUAL USE OF THE INTERNET IN THE LAST 12 MONTHS

The location of internet access and usage is indicative of the preference for using the internet. 78% of Pakistan's internet users indicated that they access and use the internet at home. This implies that internet usage has become largely embedded in the current proportion of the country's population that uses the internet. Having access to the internet at home highlights the fact that the majority of Pakistan's internet users have integrated the technology in their domestic sphere. The remaining locations are accessed by a much smaller proportion of the country's internet users.

The highest proportion of home-based internet usage in Pakistan was recorded in KPK. 89% of the internet users in the province use it at their homes. 88% of the respondents from Sindh and 86% of the respondents from Balochistan revealed that they had used the internet at home. Surprisingly, Punjab trails the other provinces, where 66% of the population using the internet reports accessing the service at home.

When internet access and usage location is correlated with income quintiles, interesting insights emerge. 50% of the low income internet users use the internet at home. This proportion increases to 54% of medium income users. 84% of high income users reported using the internet at home.

Fig: 1.16



Source: Pakistan ICT Indicators Survey, 2014
Sample Size: 274 Internet Users respondents from all four provinces, including urban and rural areas

However, for low income users, mobile internet is an important route for using the internet. 36% of the low income users claim to access and use the internet over their mobile phones. In contrast, 31% of middle class internet users access and use the internet at "another person's home", which highlights internet usage behaviours in middle income individuals and households in Pakistan.

KARACHI has the highest proportion of internet users in Pakistan

HOUSEHOLDS

INDICATORS NUMBER 18c: CITY-WISE AND URBAN-RURAL DISTRIBUTION OF INTERNET USERS

Internet usage in Pakistan can be broken down by urban locations. This distribution of data provides insights into the proportion of population using internet in particular locations.

As the table below indicates, Karachi has the highest number of internet users of any city in the country. 35% of the city's population uses internet, which is significantly above the national average. Gujrat, Jacobabad, and Nasirabad were second on the national list: 20% of the residents in these cities reported accessing and using the internet.

Of the other major cities in the country, 14% of Lahore's residents use the internet. 16% of Rawalpindi's population uses the internet. 15% of Quetta's residents indicated that they use the internet.

The urban-rural distribution of internet usage follows a predictable pattern: residents in Pakistan's cities are more likely to be internet users. 18% of the urban population in the country accesses and uses the internet. In contrast, only 5% of the rural population in the country is connected to the internet.

Table: 1.17: **City-wise and urban-rural distribution of internet users**

What is the city-wise (major 10 cities at least) and rural distribution of Internet users in Pakistan?

		Internet Users			Internet Users
All Pakistan			**All Pakistan**		8%
High to Low: Top Cities	**Karachi**	35%	**Location Wise**	**Urban**	18%
	Gujrat	20%		**Rural**	5%
	Jacobabad	20%			
	Nasirabad	20%			
	Sahiwal	18%			
	Haripur	17%			
	Rahim Yar Khan	17%			
	Toba Tek Singh	17%			
	Sheikhupura	16%			
	Rawalpindi	16%			
	Kasur	15%			
	Quetta	15%			
	Lahore	14%			
	Dadu	13%			
	Gujranwala	12%			
	Sargodha	12%			
	Chagai	10%			
	Chakwal	10%			
	Killa Saifullah	10%			

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

DOWNLOADING is the most popular internet activity undertaken by Pakistanis

HOUSEHOLDS

INDICATOR NUMBER 19: Internet activities undertaken by individuals in last 12 months

When asked about the major internet activities undertaken in the past twelve months, majority of internet using respondents pointed to 'downloading' (72%) as the predominant function performed online. There has been an upsurge in the quality and quantity of online content and this may explain why people prefer the online medium to access content which is also relevant. The spread of broadband network across the country has meant higher access speeds for citizens of Pakistan, making downloading easier and less time consuming.

The second most frequent online activity undertaken by internet using Pakistanis is seeking information and education (67%). Internet has emerged as a cohesive alternate to the formal education system and the accompanying inadequacies of that system in the country provides an upward thrust to the internet in terms of providing citizens a viable alternative to seeking education be it informal in nature. Expectedly, younger segments of population avail this activity the most.

Sending and receiving emails (60%), seeking information on health issues (40%) and seeking information on government departments (35%) also figure prominently as frequent internet activities undertaken by Pakistanis. Recent initiatives by central government to digitize much of the information of government functionaries has also attracted attention of citizens who predominantly employ the internet to access this information on government departments.

DOWNLOADING is the most popular internet activity undertaken by Pakistanis

HOUSEHOLDS

INDICATOR NUMEBER 20: MAJOR PURPOSES (AT LEAST FOUR MAIN PURPOSES) OF USING THE INTERNET

We asked internet users in Pakistan to outline the major activities they undertake when online. Of the multiple purposes that were put to users, the top four were singled out for analysis. The most popular activity undertaken by Pakistani users online is downloading. 72% of the internet users in Pakistan use the internet for downloading.

Educational purposes emerged as the second major activities for Pakistani internet users. 67% of the internet users indicated that they used internet for educational purposes. Email communications is a major objective of 60% of the country's internet population, while 53% of the internet users around the country go online to gain information about goods and services.

Educational background plays a crucial role in determining the type of activity undertaken by users on the internet. 87% Pakistani internet users with low educational backgrounds are overwhelmingly using the internet for downloading. Contrarily, those with higher educational backgrounds use the internet for educational purposes (78%), or alternatively divide their online time between downloading (67%) and email communications (67%).

Internet users differ in their online objectives in each of the country's provinces. In Punjab, most of the internet users are accessing the web for downloading purposes (70%). In contrast, 80% of the users from Sindh, and 86% of the users in Balochistan use the internet for educational purposes. In KPK, 89% of the internet users access the web for sending and receiving emails.

Table 1.18: **Major purposes (at least four main purposes) of using the internet**

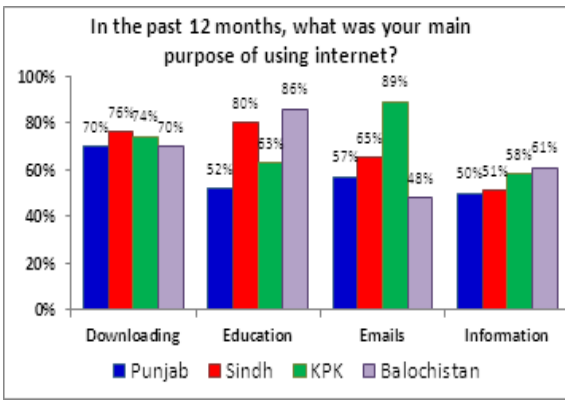
(Multiple Response)

Q25. In the past 12 months, what was the main purpose of using internet?

		For downloading	For education purposes	For sending and receiving email	To gain information about goods and services
All Pakistan		72%	67%	60%	53%
Gender	**Male**	77%	64%	63%	46%
	Female	60%	73%	54%	69%
Age of the Respondent	**Under 30**	74%	74%	58%	53%
	30 – 50	72%	49%	66%	52%
	51+	50%	63%	50%	50%
Education	**Low**	87%	40%	40%	53%
	Medium	79%	51%	50%	40%
	High	67%	78%	67%	60%
HH Income	**Low (Quintile #1)**	86%	57%	43%	29%
	Medium (Quintile #2)	62%	46%	77%	31%
	High (Quintile #3,4,5)	71%	69%	58%	54%
Location	**Urban**	70%	72%	62%	58%
	Rural	75%	58%	57%	44%
Province	**Punjab**	70%	52%	57%	50%
	Sindh	76%	80%	65%	51%
	KPK	74%	63%	89%	58%
	Balochistan	70%	86%	48%	61%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.18:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas

DSL is the most widely used source for accessing internet in Pakistan

HOUSEHOLDS

INDICATOR NUMBER 21: PROPORTION OF HOUSEHOLDS WITH ACCESS TO THE INTERNET BY TYPE OF ACCESS

As internet penetration grows in Pakistan, the type of access to the web is also undergoing gradual shifts. Data compiled and aggregated from internet users across the country indicates that the most common type of connection used in Pakistan is DSL. DSL internet connections are the most prevalent internet connectivity formats around the world. Notwithstanding their small size, internet users have increasingly shifted to this technology. However, cable net remains another popular internet access technology. 31% of internet users nation-wide used cable internet connections to connect to the internet.

Income levels are an important variable in determining the type of access available to an individual/household. Low income internet users in Pakistan access and use the web primarily through GPRS on cellular phones (43%). For middle income internet users (54%) use DSL and (38%) use cable net. High income internet users in Pakistan prefer accessing the internet through DSL (41%).

In urban centres, DSL (40%) and cable net (40%) are equally prevalent as preferred types of internet connections. In rural areas across the country, DSL is used by a slight majority of the internet users (35%); trailed closely by internet connections offered via EVDO (32%).

The majority of the internet users in Punjab (44%) and Balochistan (73%) access the internet via DSL connections. In contrast, the majority of internet users in Sindh – 58% - use cable internet connections. Internet users in KPK prefer using EVDO (47%), and cellular GPRS (37%) as cellular connections.

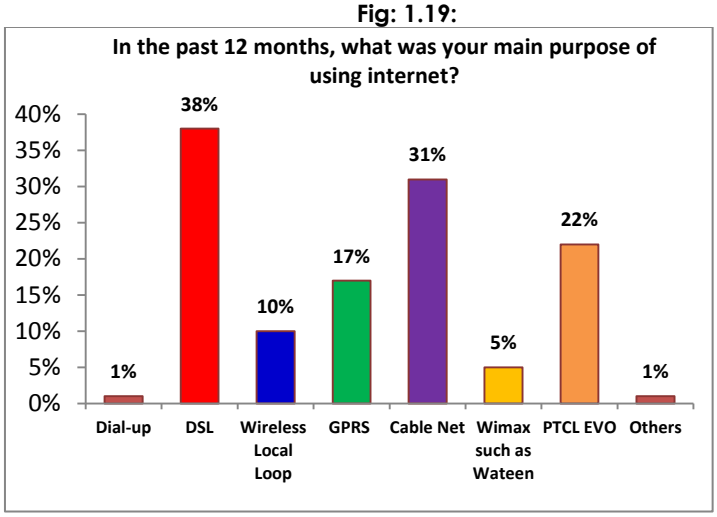
Table 1.19: **Proportion of households with access to the internet by type of access**

(Multiple Response se)

		Q27. If you used the internet what is the source of your internet connection?							
		Dial up	DSL	Wireless local loop	GPRS such as using internet on your mobile phone	Cable net	Wimax	EVDO	Others
All Pakistan		1%	38%	10%	17%	31%	5%	22%	1%
Gender	Male	2%	33%	9%	18%	30%	2%	26%	1%
	Female	0%	49%	12%	16%	33%	12%	11%	1%
Age of the Respondent	Under 30	2%	38%	11%	20%	30%	6%	18%	1%
	30 – 50	0%	36%	5%	11%	32%	4%	30%	3%
	51+	0%	50%	13%	0%	25%	0%	38%	0%
Education	Low	0%	25%	19%	31%	13%	0%	31%	0%
	Medium	1%	30%	6%	21%	30%	4%	23%	0%
	High	2%	44%	11%	14%	33%	6%	20%	2%
HH Income	Low (Quintile #1)	7%	36%	0%	43%	29%	0%	29%	0%
	Medium (Quintile #2)	0%	54%	0%	8%	38%	8%	8%	0%
	High (Quintile #3,4,5)	1%	41%	10%	15%	29%	6%	24%	1%
Location	Urban	1%	40%	13%	11%	40%	8%	15%	2%
	Rural	2%	35%	5%	27%	15%	1%	32%	0%
Province	Punjab	2%	44%	5%	15%	21%	2%	30%	0%
	Sindh	2%	18%	23%	17%	58%	12%	13%	4%
	KPK	0%	5%	0%	37%	26%	0%	47%	0%
	Balochistan	0%	73%	2%	16%	9%	2%	5%	0%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.19:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

43% Pakistani internet users access the internet users at least once a day

HOUSEHOLDS

INDICATOR NUMBER 22: FREQUENCY OF INDIVIDUAL USE OF THE INTERNET IN THE LAST 12 MONTHS

Even though access to internet remains very limited in Pakistan, the frequency of internet usage is relatively higher. Results show that 43% Pakistani internet users use internet at least every day followed by 36% individuals who use it at least once a week. 21% respondents claimed to use the internet for less than once a week.

Provincial data portrays a similar picture. Punjab and Sindh have a higher percentage of daily internet users at 45% and 52% respectively. A very small proportion of Pakistanis in KPK (5%) and Balochistan (7%) use internet less than once a week.

Internet users with higher educational backgrounds access and use the internet more frequently (48%). The frequency declines as educational backgrounds decline. Internet users with low education levels use internet most frequently at least once a week (44%). Internet users with medium educational levels also use the internet most frequently at least once a week (42%).

Internet usage is more frequent in Sindh and Punjab as compared to KPK and Balochistan. 52% of the internet users in Sindh access internet at least once a day, while 45% of all internet users in Punjab use the internet with the same frequency. In contrast, the most frequent usage of internet in Balochistan occurs at least once a week (66%), while 63% of all internet users in KPK access the web at least once a week.

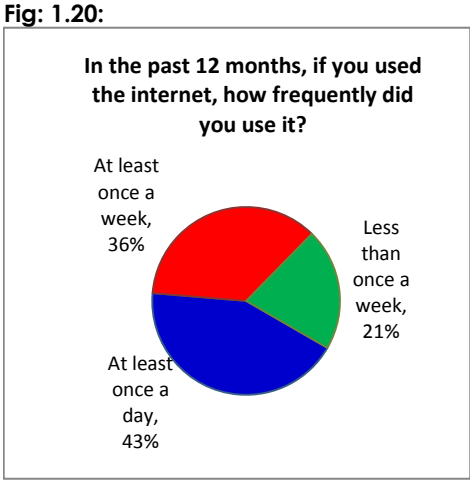
Table 1.20: **Frequency of individual use of the internet in the last 12 months**

(Row %)

Q26. In the past 12 months, if you used the internet, how frequently did you use it?		At least once a day	At least once a week	Less than once a week
All Pakistan		43%	36%	21%
Gender	Male	45%	35%	20%
	Female	38%	37%	25%
Age of the Respondent	Under 30	52%	33%	16%
	30 – 50	22%	43%	35%
	51+	38%	38%	25%
Education	Low	31%	44%	25%
	Medium	37%	42%	21%
	High	48%	31%	21%
HH Income	Low (Quintile #1)	36%	36%	29%
	Medium (Quintile #2)	31%	31%	38%
	High (Quintile #3,4,5)	44%	36%	20%
Location	Urban	44%	34%	21%
	Rural	41%	38%	21%
Province	Punjab	45%	28%	27%
	Sindh	52%	25%	23%
	KPK	32%	63%	5%
	Balochistan	27%	66%	7%

Source: Pakistan ICT Indicators Survey, 2014

Fig: 1.20:



Source: Pakistan ICT Indicators Survey, 2014. Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

88% Pakistani internet users access the internet via Broadband connections

HOUSEHOLDS

INDICATOR NUMBER 23: PERCENTAGE OF NARROWBAND/DIALUP INTERNET USERS VERSUS BROADBAND

While internet penetration is low in Pakistan, the quality, technology, frequency of use, and internet usage objectives are experiencing consolidation towards international standards. This transformation is evident in the narrowband vs. broadband analysis of internet connections in Pakistan. Results show that the overwhelming majority of Pakistani internet users – 88% - are accessing the internet through broadband connections. This signifies a constant improvement in internet technology, as well as connectivity preferences.

Narrowband or dialup connections are related to income levels – higher income ensures access via broadband technologies. This factor is borne out in the data compiled from Pakistani internet users. Nationwide, 42% internet users with low incomes access the internet via narrowband connections. In contrast, 92% of medium income and 91% of high income internet users access the internet via broadband connections. Not with standing this correlation, broadband internet connections are still the majority type of connections for low income internet users: 58%.

Predictably, broadband connections are more prevalent in urban centers, while narrowband connections are still used more widely in rural areas. 95% of all internet connections in Pakistan's urban centers are broadband, while 77% of all rural connections use the same technology. However, 23% internet users in rural Pakistan still use narrowband connections.

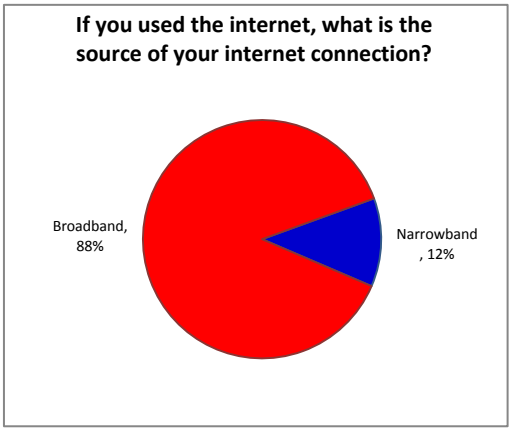
Table 1.21: **Percentage of narrowband/dialup internet users versus broadband**

(Row %)

Q27. If you used the internet what is the source of your internet connection?			
		Narrow Band	Broad Band
All Pakistan		12%	88%
Gender	Male	14%	86%
	Female	6%	94%
Age of the Respondent	Under 30	15%	85%
	30 – 50	6%	94%
	51+	0%	100%
Education	Low	21%	79%
	Medium	18%	82%
	High	8%	92%
HH Income	Low (Quintile #1)	42%	58%
	Medium (Quintile #2)	8%	92%
	High (Quintile #3,4,5)	9%	91%
Location	Urban	5%	95%
	Rural	23%	77%
Province	Punjab	11%	89%
	Sindh	7%	93%
	KPK	33%	67%
	Balochistan	14%	86%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.21:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

69% Pakistani internet users have fixed line internet connections

HOUSEHOLDS

INDICATOR NUMBER 24: FIXED LINE INTERNET USAGE VERSUS WIRELESS INTERNET USE

The split between fixed line and wireless internet use indicates the level of technological integration in the internet infrastructure. Wireless internet use is indicative of the modern standards in internet connections. In Pakistan, internet connections are still largely based on the fixed line model. 69% Pakistani internet users indicate that they use internet via fixed line connections. 31% of all internet users across the country use internet via wireless connections.

The split between fixed line and wireless internet usage is pronounced along the urban-rural divide. 83% of all internet users in urban centers report that they use fixed line internet. In contrast, 51% of all rural internet users access the internet via wireless technologies.

The split of fixed line versus wireless internet users across the four provinces reveals that internet users in KPK have different internet usage preferences. 76% of all internet users in KPK reported having used wireless internet connections. In contrast, internet users in the other three provinces preferred fixed line internet usage. 81% of internet users from Balochistan, 80% internet users from Sindh, and 65% internet users from Punjab use fixed line internet connections.

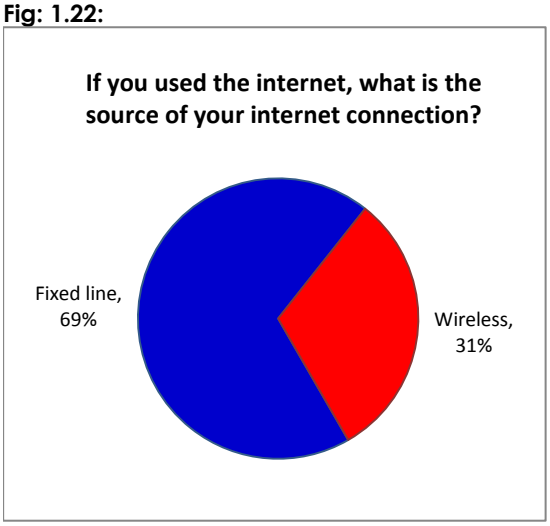
Table 1.22: **Split of fixed line internet usage versus wireless internet use**

(Row %)

Split of fixed line VS. Wireless			
		Fixed Line	Wireless
All Pakistan		69%	31%
Gender	Male	64%	36%
	Female	81%	19%
Age of the Respondent	Under 30	70%	30%
	30 – 50	67%	33%
	51+	71%	29%
Education	Low	43%	57%
	Medium	62%	38%
	High	77%	23%
HH Income	Low (Quintile #1)	45%	55%
	Medium (Quintile #2)	91%	9%
	High (Quintile #3,4,5)	70%	30%
Location	Urban	83%	17%
	Rural	49%	51%
Province	Punjab	65%	35%
	Sindh	80%	20%
	KPK	24%	76%
	Balochistan	81%	19%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.22:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

69% Pakistani internet users are fixed/static users

HOUSEHOLDS

INDICATOR NUMBER 25: SPLIT OF FIXED/STATIC INTERNET USERS VERSUS MOBILE USERS

The split between static and mobile internet use reveals if internet users in a country have adopted cutting-edge technologies to access the internet. Most Pakistani internet users are fixed/static users; which implies that they are tethered to confined hardware and spaces. 69% of all internet users in Pakistan are fixed/static users. 31% of the internet users in the country use mobile internet services and technologies.

The split between static and mobile internet usage is pronounced along the urban-rural divide. 83% of all internet users in urban centers report that they use static internet. In contrast, 51% of all rural internet users access the internet via mobile technologies.

The split of static versus mobile internet users across the four provinces reveals that internet users in KPK have different internet usage preferences. 76% of all internet users in KPK reported having used Mobile internet connections. In contrast, internet users in the other three provinces preferred static internet usage. 81% of internet users from Balochistan, 80% internet users from Sindh, and 65% internet users from Punjab use static internet connections.

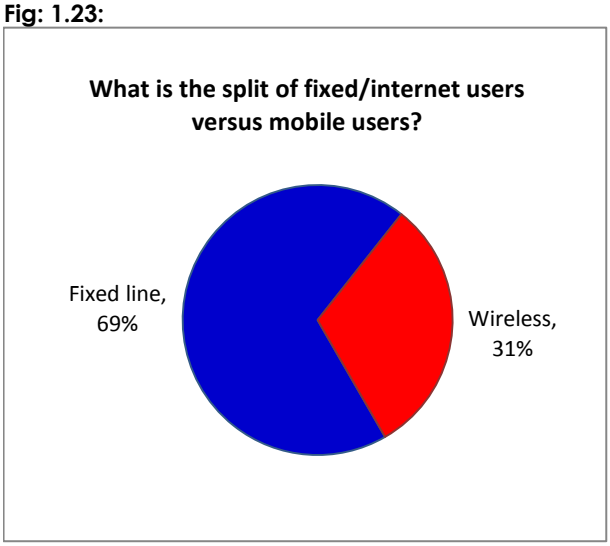
Table 1.23: **Split of fixed/static internet users versus mobile users**

(Row %)

Split of Fixed/Static Internet users VS. Mobile users			
		Fixed/Static Users	Mobile users
All Pakistan		69%	31%
Gender	Male	64%	36%
	Female	81%	19%
Age of the Respondent	Under 30	70%	30%
	30 – 50	67%	33%
	51+	71%	29%
Education	Low	43%	57%
	Medium	62%	38%
	High	77%	23%
HH Income	Low (Quintile #1)	45%	55%
	Medium (Quintile #2)	91%	9%
	High (Quintile #3,4,5)	70%	30%
Location	Urban	83%	17%
	Rural	49%	51%
Province	Punjab	65%	35%
	Sindh	80%	20%
	KPK	24%	76%
	Balochistan	81%	19%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.23:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

11% Pakistani internet users access the internet via cellular phones

HOUSEHOLDS

INDICATOR NUMBER 26: SPLIT OF INTERNET USERS FROM MOBILE/CELLULAR PHONES VERSUS OTHERS

While cellular phones and services have become a constant feature of Pakistani society, their ubiquitous presence has not translated into universal internet usage through this platform. Nationally, only 11% of all internet users in the country reported accessing the web through their mobile phones. The majority of the country's internet users rely on alternative routes to access the internet.

Younger internet users are more likely to use their cellular phones for connecting to the internet. 14% of those aged below 30 years report using their cell phones to access the internet. This proportion declines sharply to 6% of those aged 30-50 years, while none of the internet users aged above 51 years reported using their cell phones to access the internet.

Education and income are inversely proportional to internet use through cell phones in Pakistan. While 21% of the internet users with low education levels use their cell phones to go online, 17% of medium-education users, and only 7% of internet users with higher education level use their cell phones to access the internet. Similarly, while 38% of low income internet users use their cell phones to access the internet, only 8% of medium and high income internet users use their cell phones to access the web.

KPK has the highest number of cellular phone internet users at 33% of all internet users. 14% of the internet users from Balochistan access the web through their cell phones. Only 10% of all internet users in Punjab and 7% of the internet users in Sindh go online through their cell phones.

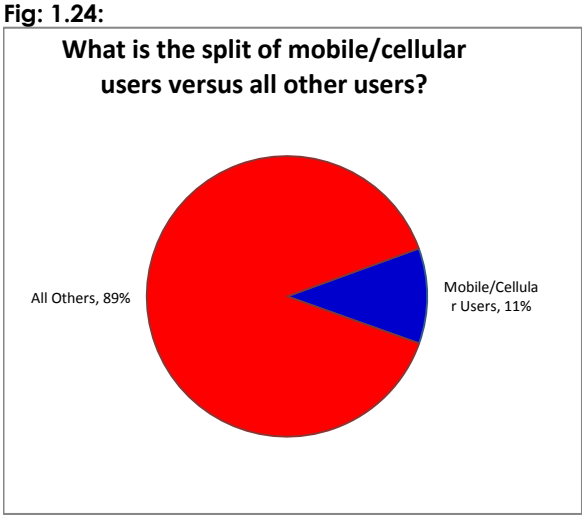
Table 1.24: **Split of internet users from mobile/cellular phones versus others**

(Row %)

Split of Mobile/Cellular users VS. all others users			
		Mobile/ Cellular users	All others
All Pakistan		11%	89%
Gender	Male	14%	86%
	Female	6%	94%
Age of the Respondent	Under 30	14%	86%
	30 – 50	6%	94%
	51+	0%	100%
Education	Low	21%	79%
	Medium	17%	83%
	High	7%	93%
HH Income	Low (Quintile #1)	38%	62%
	Medium (Quintile #2)	8%	92%
	High (Quintile #3,4,5)	8%	92%
Location	Urban	4%	96%
	Rural	23%	77%
Province	Punjab	10%	90%
	Sindh	7%	93%
	KPK	33%	67%
	Balochistan	14%	86%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.24:



Source: Pakistan ICT Indicators Survey, 2014.

Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

79% Pakistani internet users have both, mobile and fixed line connections

HOUSEHOLDS

INDICATOR NUMBER 27: PROPORTION OF INTERNET USERS WITH BOTH, MOBILE AND FIXED LINE INTERNET CONNECTIONS

The prevalence and diversity of internet connections facilitates internet usage. A majority of Pakistani internet users have both, mobile as well as fixed line internet connections. 79% of all internet users reported having access to both types of connections. This finding is consistent with the ubiquitous presence and prevalence of cellular phones and services, which offer internet connectivity to most users in Pakistan.

Given that the propensity to use internet is higher in the Pakistani youth, most of the internet users aged below 30 years reported having access to both types of internet connections. This access to both types of internet connections declines to 72% of those aged 30-50, and a further 63% in those aged above 51 years.

Provincial data on accessibility of both types of internet connections, shows that 95% of all internet users in Balochistan have access to both types of internet connections. 78% of all internet users in Punjab, and 75% of all internet users in Sindh reported having access to both types of internet connections. KPK has the lowest proportion of internet users with access to both types of internet connections. 68% of the internet users in the province reported having access to both types of connections.

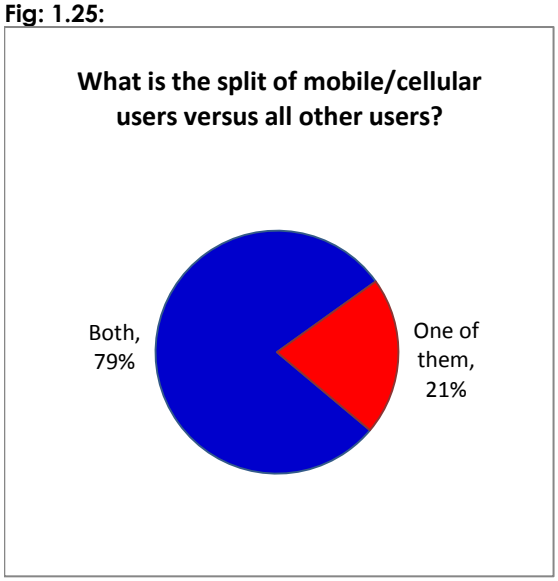
Table 1.25: **Proportion of internet users with both, mobile and fixed line internet connections**

(Row %)

How many users have both, mobile as well as fixed line Internet connections?			
		Both	One of them
All Pakistan		79%	21%
Gender	Male	78%	22%
	Female	81%	19%
Age of the Respondent	Under 30	83%	17%
	30 – 50	72%	28%
	51+	63%	37%
Education	Low	56%	44%
	Medium	78%	22%
	High	83%	17%
HH Income	Low (Quintile #1)	100%	0%
	Medium (Quintile #2)	100%	0%
	High (Quintile #3,4,5)	78%	22%
Location	Urban	81%	19%
	Rural	76%	24%
Province	Punjab	78%	22%
	Sindh	75%	25%
	KPK	68%	32%
	Balochistan	95%	5%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.25:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

5 fixed internet subscribers per 100 inhabitants

HOUSEHOLDS

INDICATOR NUMBER 28: **Fixed Internet Subscribers per 100 inhabitants**

Internet subscriptions per 100 inhabitants reveal the internet penetration level at a micro level. When the internet user data in Pakistan is analyzed, it emerges that the number of fixed internet subscribers per 100 inhabitants is 5 in Pakistan (5.47 precisely). This implies that the total fixed internet subscription in the country is low i.e. internet has not fully penetrated the Pakistani society.

Predictably, fixed internet subscription density is higher in urban centers. There are 12 (12.42 precisely) fixed internet subscriber per 100 inhabitants in urban centers. In contrast, there are only 2 (2.24 precisely) internet subscribers per 100 inhabitants in rural areas of the country.

Table 1.26: **Fixed Internet Subscribers per 100 inhabitants**

		Fixed Internet Subscribers per 100 inhabitants
All Pakistan		5.47
Location	**Urban**	12.42
	Rural	2.24
Province	**Punjab**	5.07
	Sindh	8.81
	KPK	0.91
	Balochistan	6.6

Source: Pakistan ICT Indicators Survey, 2014.

Sample Size: 3000 respondents from all four provinces, including urban and rural areas.

Fixed internet subscribers per 100 inhabitants by provinces: Balochistan has 6.6 fixed internet subscribers per 100 inhabitants, Punjab ranks third in fixed internet subscription, with 5.07 subscriptions per 100 inhabitants, and KPK has the lowest fixed internet density – there are 0.91 fixed internet subscriptions per 100 inhabitants in the province.

HOUSEHOLDS

5.26 fixed broadband internet subscribers per 100 inhabitants.

INDICATOR NUMBER 29: FIXED BROADBAND INTERNET SUBSCRIBERS PER 100 INHABITANTS

Classifying broadband internet into various access types sheds light on patterns of internet usage in the country. This indicator reveals that although the share of fixed broadband internet is quite low in Pakistan (5.26 per 100 inhabitants), broadband internet is still the predominant access type among fixed internet users.

The primary explanatory variable for the predominance of broadband internet among fixed line internet users are the attrition in users of dialup internet in the country, expansion of broadband infrastructure across a greater area and increased adoption rate of fixed broadband internet by institutions.

Table 1.27: **Fixed Broadband Internet Subscribers per 100 Inhabitants**

Q27. If you used the internet what is the source of your internet connection?	
	Fixed Broadband Internet Subscribers per 100 inhabitants
All Pakistan	5.26

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

0.3 mobile broadband subscriptions per 100 inhabitants in Pakistan

HOUSEHOLDS

INDICATOR NUMBER 30: MOBILE BROADBAND SUBSCRIPTIONS PER 100 INHABITANTS

Pakistani internet users are primarily accessing the web through fixed broadband services. Despite the increasing worldwide technological permeation of mobile and wireless internet connectivity, Pakistani internet users have been unable to adopt and integrate mobile broadband internet connectivity. This feature of internet usage in the country is reflected in the low mobile broadband density in the country. At present, there are 0.3 subscribers per 100 inhabitants with mobile broadband subscriptions. This is considerably lower than fixed broadband density in the country.

Mobile broadband subscriptions per 100 inhabitants	
	2014
All Pakistan	**0.3**

Source: Active mobile-broadband subscriptions per 100 inhabitants 2012, Dynamic Report, ITU ITC EYE, International Telecommunication Union. Retrieved on 29 June 2014.

INDICATOR NUMBER 31: FIXED BROADBAND INTERNET ACCESS TARIFFS PER MONTH IN US $, AND AS A PERCENTAGE OF MONTHLY PER CAPITA INCOME

Pakistani internet users spend an important portion of their monthly per capita income on fixed internet broadband access. At present, this amounts to 10.69% of monthly per capita income, which illustrates the relatively high cost of accessing fixed broadband internet services in the country.

In absolute $ terms, the amount spent by Pakistani internet users to access fixed broadband internet services amounts to US$ 11.23 per month. This figure further accentuates the relatively lower cost of accessing fixed broadband internet services in Pakistan as compared to the South Asian average.

Table IH31 Fixed broadband Internet access tariffs per month in US$, and as a percentage of monthly per capita income

$11.23 is paid by Pakistani internet users for fixed broadband internet access every month.

10.69% of the monthly per capita income is spent by Pakistani internet users to access fixed broadband internet.

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 202 (Broad Band Internet Users) respondents from all four provinces, including urban and rural areas.

43.48 bits Internet bandwidth per inhabitant

HOUSEHOLDS

INDICATOR NUMBER 32: International Internet bandwidth per inhabitant (bits/second/inhabitant)

Table 1.29: **International internet bandwidth per inhabitant**

	2004	2006	2007*
International Internet Bandwidth per inhabitant	2.71	16.05	43.48
Source: Trading Economics, 2014 (World Bank Data)			

*This is the most recent figure available

The uptrend in international internet bandwidth per capita is clearly visible during the years 2004 to 2007. Internet bandwidth which was 2.71 bits/inhabitant in 2004, took off to 43.8 bits/second in 2007. The larger internet penetration in country and adoption of broadband internet, both have contributed to sustain this uptrend.

Although global comparisons reveal that Pakistan is lagging behind in providing its citizens access to high speed internet, this statistic has depicted significant growth over the past 8 years. This means internet users in the country can now access a wider range of content online while for the commercial sector it implies inducing greater efficiency and productivity.

Trading Economics: International Internet bandwidth (bits per person) in Pakistan

99% of all Pakistanis used a mobile phone in the last 12 months

HOUSEHOLDS

INDICATOR NUMBER 33: PROPORTION OF INDIVIDUALS WHO USED A MOBILE CELLULAR TELEPHONE IN THE LAST 12 MONTHS

The mobile cellular technology has become a ubiquitous source of telephonic communication in Pakistan – largely displacing fixed landline telephone connections. The dramatic increase in the use of mobile cellular phones in Pakistan is attested by the fact that 99% of Pakistanis indicated using a mobile phone in the last 12 months. This percentage reveals that mobile phones have complete penetrated Pakistan's telecommunication landscape.

Mobile phone communication and usage is nearly universal in all four provinces of the country. As the data below shows, 100% of all respondents from Punjab, Sindh, and Balochistan indicated that they had used a mobile phone over the last year. Sindh trailed the other three provinces – 97% of all respondents from the province indicated using a mobile phone over the last year.

Mobile phone usage is nearly universal across all income, age, and educational categories. This implies that mobile phones are universally used across Pakistan for instant telephonic communication.

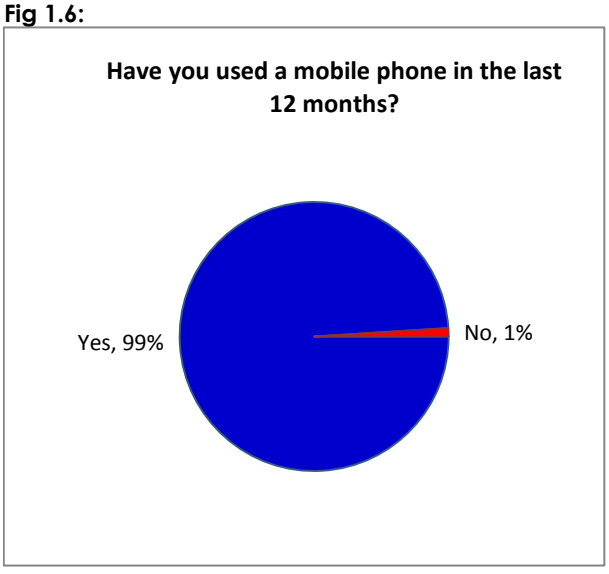
Table 1.6: **Proportion of individuals who used a mobile cellular telephone in the last 12 months**

(Row %)

Q40. Have you used a mobile phone in the last 12 months?		Yes	No
All Pakistan		99%	1%
Gender	Male	99%	1%
	Female	100%	0%
Age of the Respondent	Under 30	99%	1%
	30 – 50	100%	0%
	51+	100%	0%
Education	Low	99%	1%
	Medium	100%	0%
	High	99%	1%
HH Income	Low (Quintile #1)	100%	0%
	Medium (Quintile #2)	100%	0%
	High (Quintile #3,4,5)	99%	1%
Location	Urban	99%	1%
	Rural	100%	0%
Province	Punjab	100%	0%
	Sindh	97%	3%
	KPK	100%	0%
	Balochistan	100%	0%

Source: Pakistan ICT Indicators Survey, 2014.

Fig 1.6:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 2032 (Personal Mobile Users) respondents from all four provinces, including urban and rural areas.

HOUSEHOLDS

INDICATOR NUMBER 34: PERCENTAGE OF POPULATION COVERED BY A MOBILE CELLULAR TELEPHONE NETWORK

Cellular telephone network coverage has increased across Pakistan; in conjunction with the rise in the use of mobile telephone communications across the country. 92% of Pakistan's population is currently serviced by a mobile cellular telephone network.

This finding becomes illustrative when juxtaposed with the decline in the proportion and penetration of fixed landline telephone connections in Pakistan. The cellular telephone communication landscape is undergoing expansion, and is set to become the prevailing and preferred mode for telephonic communication, as the cellular telephone network continues expanding.

Percentage of population covered by a mobile cellular telephone network	**92%***	Mobile cellular telephone subscriptions per 100 inhabitants	**66.77**

Source: PTA Annual Report 2011.
*This is the most recent figure available

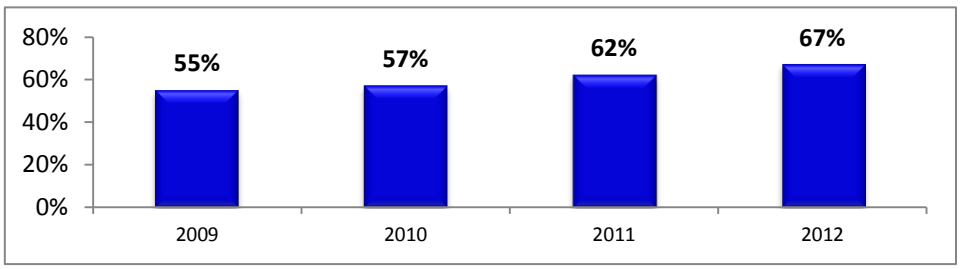
INDICATOR NUMBER 35: MOBILE CELLULAR TELEPHONE SUBSCRIPTIONS PER 100 INHABITANTS

Cellular phones are becoming increasingly prevalent in Pakistan. This is reflected in the penetration of mobile cellular telephone subscriptions per 100 inhabitants in Pakistan. In 2012, the figure stood at 67, which reflected a consistent increase in subscriptions every year between 2009 and 2012.

Table 1.7: **Mobile cellular telephone subscriptions per 100 inhabitants**

	2009	2010	2011	2012*
Mobile cellular telephone subscriptions per 100 inhabitants	55	57	62	67

Fig 1.7:



Source: World Bank Data, 2014: Mobile cellular telephone subscriptions per 100 inhabitants
*This is the most recent figure available

85.19% is the current internet growth rate in the country

HOUSEHOLDS

INDICATOR NUMBER 36a: CURRENT GROWTH RATE OF INTERNET IN PAKISTAN

Current internet usage patterns shows that while the existing internet penetration is low across the country, there is significant growth in the internet market. As of 2014, the internet growth rate in the country was 85.19% per annum. This implies that there is steady growth in internet penetration in Pakistan, as more segments of the society gain access to the web through multiple technologies and channels. This growth rate augurs well for the future of internet usage and applications in Pakistan.

What is the current internet growth rate?	
	2014
All Pakistan	85.19%

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas.

19% of the population below the age of 25 are internet users – the highest of any age cohort

HOUSEHOLDS

INDICATOR NUMBER 36b: INTERNET USAGE IN AGE COHORTS

Analyzing internet usage by age cohorts in Pakistan reveals crucial dynamics of internet usage trends and permeation in the country.

At present, there are 15 million internet users in the country. Of those aged under 25 years, 19% are internet users. This accounts for 11 million of the total internet users in the country. Internet usage declines as older age cohorts are inducted into this picture.

10% of those aged between 25-30 years use internet in the country – this amounts to 1.7 million internet users. Similarly, 6% of those aged 31-40 use internet in the country. The proportion of internet usage declines to 4% of those in the 41-50 and 51-60 age bracket. 5% of Pakistanis above the age of 60 use internet.

Table 1.28: **Internet usage in age cohorts (read in rows)**

		Internet Usage	Internet users
All Pakistan		**8%**	**15,313,846**
Age of the Respondent	**Under 25**	19%	11,088,883
	25 – 30	10%	1,794,976
	31– 40	6%	1,120,503
	41- 50	4%	542,122
	51- 60	4%	359,493
	60+	5%	407,869

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 3000 respondents from all four provinces, including urban and rural areas

These numbers indicate that Pakistani youth is the largest internet user in the country. Given the youth bulge that is taking root in the country, it can be reasonably expected that internet usage growth and permeation will gain velocity over the next few years.

$0.77 Mobile cellular prepaid tariff per month in Pakistan

HOUSEHOLDS

INDICATOR NUMBER 37: Mobile cellular telephone prepaid tariffs per month in US$, and as a percentage of monthly per capita income

Indicator	2014
Mobile cellular telephone prepaid tariffs per month	$0.77

Indicator	2014
Mobile cellular telephone prepaid tariffs as a percentage of monthly per capita income	0.73%

Source: Calculation done by Gallup Pakistan based on available tariff rates of cellular companies

As per the ITU mechanism to compute monthly mobile cellular tariff, both calls and SMS messages are considered for this exercise for all five mobile operators in the country. The monthly tariff is based on a set of 25 calls and 30 SMS. All 3 variants of calls/SMS were considered with equal weights including on-net, off-net and landline (calls only). The computed tariffs were then weighted again in proportion to the mobile operators' relative market share. The aggregated figure in PKR was then divided by the prevailing exchange rate to arrive at the monthly mobile tariff in US$.

The figure above is highly descriptive as it indicates that $0.77 is spent by an average mobile consumer for a base set of mobile telephone facilities. It may be realistic to assume that with the advent of broadband mobile internet, this average monthly figure may increase correspondingly. However, since major chunk of the population still uses very basic mobile telephone facilities mostly confined to making calls and sending SMS messages(as described in this report) this figure is close to the national average expenditure on mobile telephone services.

0% localities with PIACs

HOUSEHOLDS

INDICATOR NUMBER 38: Percentage of localities with Public Internet Access Centers (PIACs)

Although numerous collaborative efforts between the public and private sector are ongoing to provide public internet access centers (PIACs) to various localities, currently there are no such PIACs in the country.

PIACs represent an efficient means of incorporating such segments of the population which are not covered by regular internet infrastructure but do pose demand of internet facilities. Such regions include rural areas and Balochistan province where the greater challenge is to increase internet penetration for a widely dispersed population.

Many of these PIACs are envisioned as pilot projects whereby the public is provided internet facility free of charge with additional facilities such as printing. Therefore such an infrastructure, however small in scale, has the potential of being an instruction tool on the benefits which may accrue from internet use.

Indicator	2010*
Percentage of Localities with PIACs	0%

Source: USF: CONCEPT PAPER UNIVERSAL TELECENTERS (UTC) PROJECT
*This is the most recent figure available

Section 1.2:

EDUCATION INSTITUTIONS SURVEY RESULTS

THIS SECTION REPORTS ON 10 ICT INDICATORS ON PAKISTANI EDUCATIONAL INSTITUTIONS

1% of all schools in the country use radios for educational purposes

SCHOOLS

INDICATOR NUMBER 1: PROPORTION OF SCHOOLS WITH A RADIO USED FOR EDUCATIONAL PURPOSES

The prevalence of radio usage in Pakistan is witnessing a sharp decline across the board. Results from the educational sector manifest this trend. A significant and overwhelming 99% of Pakistani school administrators and teachers reported that radio sets are not used for educational purposes at their institutes. Only a meagre 1% of all schools in the country used radio as a pedagogical tool in their curriculum.

When analyzed through the educational institution's status, universities emerged as an outlier. 33% of the universities reportedly use radios for educational purposes. Given the importance of advanced learning and research in universities, this use of radios in universities can be understood as an important source of knowledge, information, and research. However, no other type of educational institution reported utilizing radio sets an educational or pedagogical tool.

Provincially, none of the four provinces bucked the national trend in using radios in the education sector. Only 2% of the educational institutes in Punjab, and 1% in Sindh reported using radio sets for educational purposes in their institutes. None of the educational institutes surveyed in KPK and Balochistan reported using radios for educational purposes.

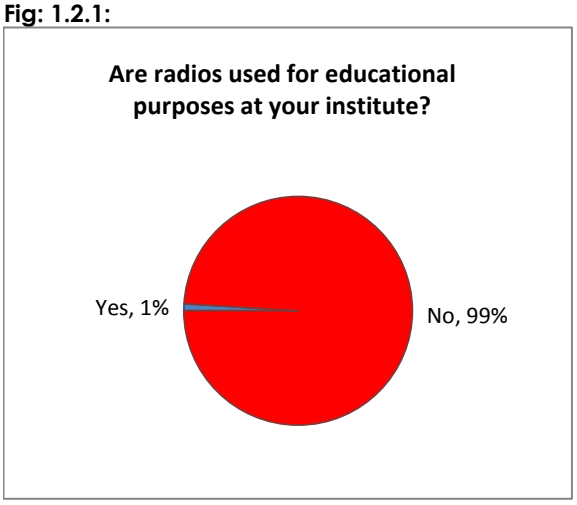
Table 1.2.1: **Proportion of schools with a radio used for educational purposes**

(Row %)

Q28. Are Radios used for educational purposes at your institute?		Yes	No
All Pakistan		1%	99%
Gender of Respondent	**Male**	1%	99%
	Female	1%	99%
Q1. What is the status of your educational institute?	**Primary**	0%	100%
	Middle	0%	100%
	High School	1%	99%
	Intermediate	0%	100%
	Degree College	0%	100%
	University	33%	67%
	Others	0%	100%
Q2. Is your institute Public or Private?	**Public**	1%	99%
	Private	1%	99%
Location	**Urban**	2%	98%
	Rural	0%	100%
Province	**Punjab**	2%	98%
	Sindh	1%	99%
	KPK	0%	100%
	Balochistan	0%	100%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.2.1:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 523 respondents from all four provinces, including urban and rural areas.

2% of all schools in the country use Television for educational purposes

SCHOOLS

INDICATOR NUMBER 2: PROPORTION OF SCHOOLS WHERE A TELEVISION IS USED FOR EDUCATIONAL PURPOSES

Despite the widespread presence of television in Pakistani households, the medium remains absent in the educational landscape. Specifically, television has not been adopted as an instructional medium, or a pedagogical tool in Pakistani educational institutes. 98% of Pakistani educational administrators and teachers reported that their educational institute did not use television for educational purposes. A meagre 2% of the educational institutes are currently using the medium as an instructional tool.

Universities are the only significant outlier in this trend. 42% of these institutes reported using television for educational purposes. This high proportion of television usage as an educational tool in universities can be explained by the institutional requirements and structure of universities. At this advanced level, research and knowledge dissemination requires using and analyzing communication medium – which could explain the comparatively prevalent use of televisions for educational purposes in universities. High schools were a distant second in this trend, with only 4% of high schools reporting using televisions for educational purposes.

Television as an educational medium in educational institutes is not popular across the four provinces. An outright majority of respondents in all four provinces reported that television was not used for educational purposes at their respective institutes.

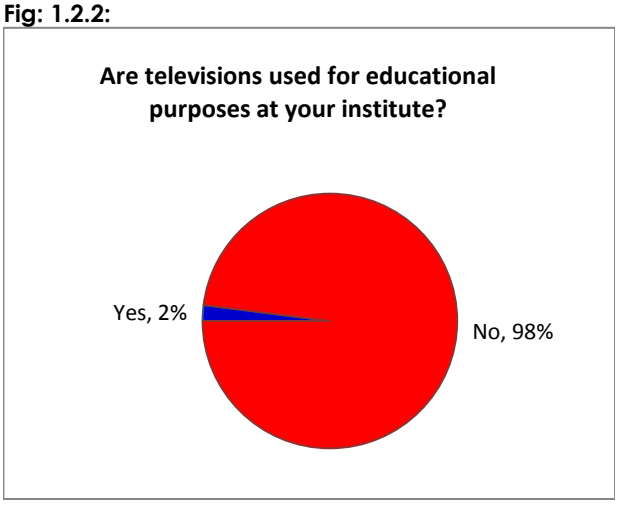
Table 1.2.2: **Proportion of schools where a television is used for educational purposes**

(Row %)

Q29. Are Televisions used to for educational purposes at your institute?		Yes	No
All Pakistan		2%	98%
Gender of Respondent	**Male**	2%	98%
	Female	1%	99%
Q1. What is the status of your educational institute?	**Primary**	1%	99%
	Middle	0%	100%
	High School	4%	96%
	Intermediate	0%	100%
	Degree College	0%	100%
	University	42%	58%
	Others	0%	100%
Q2. Is your institute Public or Private?	**Public**	2%	98%
	Private	3%	97%
Location	**Urban**	3%	97%
	Rural	1%	99%
Province	**Punjab**	3%	97%
	Sindh	1%	99%
	KPK	1%	99%
	Balochistan	0%	100%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.2.2:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 523 respondents from all four provinces, including urban and rural areas

42% of all schools in the country have a fixed line telephone facility at their premises

SCHOOLS

INDICATOR NUMBER 3: PROPORTION OF SCHOOLS WITH A TELEPHONE COMMUNICATION FACILITY

Telephone connectivity, specifically fixed line telephone connections in Pakistani schools are not a common feature. 42% of the Pakistani schools have a fixed line telephone connection at their premises. The majority of the schools, 58%, do not have fixed line telephone connectivity on school premises.

An important distinction emerges between public and private institutes when compared on this indicator. Private schools are more likely to afford the costs of a functioning fixed line telephone connection, as opposed to public schools. While only 38% of the public schools are reportedly connected through fixed line telephones, 55% of private educational institutes have fixed line telephone connectivity at their premises.

The level of educational institute is also an important marker for determining fixed line telephone connectivity. The likelihood of a fixed line telephone connection increases with the level of education. While only 28% of the primary schools have a fixed line telephone connection in Pakistan, 100% of universities and degree colleges have this facility at their premises. 46% of middle schools have fixed line telephone connections. Thus proportion increases to 73% when high schools are taken into consideration.

Interestingly, KPK leads the other three provinces by some distance on this metric. 71% of the schools in the province have a fixed line telephone connection at their premises. Comparatively, 39% schools in Punjab, 31% in Sindh, and 23% in Balochistan have a fixed line telephone connection.

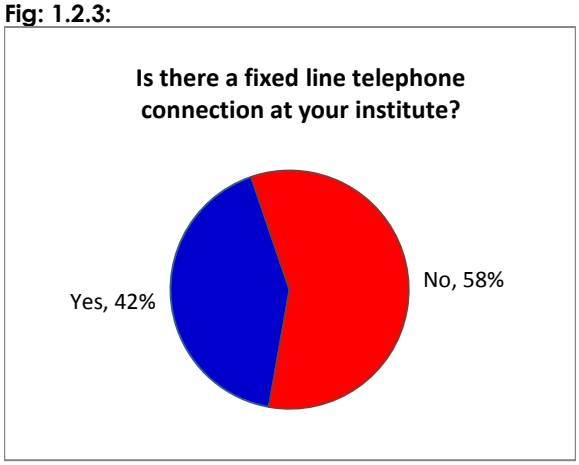
Table 1.2.3: **Proportion of schools with a telephone communication facility**

(Row %)

Q41. Is there a fixed line telephone connection at your institute?		Yes	No
All Pakistan		42%	58%
Gender of Respondent	**Male**	44%	56%
	Female	39%	61%
Q1. What is the status of your educational institute?	**Primary**	28%	72%
	Middle	46%	54%
	High School	73%	27%
	Intermediate	70%	30%
	Degree College	100%	0%
	University	100%	0%
	Others	100%	0%
Q2. Is your institute Public or Private?	**Public**	38%	62%
	Private	55%	45%
Location	**Urban**	53%	47%
	Rural	29%	71%
Province	**Punjab**	39%	61%
	Sindh	31%	69%
	KPK	71%	29%
	Balochistan	23%	77%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.2.3:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 523 respondents from all four provinces, including urban and rural areas.

51% of Pakistani schools with internet access use DSL connections

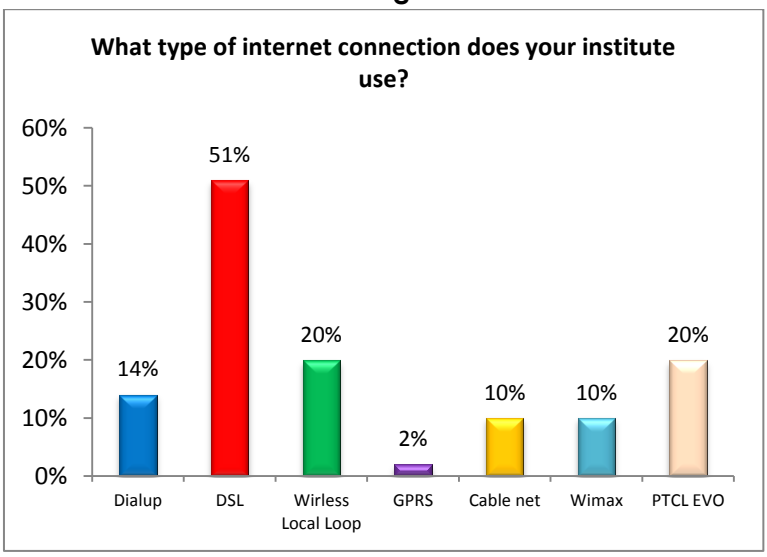
SCHOOLS

INDICATOR NUMBER 4: PROPORTION OF SCHOOLS WITH INTERNET ACCESS BY TYPE OF ACCESS

Internet access in Pakistani schools is primarily gained through fixed, wired connections – a trend that is consistent across internet usage in the country. Nationally, 51% of the schools access internet through DSL connection, while another 10% access the internet through cable net. Wireless connectivity is more dispersed when distinguished by type of access. 20% schools access internet through Wireless Local Loop, while another 20% accessed internet through EVDO. These numbers reveal that fixed, wired internet connections are more prevalent in Pakistani schools. The permeation of DSL connections is consistent with the general internet connection trend in Pakistan.

Educational institute status is another important determinant of the type of internet access. 50% of the primary schools access internet through cable net, while 25% gain access via DSL. 50% of middle schools are connected to the internet through DSL. DSL connectivity to internet emerges as a preferred type of access as the data is reviewed along higher educational rungs. 50% of the Intermediate colleges, 80% of Degree Colleges, and 67% Universities in Pakistan access the internet through DSL connections.

Fig 1.2.4



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 51 (allowed to use internet) respondents from all four provinces, including urban and rural areas.

Fixed internet connectivity via DSL is a preferential access service in Punjab and Balochistan. 55% of the educational institutes in Punjab and 100% of the educational institutes in Balochistan accessed internet through DSL connections. Educational institutes in Sindh and KPK prefer wireless connectivity. 38% schools in both provinces accessed the internet through Wireless Local Loop connections.

10% Pakistani students and school staff are allowed to use internet at school

SCHOOLS

INDICATOR NUMBER 5: PROPORTION OF LEARNERS WHO HAVE ACCESS TO INTERNET AT SCHOOL

Internet access in Pakistani schools is severely restricted. Nationally, 90% of the institutes do not allow students or staff to access the internet at their premises. Only 10% of the students and staff in Pakistani educational institutes are allowed to access the internet.

Internet access expands as educational institute status moves from primary to tertiary education. Internet access is limited to 1% of the students and staff in primary educational institutes. This access expands to 4% of the students and staff in middle schools. 29% of the staff and students in high school are allowed to access internet at school. 20% of Intermediate institutes and 71% of Degree Colleges allow staff and students to access internet. The access becomes universal (100%) at the university level in Pakistan.

Educational institutes in Balochistan emerge as the surprising leaders in allowing access to internet – although this allowance still remains at a low level. 17% of the educational institutes in the province allow staff and students to access internet. 12% institutes in Punjab and 10% institutes in KPK allow internet access. Sindh trails the other provinces, where only 6% of the educational institutes allow access to internet to their staff and students.

Public schools are more restrictive in granting access to internet usage to their staff and students. Only 8% of schools with internet connections allow students and staff to use internet. This allowance picks up to 13% in private schools, where more of the staff and students are allowed to use the internet.

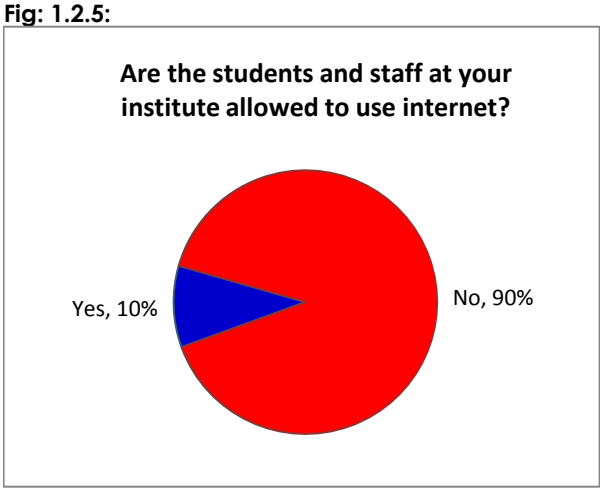
Table 1.2.5: **Proportion of learners who have access to internet at school**

(Row %)

Q33. Are the students and staff at your institute allowed to use internet?		Yes	No
All Pakistan		10%	90%
Gender of Respondent	**Male**	11%	89%
	Female	7%	93%
Q1. What is the status of your educational institute?	**Primary**	1%	99%
	Middle	4%	96%
	High School	29%	71%
	Intermediate	20%	80%
	Degree College	71%	29%
	University	100%	0%
	Others	33%	67%
Q2. Is your institute Public or Private?	**Public**	8%	92%
	Private	13%	87%
Location	**Urban**	14%	86%
	Rural	4%	96%
Province	**Punjab**	12%	88%
	Sindh	6%	94%
	KPK	10%	90%
	Balochistan	17%	83%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.2.5:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 523 respondents from all four provinces, including urban and rural areas.

20% Pakistani students are allowed access to each computer at school

SCHOOLS

INDICATOR NUMBER 6: LEARNERS-TO-COMPUTER RATIO IN SCHOOLS WITH COMPUTER-ASSISTED INSTRUCTION

While televisions and radios are absent in schools as an instructional medium, computers have increasingly become more integral and pervasive in schools. On average, 20 Pakistani students are able to access a single computer in their schools (19.93 exactly). This national average indicates that Pakistani students' access to computers is highly dense.

For the majority of the students in Pakistan, computers remain largely inaccessible. 32% of Pakistani students are not allowed to use computers at school. When access is granted, up to 100 students are given access to a single computer. 21% of Pakistani educational institutes allow between 101-300 students at their premises the access to a single computer.

Table 1.2.6: **Learners-to-computer ratio in schools with computer-assisted instruction**

Learners-to-computer access ratio		
		Mean
All Pakistan		19.93
Gender	Male	17.61
	Female	24.81
Q1. What is the status of your educational institute?	Primary	17.67
	Middle	14.83
	High School	27.06
	Intermediate	5.15
	Degree College	31.46
	University	22.72
	Others	5.13
Q2. Is your institute Public or Private?	Public	20.18
	Private	19.63
Location	Urban	23.45
	Rural	10.29
Province	Punjab	13.18
	Sindh	47.06
	KPK	15.2
	Balochistan	8.48

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 202 (having computer in institute) respondents from all four provinces, including urban and rural areas.

BOX # 5: ICT AND CHINA

With regards to ICT implementation, China faces problems all around (see figure). The business and institutional framework are weak, high taxation and red tape and no adequate questionable intellectual property laws. China, similar to the South Asian neighbour India, gains on affordability and even goes ahead on skill. However, ICT penetration is low. Only 40% of the population uses the Internet on a regular basis and there are 12 fixed broadband Internet subscriptions for every 100 people. ICT in business is, on the other hand, is expanding in China. The country is becoming more innovative with ICT which in turn is creating a greater and quicker adaptation to such technologies. The Chinese government is placing great hopes in ICTs to boost productivity and, ultimately, growth.

Facts about China: TECHNOLOGY, INTERNET & MEDIA
(http://www.china-mike.com/facts-about-china/facts-technology-internet-media/)

75% Pakistani schools have ICT qualified teachers

SCHOOLS

INDICATOR NUMBER 7: PROPORTION OF ICT-QUALIFIED TEACHERS IN SCHOOLS

An important facilitative conduit for ICT prevalence in the educational sector is the availability of ICT-trained and qualified teachers in schools. 75% of educational institutes in Pakistan have qualified ICT teacher's currently imparting education to students. 25% of the institutes around the country have no ICT qualified teacher in their staff.

Across all types of educational institutes, the presence and availability of ICT trained and qualified teacher's remains strong. Primary schools have the least number of ICT-qualified teachers at 51%. 82% Middle schools, 86% High Schools, 70% Intermediate Institutes, 86% Degree Colleges, and 100% Universities currently employ teachers who are ICT qualified.

Private sector educational institutes have more ICT qualified educators as compared to the public sector. While 82% of private educational institutes have ICT qualified computer teachers, the proportion declines to 69% in public schools.

Provincial distribution of ICT-qualified teachers highlights surprising findings. 88% educational institutes in Balochistan and 85% in KPK have ICT qualified teachers on their roster. 72% schools in Punjab and 67% in Sindh have ICT-qualified computer teachers.

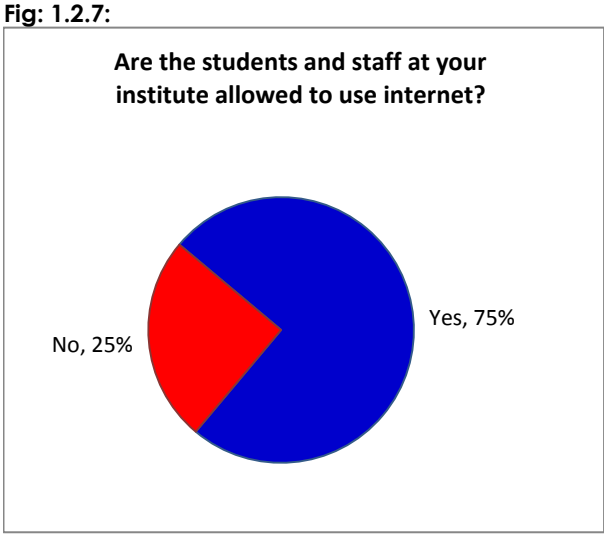
Table 1.2.7: **Proportion of ICT-qualified teachers in schools**

(Row %)

Q22. Does your institute have ICT qualified computer teachers?		Yes	No
All Pakistan		75%	25%
Gender of Respondent	**Male**	72%	28%
	Female	82%	18%
Q1. What is the status of your educational institute?	**Primary**	51%	49%
	Middle	82%	18%
	High School	86%	14%
	Intermediate	70%	30%
	Degree College	86%	14%
	University	100%	0%
	Others	67%	33%
Q2. Is your institute Public or Private?	**Public**	69%	31%
	Private	82%	18%
Location	**Urban**	76%	24%
	Rural	70%	30%
Province	**Punjab**	72%	28%
	Sindh	67%	33%
	KPK	85%	15%
	Balochistan	88%	12%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.2.7:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 202 (Having Computer in Institute) respondents from all four provinces, including urban and rural areas.

55% Pakistani students use internet at home after they have accessed it at their educational institute

SCHOOLS

INDICATOR NUMBER 8: PERCENTAGE OF STUDENTS WHO USE INTERNET AT SCHOOLS, COLLEGES, UNIVERSITIES AND DO NOT USE INTERNET AT HOME

For students, access and exposure to internet usage at the school is carried over to internet usage at home in a majority of the cases. 55% of Pakistani students used internet at home, after they had accessed and used the medium at school. However, a significant 45% of Pakistani students reported that they did not use internet at home after they had used the technology at their educational institute.

This correlation indicates that a majority of Pakistani students transfer their exposure to internet at schools to outside their educational institute. When considering the future prospects of internet growth, expanding internet access and exposure for students in public and private schools could be a crucial engine for internet growth in the country.

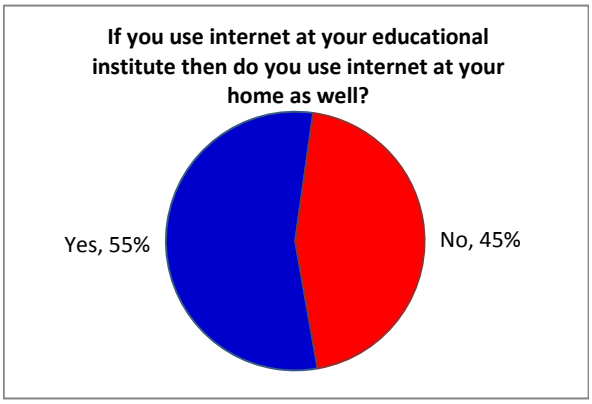
Table 1.2.8: **Percentage of students who use internet at schools, colleges, universities and do not use internet at home**

(Column %)

What is the percentage of students who use Internet at schools, colleges, Universities and do not use Internet at home?		
Q18. If you use internet at your institute then do you use internet at your home as well?	**Yes**	55%
	No	**45%**
	Total	100%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.2.8:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 31 (Internet Users at Educational Institute) respondents from all four provinces, including urban and rural areas.

BOX # 6: ICT AND EDUCATION

ICT has a huge potential in the education sector. The figure shows the ten trends highlighted by CORE Education on the use of ICT in education. Academic establishments can advantage from this facility by offering remote access to live lectures and students are benefited as education is now brought to those individuals who because of social, economic or medical reasons are unable to regularly attend an institution. Bradford University in England1, for example, allows students and academic staff to collaborate on learning materials online. Similarly ICT is being used by a primary school in Scotland to encourage parents to participate more in their child's education by having remote-access, shared learning facilities. Additionally, fast broadband access can allow educational institutions to increase their services as the expertise available to such institutions is now both on a notional and international level.

University of Bradford
(http://www.bradford.ac.uk/new-students/when-you-get-here/)

28% of all internet users in the country are students

SCHOOLS

INDICATOR NUMBER 9: SPLIT OF INTERNET USERS BETWEEN STUDENTS AND THE GENERAL POPULATION

Understanding the proportion of students in the internet using population is an important indicator of the extent to which the education system is enabling and facilitating students in integrating internet usage in their education, as well as their daily routine. In Pakistan, when all internet users are taken into account, 28% of this internet using population is comprised of students.

The low internet penetration level in the country is further crystallized when individual user demographic variables are taken into account. Most internet users in the country are below the age of 25. However, given the relative inaccessibility of internet at schools, not all students are getting access and exposure to internet through their schools.

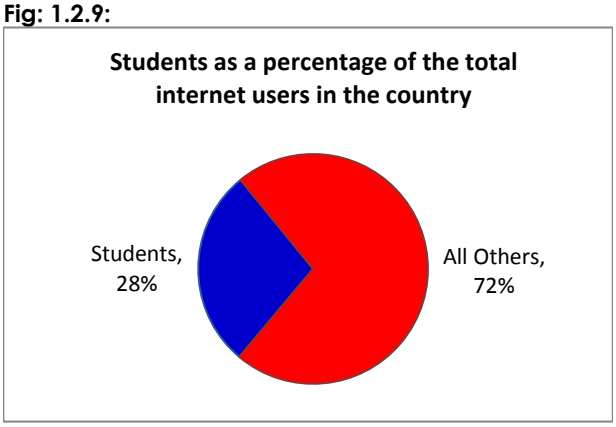
Table 1.2.9: **Split of internet users between students and the general population**

(Column %)

What is the split of users between students and other population?		% share of students in total internet usage
All Pakistan		8%
	Students	**28%**
	All others	72%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.2.9:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 274 (Internet Users) respondents from all four provinces, including urban and rural areas

36% Public schools at primary level with electricity

SCHOOLS

INDICATOR NUMBER 10: **Proportion of schools with electricity**

Access to electricity at schools is one of the building blocks for use of ICT in pedagogic activities. Many of the ICT related teaching aids rely on electricity to be properly adopted in schools. The table on the right illustrates a dearth of electricity access especially in public schools. There is a gap in electricity access between public and private schools with public schools lagging behind private schools in this critical indicator. For instance, this gap is 50% at pre-primary level, 46% at primary level, 19% at middle elementary level, 9% at secondary level and only 3% at higher secondary level.

The gap between public and private schools (in electricity access) represents a deep rooted constraint when trying to promote the use of ICT in schools. Any campaign seeking to promote the use of ICT in schools needs to factor in this inequality between public and private schools otherwise it risks neglecting a large chunk of students in terms of providing access to ICT.

Furthermore, electricity access in schools is heavily tilted towards higher tiers of education. The primary level of education fares poorly in terms of electricity access. This is of crucial importance for any ICT policy geared towards schools as the primary educational tier forms the backbone for other tiers and in this case, it is the weakest link in the chain.

Table 1.2.10: **Proportion of Schools with Electricity**

Education Level		% of Schools with Electricity
All Pakistan		
Pre-Primary	Public	48%
	Private	98%
Primary	Public	36%
	Private	82%
Middle Elementary	Public	79%
	Private	98%
Secondary	Public	90%
	Private	99%
Higher Secondary	Public	96%
	Private	99%

Source: UNESCO: The Education System in Pakistan

ICT Case Studies in Schools

Case Study #1 **Government Primary School in, Gujjar**

Case Study #2 **Government Middle School, Sukkur**

Case Study #3 **Government Vocational Institute, (a degree college), Multan**

Case Study #4 **Public University, Lahore**

* Pictures used in case studies are not real. This is to protect identity of survey respondents.

CASE STUDY #1

Shaukat Rafiq (the name has been changed to protect the identity of the individual), the administrator of the Government Primary School in Gujjar, district Toba Tek Singh was interviewed on 20th January, 2014 at 9:30 am. The school is an all-male institution with 165 students and 5 teachers.

According to Mr. Rafiq, the school does not currently have a computer facility and does not use a radio or television as a part of its education curriculum. He does say that the school plans on introducing computers for its students in the future because the administrations believes it is beneficial for education purposes. When asked how much he would be willing to pay to have the facility introduced, Mr. Rafiq said he believed Rs. 5001 to Rs.10,000 adequately reflected the cost per computer.

Because there is a lack of computer facilities, it is understandable that the school does not have an internet facility that students and teachers can make use of either. However, similar to the situation with computers, Mr. Rafiq believes that an internet facility will be available at the school in the future because it provides great resources for teaching purposes. When asked the cost of internet that he would find reasonable, between Rs. 1000 and Rs. 1500 was the answer.

Government Primary School has negligible communication infrastructure as is apparent by the lack of a telephone line. However, here again the administrator says that they will install landline soon and the school is willing to pay over Rs. 1500 for the service.

CASE STUDY #2

Liaquat Hussain (the name has been changed to protect the identity of the individual) is a middle school student at Government Middle School in Sukkur. He was interviewed on 19th January 2014 at 8:12 pm.

The middle school he attends does not use radio, television or computer devices to enhance the quality of education. Additionally, access to results via the computer is also not possible. Even though the school has seven computers there are no computer labs on the school premises. This compounded by the fact that there are no trained computer teachers on staff means that education in this field is really limited at Liaquat's school.

According to Liaquat, computers at school are not used for any specific administrative or education purposes. Therefore, it is not strange that there are no printers and no computer classes at the institution. Furthermore, the school does not have an internet connection which means that the vast amount of teaching resources available online are not used by the teachers and students at Liaquat's school.

CASE STUDY #3

Nadir Shebaz (the name has been changed to protect the identity of the individual) is a student of Government Vocational Institute, a degree college in Multan. He was interviewed regarding ICT penetration at his institution on 21st January, 2014 at 3:20 pm.

Nadir's institution has 18 faculty members who regularly use the computer to provide information to the students and to enrich the study experience. Other devices such as radio and TV, however, are not used for this purpose. While there are 27 computers available at the school, there is no proper lab where students can access such a facility and neither is there internet availability.

The institution has two computer teachers who teach students about computers and technology. According to Nadir, computers at the degree college are used both by the faculty and by the administration for their tasks. Furthermore, besides computer access the institute provides its students with a printing facility as well as regular computer classes. He says that the computers are used for both education and recreational purposes.

CASE STUDY #4

Shamim Azhar (the name has been changed to protect the identity of the individual) is a professor at a public university in Lahore. Her educational institute provides a co-educational environment to 250 students who are taught by 20 faculty members. She works both as a teacher and an administrator at the university and has been working there for five years. This interview was conducted on 21st January, 2014 at 2:12 pm.

Ms. Azhar says that her institution regularly uses a computer for registering students but does not use it for keeping student records or for communication between instructors and students. The university has its own internal network as well as a functioning website for current and prospective students. However, facilities such as viewing class schedules and viewing results are not available on the website. However, according to Ms. Azhar, the university is connected other universities and educational institutes through this network. Upon request, she even provided the university email id and website address.

She reported that there are about 50 computers at the university and 45 of them are reserved for educational purposes. Computers are actively used as an education tool at the university but televisions and radios are not. Furthermore, the university has 3 computer teachers. All the computers are in good condition and meet the university's computer needs adequately. They also have networking abilities and the internet is accessible to all including students, teachers, accounts office and the administration. DSL is the internet connection of choice and the government funds the expenses for this facility. Internet is most commonly used for admission and research by students and faculty. The university also has a landline connection.

Section 1.3:
ENTERPRISES

THIS SECTION REPORTS 12 ICT INDICATORS FROM PAKISTANI ENTERPRISES

Note: The Enterprises represent a cross section of Enterprises in Urban Pakistan. Moreover, the sample does not include micro enterprises i.e. those that employ less than 10 individuals. For more details please visit the Methodology section of the report.

77% of all Pakistani enterprises reported using a computer in the last year

ENTERPRISES

INDICATOR NUMBER 1: PROPORTION OF BUSINESSES USING COMPUTERS

Unlike households, computer usage has penetrated Pakistani businesses and workplaces. The results gathered in this study indicate that a substantial, 77% of all Pakistani businesses have used a computer at their establishment in the last few months. Conversely, 22% Pakistani businesses did not report any computer usage in their establishment over the last few months.

When these results are further deconstructed along provincial lines, a lopsided picture emerges. Business establishments in Punjab and Sindh outperform KPK and Balochistan when it comes to computer usage over the last few months. 85% businesses in Punjab and 86% businesses in Sindh reported employing computer usage in their operations. In contrast, 59% businesses in KPK and 44% businesses in Balochistan reported computer usage in their establishments.

Predictably, computer usage emerges as a more integral and pervasive component of service-related business enterprises. Detailed results show that while 83% of service enterprises deployed computers in their operations over the last few months, the proportion declines slightly to 74% in trade-related businesses, and 73% in manufacturing businesses.

The size of the organization emerged as a strong predictor of computer usage in the Pakistani business landscape. 58% small organizations (11-50 employees) used computers at their establishment. This proportion rises to 89% in medium enterprises (51-100 employees), and 93% in large enterprises (100+ employees).

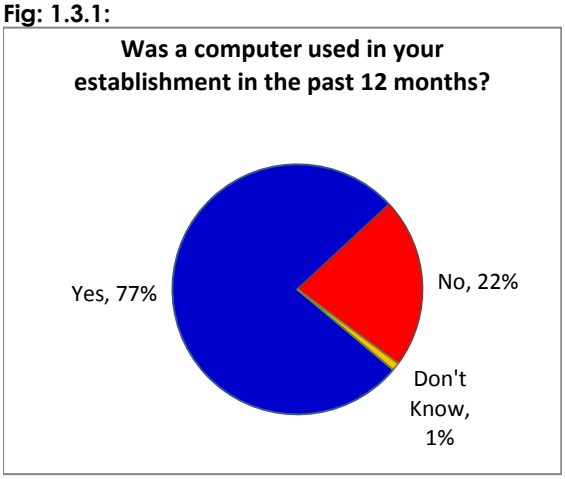
Table 1.3.1: **Proportion of businesses using computers**

(Row %)

Was a computer used in your establishment in the past 12 months?		Yes	No	Don't know
All Pakistan		77%	22%	1%
What is the nature of work of this enterprise?	Manufacturing	73%	26%	1%
	Trade	74%	26%	0%
	Services	83%	16%	1%
What is the size of this enterprise (according to number of employees)?	Small (11-50)	58%	41%	1%
	Medium (51-100)	89%	11%	0%
	Large (100+)	93%	7%	0%
Province	Punjab	85%	15%	0%
	Sindh	86%	14%	0%
	KPK	59%	36%	5%
	Balochistan	44%	56%	0%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.1:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 521 respondents from all four provinces, including urban and rural areas.

77% of all Pakistani enterprises reported using a computer for office related work

ENTERPRISES

INDICATOR NUMBER 2: PRIMARY USES OF COMPUTERS IN OFFICES

Computer usage is a common feature of Pakistani workplace – as attested in the data gathered and analyzed here. The majority of Pakistani organizations have fully integrated computers as the preferred medium for organizational operations. 76% of the enterprises in Pakistan reported that all the office-related activities in their organization are conducted on computers. 13% of the enterprises around the country use computers for cash processing and transactions, while 11% of the enterprises use computers for checking official emails.

Balochistan-based enterprises deploy computers for different objectives. 73% of the enterprises in Balochistan use computers to conduct cash-based transactions. In contrast, the majority of Punjab, Sindh, and KPK-based enterprises use computers for all their operations. 89% enterprises in Sindh, 82% enterprises in KPK, and 73% enterprises in Punjab use computers to conduct and complete their official operations.

Enterprises working in the services sector have to rely on extensive computerization of their official operations. This is reflected in the data, where 82% of all Pakistani service-based enterprises use computers for the entirety of their operations. 74% of urban manufacturing enterprises conduct all their operations on computers, while computers are deployed in 63% of trade-based enterprises for this objective.

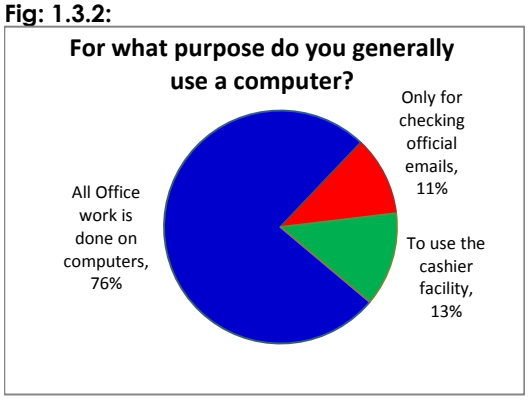
Table 1.3.2: **Primary uses of computers in offices**

(Row %)

For what purpose do you generally use a computer?		Office work is done on computer	Only for checking official emails	To use the cashier facility
All Pakistan		76%	11%	13%
What is the nature of work of this enterprise?	**Manufacturing**	74%	15%	11%
	Trade	63%	11%	26%
	Services	82%	8%	10%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	80%	6%	14%
	Medium (51-100)	73%	16%	11%
	Large (100+)	76%	11%	13%
Province	**Punjab**	73%	17%	10%
	Sindh	89%	4%	7%
	KPK	82%	5%	14%
	Balochistan	23%	4%	73%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.2:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 403 (Computer Users) respondents from all four provinces, including urban and rural areas

63% of Pakistani enterprises reported using the internet for office-related work over the last year

ENTERPRISES

INDICATOR NUMBER 3: PROPORTION OF BUSINESSES USING THE INTERNET

Internet usage is becoming increasingly prevalent in Pakistani enterprises. National-level data shows that 63% of Pakistani businesses used internet for office-related work over the last year. 37% of the enterprises reported lack of internet connectivity and activity in their routine operations.

Provincial analysis of internet usage in Pakistani enterprises presents a lopsided picture. Punjab and Sindh-based businesses outperformed their KPK and Balochistan counterparts when it came to using internet for office-related work. 78% of the enterprises in Punjab and 71% of the enterprises in Sindh reported using the internet in their business operations over the last few months. Contrarily, internet penetration in enterprises declines to 28% in KPK and a paltry 12% in Balochistan.

The size of the business is a stable predictor of internet usage in Pakistani business organizations. Data reveals that 44% of small enterprises (11-50 employees) accessed the internet for their operations. This proportion increases significantly to 69% of medium-sized enterprises (51-100 employees), and 83% of large-scale enterprises (100+ employees).

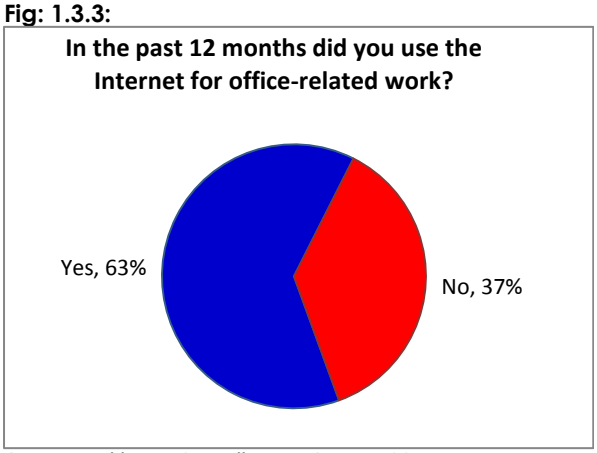
Table 1.3.3: **Proportion of businesses using the internet**

(Row %)

In the past 12 months did you use the internet for office related work?		Yes	No
All Pakistan		63%	37%
What is the nature of work of this enterprise?	**Manufacturing**	60%	40%
	Trade	55%	45%
	Services	68%	32%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	44%	56%
	Medium (51-100)	69%	31%
	Large (100+)	83%	17%
Province	**Punjab**	78%	22%
	Sindh	71%	29%
	KPK	28%	72%
	Balochistan	12%	88%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.3:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 521 respondents from all four provinces, including urban and rural areas.

46% of Pakistani enterprises had less than a quarter of their workforce using the internet in their daily operations

ENTERPRISES

INDICATOR NUMBER 4: PROPORTION OF PERSONS EMPLOYED ROUTINELY USING THE INTERNET

While more Pakistani enterprises are accessing and deploying internet in their daily operations, the access and usage is limited to a smaller proportion of the workers in each organization. Conversely put, the majority of the workers in an average Pakistani enterprise are likely to remain disengaged from the internet. National data shows that 46% of Pakistani enterprises (the highest) have less than 25% of their workers using internet, while 30% enterprises have between 25-50% of their workforce accessing and using the internet. 13% enterprises have between 50-75% of their workers using internet. Only 10% of Pakistani businesses are likely to have the majority of their workers (75-100%) routinely using the internet.

Small and medium-sized enterprises are more likely to have a smaller proportion of their workforces engaged with the internet. 58% of smaller enterprises (11-50 workers) have less than 25% of their workers using the internet. Only 10% of these organizations have the majority of their workers (75-100%) routinely using the internet. 49% of the medium-sized enterprises (51-100 employees) have less than 25% of their workers using the internet. Internet usage is slightly more prevalent in larger enterprises (100+ employees). While 36% of the large enterprises have less than 25% of their workers using the internet, 42% of these organizations have between 25-50% of their workers using the internet. 12% of the large enterprises (the highest proportion) have between 75-100% of their employees using the internet.

Provinces differ in the proportion of employees utilizing the internet at work. 83% of the organizations in Balochistan have less than 25% of their employees using the internet. 62% of KPK-based enterprises, 54% of Sindh-based enterprises, and 39% of Punjab-based enterprises have less than 25% of their workers using the internet.

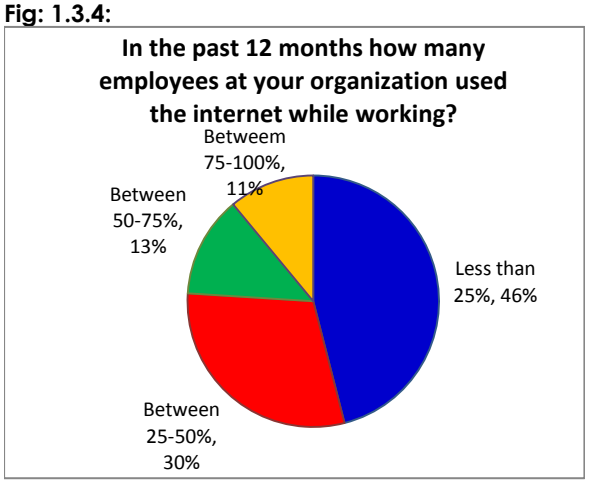
Table 1.3.4: **Proportion of persons employed routinely using the internet**

(Row %)

In the last 12 months how many employees at your organization used the internet while working?		Less than 25%	Between 25% and 50%	Between 50% and 75%	Between 75% and 100%
All Pakistan		46%	30%	13%	11%
What is the nature of work of this enterprise?	Manufacturing	53%	32%	11%	4%
	Trade	38%	41%	9%	12%
	Services	42%	26%	16%	16%
What is the size of this enterprise (according to number of employees)?	Small (11-50)	58%	16%	16%	10%
	Medium (51-100)	49%	29%	13%	9%
	Large (100+)	36%	42%	10%	12%
Province	Punjab	39%	35%	12%	14%
	Sindh	54%	22%	18%	6%
	KPK	62%	33%	5%	0%
	Balochistan	83%	0%	0%	17%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.4:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 327 (Internet Users) respondents from all four provinces, including urban and rural areas.

49% Pakistani enterprises reported having a web presence

ENTERPRISES

INDICATOR NUMBER 5: PROPORTION OF BUSINESSES WITH A WEB PRESENCE

As internet penetration increases, a higher proportion of Pakistani businesses are establishing a web presence. Overall, 49% of Pakistani businesses claim to have online presence, either in the form of a website or a Facebook page. However, a high proportion of Pakistani enterprises are still absent from the web landscape. 46% of Pakistani businesses claim to have no online presence (website or Facebook page).

Provincially, ICT presence and penetration in enterprises are concentrated in Punjab and Sindh – a theme increasingly prominent in this study. Data indicates that 61% of Punjab-based enterprises, and 59% of Sindh-based enterprises have established an online presence. This healthy proportion declines sharply to 19% in KPK, and a meagre 10% in Balochistan.

The sectorial nature of the business, as well as the size of the enterprise is a crucial determinant of online presence. Most manufacturing enterprises in Pakistan are unlikely to have online presence. 50% of the manufacturing businesses do not operate an online presence, while 45% have established some form of online presence. Trade-related enterprises are more evenly split. While 50% of trade enterprises have online presence, 47% of these businesses are absent from the internet. Most service-related enterprises (54%) are more likely to have an online presence, as opposed to online absence (43%).

The size the organization is a stable and strong predictor of online presence for Pakistani enterprises. While only 32% of small enterprises (11-50 employees) have an online presence, the proportion increases to 51% of the medium enterprises (51-100 employees), and 72% of the large enterprises (100+ employees).

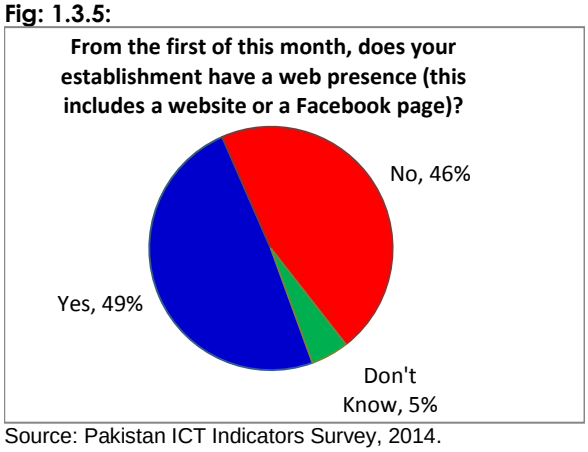
Table 1.3.5: **Proportion of businesses with a web presence**

(Row %)

From the first of this month, does your establishment have a web presence (this includes a website or a Facebook page)?		Yes	No	Don't know
All Pakistan		49%	46%	5%
What is the nature of work of this enterprise?	**Manufacturing**	45%	50%	5%
	Trade	50%	47%	3%
	Services	54%	41%	5%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	32%	64%	4%
	Medium (51-100)	51%	43%	6%
	Large (100+)	72%	24%	4%
Province	**Punjab**	61%	36%	3%
	Sindh	59%	34%	7%
	KPK	19%	73%	8%
	Balochistan	10%	88%	2%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.5:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 521 respondents from all four provinces, including urban and rural areas

26% Pakistani enterprises received orders for goods and services over the internet

ENTERPRISES

INDICATOR NUMBER 6: PROPORTION OF BUSINESSES RECEIVING ORDERS OVER THE INTERNET

Using the internet as a vehicle for generating business, primarily in the form of received orders, is an important ICT feature of well-connected enterprises. Data in this study shows that nationally, 26% Pakistani enterprises received orders over the internet. This proportion, while significant, is less than alternative uses of the internet in enterprises: communication (sending and receiving emails), information (getting information on goods and services) etc.

Provincial disaggregation of national data yields a more complex picture. Sindh has the highest proportion of business – at 36% - that received orders over the internet in the past few months. In Punjab, 30% of the businesses received orders over the internet, while in KPK 11% of enterprises received orders online. In Balochistan, the proportion of businesses generating revenue through online orders is the lowest: at 2%.

The sector the enterprise belongs to provides a good indication of the importance of internet in driving business. 32% of trade-related businesses in Pakistan receive orders online, while 33% of manufacturing-based businesses received orders through the internet. This proportion declines to 17% in service-oriented enterprises in Pakistan.

Table 1.3.6: **Proportion of businesses receiving orders over the internet**

(Row %)

Receiving orders for goods and services			
		Yes	No
All Pakistan		26%	74%
S1. What is the nature of work of this enterprise?	Manufacturing	33%	67%
	Trade	32%	68%
	Services	17%	83%
S2. What is the size of this enterprise (according to number of employees)?	Small (11-50)	17%	83%
	Medium (51-100)	30%	70%
	Large (100+)	35%	65%
Province	Punjab	30%	70%
	Sindh	36%	64%
	KPK	11%	89%
	Balochistan	2%	98%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.6:

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 521 respondents from all four provinces, including ur and rural areas.

35% Pakistani enterprises placed orders for goods and services over the internet

ENTERPRISES

INDICATOR NUMBER 7: PROPORTION OF BUSINESSES PLACING ORDERS OVER THE INTERNET

The internet is also a crucial vehicle for organizations to place orders. Most Pakistani internet-using enterprises are currently not using the internet for purchasing transactions. Nationally, only 35% of the enterprises surveyed in this study indicated that they used the internet in the past few months to place orders for goods and services. 65% of the enterprises across Pakistan's urban areas indicated that they do not place orders for goods and services over the internet.

The nature of an enterprise is an important variable in determining whether the internet is used to place orders for goods and services. In general, most manufacturing and trade-based businesses can be predicted to use this service. Data gathered in this study indicates that 40% of trade-related enterprises, and 43% of manufacturing businesses in Pakistan placed orders for goods and services over the internet in the past few months. Only 24% of service-based enterprises placed orders for goods and services over the internet.

Provincially, Punjab, Sindh, lead the other two provinces in using the internet to procure goods and services. 43% of urban Sindhi enterprises and 42% of urban Punjabi enterprises used the internet to procure goods and services. 16% of the urban enterprises in KPK placed online orders for goods and services. In contrast, Balochistan trails the other three provinces, where only 2% of the businesses reported using the internet to place orders for goods and services.

Table 1.3.7: **Proportion of businesses placing orders over the internet**

(Row %)

Sending orders for goods and services			
		Yes	No
All Pakistan		35%	65%
S1. What is the nature of work of this enterprise?	Manufacturing	43%	57%
	Trade	40%	60%
	Services	24%	76%
S2. What is the size of this enterprise (according to number of employees)?	Small (11-50)	21%	79%
	Medium (51-100)	39%	61%
	Large (100+)	49%	51%
Province	Punjab	42%	58%
	Sindh	43%	57%
	KPK	16%	84%
	Balochistan	2%	98%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.7:

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 521 respondents from all four provinces, including urban and rural areas

54% Pakistani enterprises used the internet for email communications

ENTERPRISES

INDICATOR NUMBER 8: INTERNET-USAGE ACTIVITIES IN PAKISTANI ENTERPRISES

Pakistani enterprises use the internet for a wide variety of purposes. This study gauged the proportion and prevalence of internet-usage in Pakistani enterprises along different usage metrics. National data shows that the most common use for internet in Pakistani enterprises is primarily communicative. 54% of Pakistani businesses use the internet to send and receive emails. The next most prevalent internet use in Pakistani enterprises is getting information about goods and services – 37% of urban Pakistani enterprises use internet for this purpose.

Provincial data stayed congruent with the national results. 50% of Punjab-based enterprises, 63% of Sindhi enterprises, 51% of KPK-based enterprises, and 42% of Baloch businesses used the internet to communicate via emails. Similarly, 39% of Punjab-based and KPK-based businesses used the internet to access information about goods and services, while 34% of Sindhi enterprises used the internet for this objective. However, no Baloch enterprise reported using the internet for this purpose.

When analyzing the data through the sectoral lens, it quickly becomes apparent that the majority of manufacturing (52%), trade (54%), and service businesses (56%) used the internet for email communication. Gathering information about goods and services was the second-most prevalent activity across all sectors.

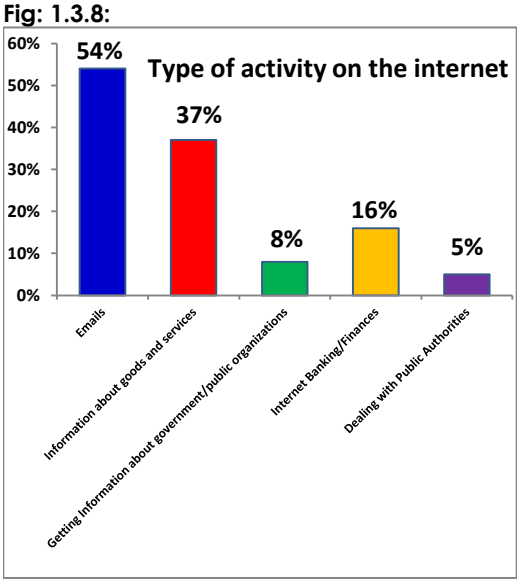
Table 1.3.8: **Internet-usage activities in Pakistani enterprises**

(Multiple Response)

		Sending and receiving emails	Getting information about goods and services	Getting information from government/public organizations	Performing internet banking or accessing other financial services	Dealing with government organizations/public authorities
All Pakistan		54%	37%	8%	16%	5%
S1. What is the nature of work of this enterprise?	**Manufacturing**	52%	41%	8%	13%	4%
	Trade	54%	44%	6%	26%	4%
	Services	56%	31%	8%	17%	6%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	59%	34%	9%	22%	6%
	Medium (51-100)	52%	39%	9%	12%	3%
	Large (100+)	52%	37%	6%	16%	5%
Province	**Punjab**	50%	39%	8%	17%	4%
	Sindh	63%	34%	8%	18%	7%
	KPK	51%	39%	0%	3%	0%
	Balochistan	42%	0%	10%	10%	0%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.8:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 327 (Internet Users) respondents from all four provinces, including urban and rural areas.

69% Pakistani enterprises access the internet through DSL

ENTERPRISES

INDICATOR NUMBER 9: PROPORTION OF BUSINESSES USING THE INTERNET BY TYPE OF ACCESS

Internet is accessed and utilized through a variety of channels in Pakistan. Pakistani enterprises were surveyed in detail on the type of access that allowed them to use the internet. Results indicate that the outright majority of Pakistani enterprises – 69% - access the internet through a DSL connection.

This preference for access remains stable when the data is analyzed in terms of the nature of the business. 72% of service-based enterprises, 66% of the manufacturing business, and 74% of trade-related businesses access the internet through DSL connection

Provincially, Punjab has the highest proportion of businesses accessing the internet through DSL. 86% of the businesses in the province use DSL connectivity. In Sindh, enterprises are more split in terms of their internet access: 48% use DSL connections, 46% use Wimax, while 33% of the businesses access the internet through cable net. In KPK, Wireless local loop is used by 48% of enterprises. The majority of the urban enterprises in the province access the internet via Wimax technology.

Table 1.3.9: **Proportion of businesses using the internet by type of access**

In the past months, through which method did you use the internet at your establishment? (multiple response)								
		Dial up	Wireless local loop	DSL	GPRS such as using internet on your mobile phone	Cable net	Wimax	EVDO
All Pakistan		6%	8%	69%	6%	12%	31%	2%
S1. What is the nature of work of this enterprise?	Manufacturing	6%	10%	66%	5%	12%	33%	1%
	Trade	0%	3%	74%	18%	15%	21%	3%
	Services	7%	8%	72%	3%	12%	32%	3%
S2. What is the size of this enterprise (according to number of employees)?	Small (11-50)	5%	4%	61%	9%	14%	33%	2%
	Medium (51-100)	5%	6%	77%	4%	14%	25%	2%
	Large (100+)	6%	14%	69%	5%	9%	35%	2%
Province	Punjab	3%	1%	86%	1%	2%	22%	2%
	Sindh	3%	15%	48%	16%	33%	46%	4%
	KPK	43%	48%	14%	0%	5%	57%	0%
	Balochistan	0%	0%	100%	0%	17%	0%	0%

Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 327 (Internet Users) respondents from all four provinces, including urban and rural areas.

26% Pakistani enterprises use an intranet infrastructure

ENTERPRISES

INDICATOR NUMBER 10: PROPORTION OF BUSINESSES WITH AN INTRANET

Inter-organizational network usage and connectivity has only partially been integrated into Pakistani enterprises. Intranet usage and deployment is currently restricted to nearly half the national enterprises, while the remaining organizations have not implemented this framework. 26% of the Pakistani businesses reported the usage of intranet in their organization. A slightly higher, 71% of the enterprises reported that their organization is not connected via intranet.

Organizational size is a crucial factor that determines the presence of intranet in an organization. This feature is clearly seen in the data gathered from Pakistani enterprises. While only 9% of small business (11-50 employees) have established an intranet framework in their enterprise, the proportion increases to 32% of medium-sized enterprises (51-100 employees), and 44% of large enterprises (100+ employees).

Service sector enterprises are the most likely to have an intranet framework working in their organization. 30% of service-bases businesses reported using intranet. This proportion drops to 27% of manufacturing enterprises, and 13% of trade businesses. The majority of manufacturing (71%) and trade (84%) enterprises do not use intranet in their organization.

Provincial difference between Punjab and Sindh, and KPK and Balochistan is substantial, when considering intranet as an ICT indicator. While 30% of Punjab-based enterprises and 39% of Sindh-based enterprises reported using intranet, the proportion declines precipitously to 4% in Balochistan, and 3% in KPK.

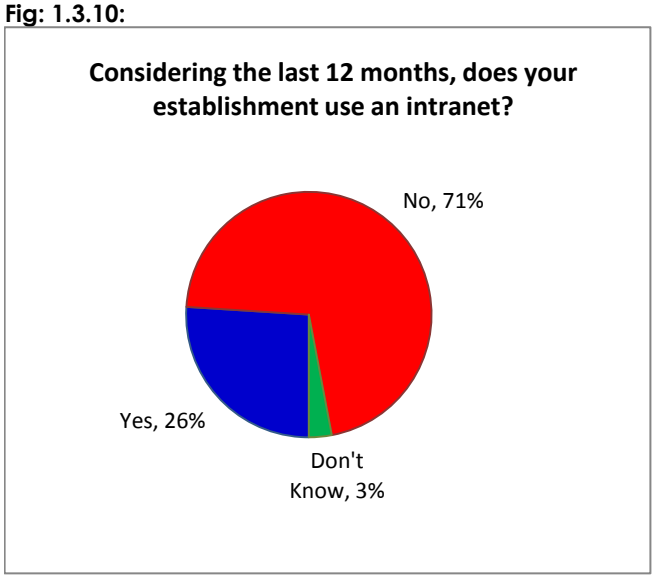
Table 1.3.10: **Proportion of businesses with an intranet**

(Row %)

Considering the last 12 months, does your establishment use an intranet?		Yes	No	Don't know
All Pakistan		26%	71%	3%
What is the nature of work of this enterprise?	Manufacturing	27%	71%	2%
	Trade	13%	84%	3%
	Services	30%	68%	2%
What is the size of this enterprise (according to number of employees)?	Small (11-50)	9%	87%	4%
	Medium (51-100)	32%	66%	2%
	Large (100+)	44%	55%	1%
Province	Punjab	30%	68%	2%
	Sindh	39%	59%	2%
	KPK	3%	93%	4%
	Balochistan	4%	94%	2%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.10:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 521 respondents from all four provinces, including urban and rural areas.

77% Pakistani enterprises DO NOT extranet

ENTERPRISES

INDICATOR NUMBER 11: PROPORTION OF BUSINESSES WITH AN EXTRANET

Extranet connectivity is deployed in the business-to-business context to deepen integration between enterprises, and their partners, vendors, suppliers etc. This platform has not been fully integrated into Pakistani enterprises. National-level data indicates that a substantial 77% of Pakistani enterprises do not use an extranet in their establishment. Nationwide, only 15% organizations use extranet communications and connections.

The size of the organization emerged as an important tool for assessing the deployment of extranet in Pakistani enterprises. A paltry 6% of small Pakistani enterprises (11-50 employees) are currently deploying extranet (82% do not deploy this network). The proportion of extranet usage increases to 15% in medium enterprises (51-100 employees), and to 26% in large sized enterprises (100+ employees).

Extranet usage differs when analyzed provincially. 18% of Punjab-based enterprises use extranet networks, while 20% of the Sindh-based enterprises deploy extranet connections. This prevalence declines sharply to 4% of enterprises in Balochistan and 1% of enterprises in KPK. 96% of the enterprises in KPK and 86% of the enterprises in Balochistan do not deploy extranet connections.

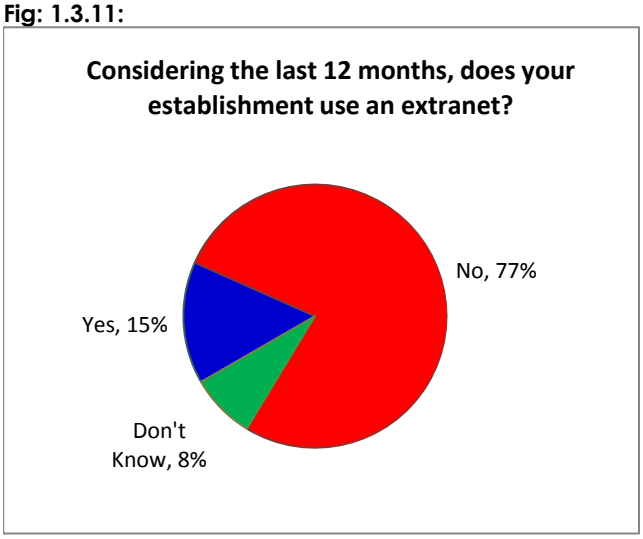
Table 1.3.11: **Proportion of businesses with an extranet**

(Row %)

Considering the first of this month please tell us does your establishment use an extranet?		Yes	No	Don't know
All Pakistan		15%	77%	8%
What is the nature of work of this enterprise?	**Manufacturing**	15%	76%	9%
	Trade	8%	76%	16%
	Services	16%	78%	6%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	6%	82%	12%
	Medium (51-100)	15%	81%	4%
	Large (100+)	26%	66%	8%
Province	**Punjab**	18%	76%	6%
	Sindh	20%	66%	14%
	KPK	1%	96%	3%
	Balochistan	4%	86%	10%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.11:



Source: Pakistan ICT Indicators Survey, 2014.
Sample Size: 521 respondents from all four provinces, including urban and rural areas

24% Pakistani enterprises use local area networking (LAN)

ENTERPRISES

INDICATOR NUMBER 12: PROPORTION OF BUSINESSES WITH A LOCAL AREA NETWORK (LAN)

Local area networking has not been fully integrated into Pakistani enterprises that have internet access. 76% of the enterprises in Pakistan reported that they had not used a local area network in the past few months. 24% of the enterprises reported using LAN connectivity in their organizations.

Provincially, the differential prevalence of LAN in organizations is stark between Punjab and Sindh on the one hand, and Sindh and Balochistan on the other. 28% of the enterprises based in Punjab reported that they had used LAN in the past few months, while 35% of the Sindhi businesses reported using LAN connections at their workplace. In sharp contrast, 96% of KPK-based and Balochistan-based enterprises did not use LAN in their establishment.

The size of the organization determines the use of LAN in Pakistani organizations. 8% of small-scale enterprises (11-50 employees) in Pakistan reported using LAN at their establishment. This prevalence increases significantly as the organizational size increases. 28% of medium-sized enterprises (51-100 employees) reported using LAN in the past few months, while 43% of the large enterprises (100+ employees) used LAN in their organization.

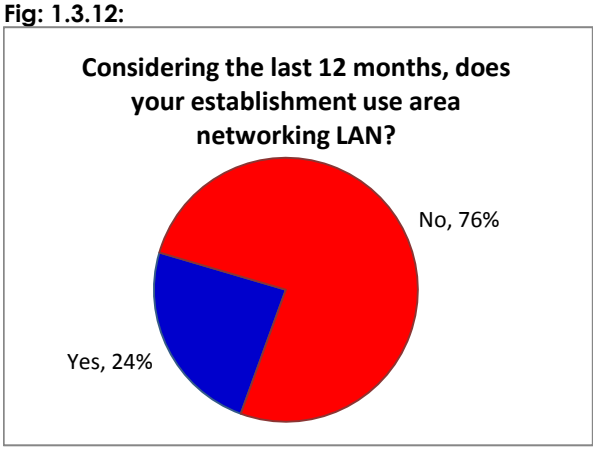
Table 1.3.12: **Proportion of businesses with a local area network (LAN)**

(Row %)

Keeping in mind the past 12 months, does your establishment use area networking LAN?			
		Yes	No
All Pakistan		24%	76%
What is the nature of work of this enterprise?	Manufacturing	25%	75%
	Trade	15%	85%
	Services	26%	74%
What is the size of this enterprise (according to number of employees)?	Small (11-50)	8%	92%
	Medium (51-100)	28%	72%
	Large (100+)	43%	57%
Province	Punjab	28%	72%
	Sindh	35%	65%
	KPK	4%	96%
	Balochistan	4%	96%

Source: Pakistan ICT Indicators Survey, 2014.

Fig: 1.3.12:



Source: Pakistan ICT Indicators Survey, 2014
Sample Size: 521 respondents from all four provinces, including urban and rural areas.

49% Pakistani enterprises have more than five employees routinely using computers

ENTERPRISES

INDICATOR NUMBER 13: PROPORTION OF PERSONS EMPLOYED ROUTINELY USING COMPUTERS

Gallup Pakistan's various segregation techniques for the enterprises segment further enrich the data on number of employees who routinely use a computer (during work). Based on these segregated figures, we can arrive at the proportion of these employees in terms of size of the establishment, type of establishment or its legal status etc.

The size of firm has important bearing on number of personnel routinely using computers. For instance, a marginal increase in size of the enterprise from small to medium (scale) corresponds to a 20% increase in personnel (more than five) who routinely use computers. Furthermore, another marginal shift from medium to large scale induces an increase of 11% in personnel (more than five) who routinely use a computer. Therefore a marginal increase in size of the enterprise does not correspond to a uniform shift in number of personnel (more than 5) routinely using a computer. We can project therefore, that the highest proportion of such personnel will be situated in enterprises which are medium in scale.

This indicator is also responsive to the type of enterprise. Consequently, services sector enterprises are predominant when it comes to the proportion of personnel routinely using a computer (57%) for more than five such personnel. Manufacturing enterprises come in a second with a 46% of such enterprises employing personnel (more than five) who routinely use a computer. Trade sector lags far behind with regards to this indicator and constitutes only 26% enterprises which employ personnel routinely using a computer. The high incidence of computer usage in services sector is a key to understanding their nature of work. Services enterprises are highly digitized operations requiring extensive linkages with other segments of the economy and pose a higher demand for computer usage. One of the major aspects of the services sector is the back and forth flows of information and computers (and associated networks) become crucial in sustaining this information flow in the services sector.

Provincial level breakdown of this indicator has also much to offer. Enterprises located in Sindh slightly outperform those in Punjab in terms of employing more personnel who routinely use a computer. Karachi being a major hub of commercial activities in Sindh especially comprising services sector enterprises is therefore well placed in employing more personnel who routinely use a computer. Balochistan fares poorly in terms of this indicator due to a marked lack of services sector enterprises and a general dearth of ICT infrastructure.

Table 1.3.13: **Proportion of persons employed routinely using computers**

(Row %)

		How many personnel in your establishment generally used a computer at their job in the last months?			
		One	Two to five	More than five	Don't know
All Pakistan		10%	37%	49%	4%
What is the nature of work of this enterprise?	**Manufacturing**	11%	37%	46%	6%
	Trade	17%	52%	26%	4%
	Services	7%	35%	57%	2%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	19%	48%	31%	2%
	Medium (51-100)	9%	34%	51%	5%
	Large (100+)	3%	31%	62%	4%
Firm's legal status	**Shareholding company with shares trade in the stock market**	13%	6%	69%	13%
	Shareholding company with non-traded shares	0%	24%	57%	19%
	Sole proprietorship	10%	47%	42%	0%
	Partnership	18%	36%	38%	8%
	Limited partnership	3%	20%	74%	3%
	All others	17%	50%	33%	0%
Province	**Punjab**	7%	39%	54%	0%
	Sindh	7%	35%	56%	2%
	KPK	18%	32%	23%	27%
	Balochistan	41%	41%	18%	0%

Source: Pakistan ICT Indicators Survey, 2014.

54% Enterprises with internet access use it to send/receive emails

ENTERPRISES

INDICATOR NUMBER 14: PROPORTION OF BUSINESSES USING THE INTERNET BY TYPE OF ACTIVITY

The advent and integration of computers and internet have radically altered the 21st century workspace by re-engineering the information and communication paradigm. The induction of computers, and associated networking technologies, has created local, national, and international webs between enterprises and their markets, thereby creating deep, extensive, and cross-cutting economic linkages. In particular, the internet has been critical in triggering these structural changes in the enterprises. The types of activities undertaken on the internet illustrate the importance of internet connectivity and communication for enterprises.

The 2001 Gallup-KPMG National ICT Indicators Report surveyed urban enterprises in the country, and asked respondents with internet connectivity at workplace to rate the various types of activities they undertake on the internet. The results from that report are reproduced below:

Table 1.3.14: **Proportion of businesses using the internet by type of activity**

Email	**77%***
Fax	48
Surfing	25
International calling	21
Chatting	12
E-commerce	06
Research	05
Internet Shopping	04
Information	04

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology – 2001

These results from 2001 show that Pakistani enterprises with internet connections in 2001 were primarily using the internet for communication purposes i.e. emails and faxes. The remaining range of activities was only undertaken by a minority of Pakistani enterprises. These results can be juxtaposed with the results from the 2014 Gallup ICT Indicator Survey, which provides a detailed breakdown of the major types of activities undertaken on the internet by Pakistani enterprises. These results from Section 1 of this report are reproduced below:

Table 1.3.15: **Activity-wise share of internet use by businesses**

(Multiple Response)

		Sending and receiving emails	Getting information about goods and services	Getting information from government/public organizations	Performing internet banking or accessing other financial services	Dealing with government organizations/public authorities
		Row %	Row %	Row %	Row %	Row %
All Pakistan		54%	37%	8%	16%	5%
S1. What is the nature of work of this enterprise?	**Manufacturing**	52%	41%	8%	13%	4%
	Trade	54%	44%	6%	26%	4%
	Services	56%	31%	8%	17%	6%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	59%	34%	9%	22%	6%
	Medium (51-100)	52%	39%	9%	12%	3%
	Large (100+)	52%	37%	6%	16%	5%
Province	**Punjab**	50%	39%	8%	17%	4%
	Sindh	63%	34%	8%	18%	7%
	KPK	51%	39%	0%	3%	0%
	Balochistan	42%	0%	10%	10%	0%

Source: Pakistan ICT Indicators Survey, 2014.

In addition, Pakistani enterprises with internet connections have integrated internet-based services and technologies for two core business pursuits: sending and receiving orders for goods and services over the internet. The proportion of Pakistani enterprises with internet connections, receiving orders for goods and services in 2014 is as follows:

Table 1.3.16: **Businesses using the internet for receiving orders of goods and services**

(Row %)

		Receiving orders for goods and services	
		Yes	No
All Pakistan		26%	74%
S1. What is the nature of work of this enterprise?	**Manufacturing**	33%	67%
	Trade	32%	68%
	Services	17%	83%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	17%	83%
	Medium (51-100)	30%	70%
	Large (100+)	35%	65%
Province	**Punjab**	30%	70%
	Sindh	36%	64%
	KPK	11%	89%
	Balochistan	2%	98%

Source: Pakistan ICT Indicators Survey, 2014.

The proportion of Pakistani enterprises connected to the internet, sending orders for goods and services in 2014 is as follows:

Table 1.3.17: **Businesses using the internet for sending orders of goods and services**

(Row %)

		Sending orders for goods and services	
		Yes	No
All Pakistan		35%	65%
S1. What is the nature of work of this enterprise?	**Manufacturing**	43%	57%
	Trade	40%	60%
	Services	24%	76%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	21%	79%
	Medium (51-100)	39%	61%
	Large (100+)	49%	51%
Province	**Punjab**	42%	58%
	Sindh	43%	57%
	KPK	16%	84%
	Balochistan	2%	98%

Source: Pakistan ICT Indicators Survey, 2014.

These results from 2001 and 2014 provide a clear indication of the changes in how Pakistani enterprises use the internet. Whereas emails (77%) were the single most important activity undertaken by Pakistani enterprises in 2001, they have diversified their usage of the internet in 2014. Emails are still an important type of activity undertaken by Pakistani enterprises in 2014 – 54% of all internet-connected enterprises use the web for communication. However, important changes have occurred in other dimensions. For instance, where e-commerce was only undertaken by 6% of Pakistani enterprises in 2001, today 26% of internet-connected enterprises received orders for goods and services online, while a significant 35% reported sending orders for goods and services via the internet. Similarly, where only 4% of internet-connected enterprise sought information on the internet in 2001, this use has expanded to 37% of internet-connected enterprises in 2014.

This comparative analysis shows that Pakistani enterprises have evolved in the types of activities undertaken on the internet. This evolution is reflective of a deeper business integration of the internet into modern enterprises. Pakistani enterprises are moving ahead on the global information technology integration trajectory in businesses. Over the last 12 years, internet is increasingly used by Pakistani enterprises for core businesses activities, which signals the gradual structural assimilation of IT technologies in Pakistani businesses.

ICT Case Studies in Enterprises

* Pictures used in case studies are not real. This is to protect identity of survey respondents.

CASE STUDY #1

'Imperial Bakery' is small enterprise in Quetta which specializes in both domestic and foreign baked goods. Founded in 1923, the business is mostly involved in the trade sector. To understand the use of ICT in their business, Mr. Tariq Haider (the name has been changed to protect the identity of the individual), the manager of the bakery was interviewed on 28th January, 2014 at 4:00 pm.

The business is privately owned and employs between 11 and 50 individuals. The bakery relies on the use of mobile phone on its day to day functioning. Furthermore, they also use a computer which the manager says makes it easier to keep a track of the business. However, Imperial Bakery does not feel that an increase in computers will be more productive for the business, for when asked if they were likely to buy more computers in the future, the Manager replied in the negative. The main purpose of using the computer at present is for cashier facilities and only one employee has been using this machine for the past year.

Interestingly, while the bakery does use a computer, there is no internet connectivity. The manager does not feel the need to use an internet, and should the need ever arise; he says he will not pay more than Rs. 500 for the facility. The reason for not using the internet is because he does not feel the bakery has anything to gain by incorporating this technology into the business. Imperial Bakery has never used the internet and does not plan on using the internet in the foreseeable future, even though they did and intend to keep using the computer at work. The bakery does have a telephone line besides the mobile network connection.

When questioned about the use of ICT in monetary activities, Mr. Haider said that the bank account was used for most of the transactions including receiving money for goods, payment of utility bills, payment for goods and other miscellaneous expenses. He did mention that utilizing a computer has made work more interesting in the past five years but has never ventured to use the internet for online banking services.

CASE STUDY #2

'Art Computer' is a small services business engaged in supplying computers and electronic accessories. Employing less than 50 people, this private company was started in 2010 in Malir by Rehman Ahsan (the name has been changed to protect the identity of the individual). The owner of the shop was interviewed on 8th February, 2014 at 10:00 am.

For most of its daily business, the company uses a mobile phone and the owner says that in the past year, they have used the computer to aid in their business. Mostly, the computer is used to download and install software – an important aspect of business in computer-based enterprises. Mr. Ahsan says that most of the office work is conducted via the computer and more than 5 of his employees currently use the machine. He even mentioned that his employees are trained to use the computer.

With regards to using the internet, the owner of the enterprise said that he has used the internet in the past year both for office work and home use. Additionally, internet at business is used extensively for emails, gaining information about goods and services, research purposes, for customer ease, sending goods online and for sending and receiving orders for goods and services. According to Mr. Ahsan, about 50% to 75% of his employees used the internet for work in the past year. The company uses Wimax cable net and has used the internet regularly for business this past year.

Being a computer related enterprise, it is unsurprising that the business utilizes internet, however Art Computer neither has access to a LAN nor extranet but does have two telephone connections which are regularly used for business. Furthermore, the enterprise uses bank accounts for most of its transactions including accepting money on transactions, paying utility bills, paying for purchased goods and other expenses. Mr. Ahsan claims that while using technology and computers has made his work interesting he does not plan on using electronic banking services in the near future.

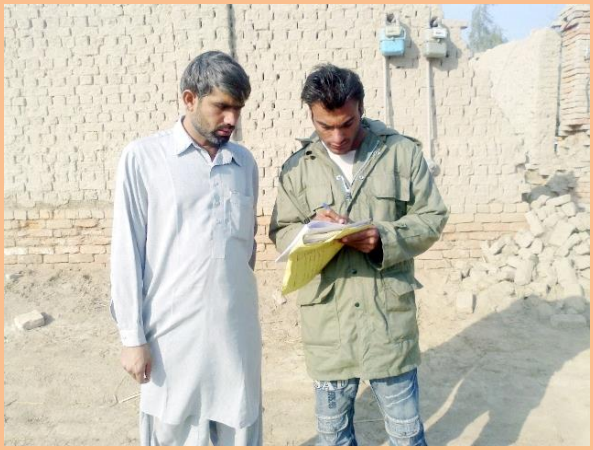
CASE STUDY #3

The owner of a large auto service business in Sukkur, Mr. Ahmed Zubair (the name has been changed to protect the identity of the individual) was interviewed on January 21st, 2014 at 10:00 am to understand how ICT was incorporated into his enterprise's daily routine. This privately owned company was started in 1960 and currently employs more than 100 individuals.

According to Mr. Zubair, a mobile is phone is regularly used for business purposes. His enterprise even uses a computer which he says makes work easier. The business has one computer and the owner does not believe that increasing the number would be beneficial. Mr. Zubair also states that his employees are provided training to better understand how to use computers efficiently for business purposes.

While the enterprise does own a computer, there is no internet connection and the facility is neither needed nor used for work. If the internet ever were required, Mr. Zubair does not believe he will pay over Rs. 1000 for the facility because at the moment, he does not see any benefit of using the internet for his auto business. As the business does not use internet, there are neither LAN nor extranet connections in the business – which is interesting, especially for a company this large. The auto service shop does however have six telephone lines that are regularly used.

When asked about finances, Mr. Zubair said that he mostly used bank accounts for all his transactions including paying for goods and services, receiving payments, paying the utility bills and miscellaneous expenses. While he does agree that using technology in business has made work more interesting, he does not foresee his company using electronic banking in the near future. So ICT penetration in his enterprise's case remains limited.



CASE STUDY #4

An example of a large enterprise that has successfully incorporated ICT into its business is MEP, an engineering company in Lahore. The Assistant Manager, Mr. Raza Ehsan (the name has been changed to protect the identity of the individual) was interviewed on 17th January, 2014 at 10:30 am.

MEP employs more than 100 individuals and is a privately owned business that has regularly used a computer this past year. Mr. Ehsan believes that the computer helps with all office work and overlooking of services. The business currently has more than five computers and all office work is performed on these machines. He states that more than five of the employees regularly use the computer but none of them have been given any formal training by the company.

Given the size and scale of the enterprise, it is understandable that the business uses the internet. Mr. Ehsan says that he uses the internet both at work and at home. According to him, the main purpose of using the internet at work is to send and receive emails as well as to carry out internet banking and other such facilities online. Currently, 75% to 100% of MEP employees use the internet as a part of regular work. When questioned about the kind of internet the enterprise used, he said that DSL was the connection of choice.

MEP is benefiting greatly by using internet at the workplace and so invests in this facility. The proof is in the fact that the company uses both LAN and extranet facilities. Like all business, owning a landline still remains integral to the business and the company has 8 such connections.

When it comes to finances, the company retains old school mechanisms – relying on a bank account for transactions, payment utility bills and other business expenses. The assistant manager does admit that using technology and computers has made work more interesting over the last five years and a testament to the fact is that MEP has started using electronic banking for finances as well. Overall, MEP is one of those enterprises that are at the forefront of ICT usage in Pakistan.

CASE STUDY #5

Asad Ali (the name has been changed to protect the identity of the individual); the manager of a medium sized enterprise in Faisalabad was interviewed on 22nd January, 2014 at 10:00 am. 'Raza Store' identifies with the services sector and employs between 51 and 100 individuals. It is a privately owned company that started in 2000, and regularly uses a mobile phone in its business activities.

According to Mr. Ali, the company has regularly used a computer this past year especially for online banking and data storage purposes. Approximately two to five employees regularly operate using the computer and most of such office work relates to checking emails. He says that the company has between 2 and 5 computers and the employees are regularly provided training to operate the machine.

Given that the company uses the computer to engage in online banking, it is thus predictable that the company also uses the internet. The manager says that the facility is used both at home and at work. When inquired about the use of internet in the past 12 months, he identified sending and receiving emails and providing customers with facilities as the top factors. Furthermore, the company has both LAN and extranet facilities.

Telephone usage remains essential to businesses even today as despite having mobile phone and internet facilities, Raza Store still has three landline connections. Majority of the finances are handled through the bank account including paying for items and receiving payment, payment of utility bills and other expenses. The manager claims that using the internet has made business work a bit more interesting. The company has jumped on the bandwagon of corporations that use online banking, and it remains one of the reasons why the enterprise uses a computer.

CASE STUDY #6

Akhtar Baig (the name has been changed to protect the identity of the individual) owns a medium-sized enterprise in Hyderabad that employs between 51 and 100 individuals. This self-owned factory primarily manufactures goods and was founded in 1995. The interview was conducted at 10:20 am on 19th January, 2014.

Like most businesses today, the factory actively uses a mobile phone for work related matters however, unlike many medium sized businesses across Pakistan; it does not use a computer. According to Mr. Akhtar, if he ever felt the need to use a computer, he would not be willing to pay more than Rs.. 10,000 for it. Since the factory does not own a computer, they also don't have any work that needs an internet connection. When asked on how much he would be willing to pay for an internet connection at some point in the future (should factory operations require it), Mr. Akhtar said between Rs.. 501 and Rs.. 1000. While he does acknowledge that using the internet would be more beneficial for his business, he says it is unlikely that his factory will use this facility in the near future. The factory however, has had to use the computer on some occasions in the past one year, even though it does not own one.

The factory still remains conventional in its business approach and relies on landline connections, having one telephone line. When it comes to transactions, the factory, like many businesses in Pakistan, primarily uses a bank account for activities such as making payment, receiving payment, payment of bills and miscellaneous expenses. The owner chose to not tell us whether or not technology has enriched his professional experience. The factory maintains a limited touch with technology as it does not even use online banking.

CASE STUDY #7

'Ali Express' is a transport company in Multan that provides non-stop bus service between Lahore and Multan. Additionally, it also provides a cargo facility across Pakistan. The company was started in 1996 as a result of a partnership and Ahmed Riaz (the name has been changed to protect the identity of the individual), a department manager was interviewed at 9:00 am on 29th January, 2014. The company is a large enterprise, employing more than 100 people and is associated with the services sector.

Like many businesses today, Ali Express uses both mobile phones and computers in its everyday work. Mr. Riaz mentions that one of the major reasons for using a computer is that it increases the speed and efficiency of work and the data remains safe. The transport company uses more than 5 computers and most of the office work is done on them. Furthermore, while more than five employees at Ali Express are able to use computers they were never given any training on how to use the device by the company.

The enterprise also uses the internet and Mr. Riaz says he uses the facility both at home and at work. Emailing, getting information about goods and services as well as providing customers with facilities are the main reasons why Al Express uses the internet. Less than 25% of the employees at the transport company use the internet and the connections used are DSL, Evdo and Wimax. Furthermore, given the various internet mechanisms it is not surprising that the company has both LAN and extranet facilities. There is also a landline connection with 6 telephone lines constantly used by the business.

Most of the company's business transactions are done using the bank account including payment of bills, sending or receiving money for services as well as any miscellaneous expenditure. The company also uses the internet to access internet banking. Mr. Riaz believes that employing technology has made work more interesting over the past five years.

Section 1.4:

Production

THIS SECTION REPORTS 9 ICT INDICATORS FROM PAKISTANI PRODUCTION SECTOR

2.03% business sector workforce in ICT sector

PRODUCTION

INDICATOR NUMBER 1: PROPORTION OF TOTAL BUSINESS SECTOR WORKFORCE INVOLVED IN ICT SECTOR

The sector-wise segmentation of ICT related workforce reveals a major share for the Information Technology segment as compared to the Communication Technology segment in terms of contributing to the ICT related workforce. This is primarily explained by the labor intensive nature of software/hardware technology as compared to, for instance, telecommunication technology. Additionally, the deregulated structure of Information Technology firms also contributes to their greater incidence in the domestic market, while Communication Technology firms tend to be heavily regulated with significant barriers to entry.

The proportion of business sector workforce involved in the ICT sector is around 2% in Pakistan. The business sector workforce excludes agricultural workforce, which has a high prevalence in the country. Both demand side and supply side constraints may explain these lower levels of ICT related workforce. The supply side constraints include lack of adequate trainings/coursework geared towards the ICT sector. The demand side constraints involve the government not assimilating the ICT sector effectively in its policy framework so as to play a major role in the economic growth of the country as in the case of neighboring India.

Table 1.4.1: **Total business sector workforce involved in the ICT sector**

		Number
Total ICT Workforce		**659,250**
Communication Technology	**Telecommunication**	37,250
	Media	200,000
Information Technology	**Software/BOP/Hardware**	422,000

Source: KPMG investment in Pakistan, 2013
PASHA-I Industry Report, 2008
PSEB Industry Overview

4.37% share of ICT sector in gross value added

PRODUCTION

INDICATOR NUMBER 2: ICT SECTOR SHARE OF GROSS VALUE ADDED

Table 1.4.2: **Share of ICT Sector in Gross Value Added**

Share of ICT Sector in Gross Value Added				
Year	**2005**	**2006**	**2007**	**2008***
% Share in Gross Value Added	3.87	4.17	4.36	4.37

Source: Trading Economic, 2014-Information and Communication Technology Expenditure (% of GDP) in Pakistan
*This is the most recent figure available

For the four year period spanning 2005-2008, the ICT sector has gained momentum in terms of its share in the gross value added in Pakistan. In the year 2008, the ICT sector's share was recorded at 4.37% of the total gross value added in the country.

Although the impact of growth in domestic GDP on the ICT sector's growth cannot be refuted, other factors may explain the growing share of the ICT sector in gross value added. International trade linkages and the increasing tendency of the domestic ICT sector to service not just the local market, but the international market, can shed light on its growing share in gross value added.

As regional competing economies and their ICT related labor force become relatively more expensive due to the investment glut, Pakistan is rightly placed to offer its ICT human resource at attractive prices and thus yield a greater role and share for this sector in the gross value added in the coming years.

3.6% Share of ICT in imports by Pakistan

PRODUCTION

INDICATOR NUMBER 3: ICT GOODS IMPORTS AS A PERCENTAGE OF TOTAL IMPORTS

Given the primacy of ICT technologies and services in a wide range of economic consumption and production patterns, ICT goods and services have become integral to many public and private sector operations. This implies that some countries are dependent in importing ICT goods to meet their needs. The World Bank provides in-depth global data on ICT imports from around the world. The diffusion of ICT expertise and comparative advantage around the world implies that even the most advanced ICT-based service economies have to source some ICT goods and services from other countries. This reality is borne out in the statistics that show that many developed service sector economies, with strong ICT resources, rely in importing a portion of their ICT goods consumption. The following Table provides country-level data on ICT Goods Imports as a percentage of total goods imports from a select group of Asian countries, which will help elucidate Pakistan's performance on this indicator between 2009 and 2011.

Table 1.4.3: **ICT Goods Imports**

	2009	2010	2011*
Afghanistan	0.3%	0.4%	
China	21.9%	20.4%	18.0%
India	7.8%	6.3%	6.0%
Malaysia	30.1%	29.8%	25.6%
Nepal	5.1%	7.2%	5.3%
Pakistan	**3.1%**	**3.3%**	**3.6%**
Sri Lanka	3.2%	2.9%	3.5%

Source: World Bank, 2014 – ICT Goods Import (% of total goods imports)
*This is the most recent figure available

This table reveals a number of intriguing dynamics that drive the modern economic production and value-generation. Countries that have achieved a higher level of growth and development transition towards production and economic activity generation based primarily out of the services sector. As this transition towards the services sector consolidates, a significant proportion of a country's consumption and production processes require ICT goods and resources. ICT goods imports data shows that both China and Malaysia have a large proportion of their import bill composed of ICT goods and services. Concurrently, if domestic ICT goods and resource production is the primary foundation for the service sector, a country becomes less reliant on importing these ICT goods. India is the best example of this trend. As a large proportion of India's exports come from ICT goods and services, the country's domestic transition towards the services sector is aided by its own substantial ICT sector. Therefore, India has been decelerating its ICT goods and imports. Similarly, as the domestic ICT production and exports increase in China and Malaysia, the overall dependence on importing ICT goods declined between 2009 and 2011 in these countries.

Pakistan's total import bill shows that the country spends a small proportion of its finances on importing ICT goods and resources, especially when compared to other middle income developing countries in the region. Between 2009 and 2011, total ICT goods imports increased from 3.1% of the total goods imports to 3.6% of the total goods imported in the country. This shows that Pakistan has been much slower at progressing towards an ICT-based advanced services sector that could catapult the economy into a higher growth trajectory. When this trend is juxtaposed with the export figures analyzed in the previous pages, it becomes clear that ICT goods and services are currently accounting for a small proportion of the country's overall balance of trade. Pakistan needs to accelerate its growth in its ICT sector to match the economic productivity and value generated by other South Asian states.

0.2% Share of ICT in Pakistan Exports

PRODUCTION

INDICATOR NUMBER 4: ICT GOODS EXPORTS AS A PERCENTAGE OF TOTAL EXPORTS

The share of ICT in a country's export is a good indicator of maturity of its services sector in general and the ICT sector in particular. A host of factors of production need to be amalgamated to provide thrust to ICT related exports. These include a well-trained human resource, ICT infrastructure and an efficient trade policy. In an interconnected global environment, share of ICT in exports may also represent the level of integration a country has achieved with its trading partners. Therefore, development of this crucial indicator entails a well thought out domestic and foreign trade policy framework.

When compared to regional economies, Pakistan fares poorly in terms of its share of ICT in total exports. For instance, over the period 2010-2012, Pakistan's share was one-tenth that of India and less than one-hundredth that of China. This is quite a revealing statistic in that it shows inadequacy of domestic resource mobilization geared to the ICT sector.

Table 1.4.4: **ICT Goods Exports**

	2010	2011	2012*
China	29.1%	26.8%	27.1%
India	2.0%	2.2%	2.0%
Malaysia	34.0%	29.4 %	27.9%
Pakistan	0.2%	0.2 %	0.2%
Sri Lanka	0.5%	0.4 %	0.5%

Source: World Bank, 2014 – ICT Goods Exports (% of total goods Exports)
*This is the most recent figure available

Any comprehensive policy framework to address this indicator will necessitate a rethink of the role of ICT in the economy. The ICT sector is complementary to other business activities and has enormous positive externalities for various segments of the economy with a focus to increasing efficiency and productivity. By the widespread adoption of ICT in the domestic economy of Pakistan, the public sector can overcome many of the resource constraints marring growth in Pakistani exports and GDP over the past five years.

10% learners in post-secondary level in ICT related fields

PRODUCTION

INDICATOR NUMBER 5: PROPORTION OF LEARNERS ENROLLED AT THE POST-SECONDARY LEVEL IN ICT-RELATED FIELDS

To enumerate a universe of learners enrolled at the post-secondary level, Gallup has utilized data provided by the Economic Survey of Pakistan, 2014. The table below categorizes all such types of learners at the post-secondary level:

Table 1.4.5: **Proportion of learners enrolled at the post-secondary level in ICT-related fields**

Post-Secondary Level	
Higher Secondary	1,400,000
College	630,000
University	1,600,000
Total	**3,630,000**

Source: Pakistan Economic Survey, 2012
KPMG-Investment in Pakistan, 2013

There are a total of 3.63 million learners enrolled at the post-secondary level across the country. Of these post-secondary learners, 360,000 are enrolled in ICT related fields as highlighted in the Bearing Point's 2006 study on a BPO strategy for Pakistan. Thus the proportion of learners in ICT related fields is around 10% at post-secondary level.

Although there has been a phenomenal expansion in the number of learners at post-secondary level over the past 8 years, the ratio of learners associated with ICT has remained roughly constant. This indicates continued interest in the labor market for ICT related professions wherein aspiring graduates comprehend steady dividends in ICT related professions, once they graduate. It is nevertheless an instructive tool in formulating any ICT policy which targets the labor market; however it has to be viewed in a certain context. For instance, this indicator does not reveal the diversity or sophistication of ICT programs or if they fulfill the requirements of rapidly evolving ICT landscape.

68% share of computer sales for Pakistani Households

PRODUCTION

INDICATOR NUMBER 6: What are the segments, such as homes, multinationals, local businesses or government agencies in which these computers are being sold and what is the percentage share of each segment?

Though the Pakistani computer market is still in its nascent stage, the diversity in computer sales is encouraging. Households represent the largest segment in computer sales across the country with a share of 67.95% in computer sales. This is followed by enterprises which depict a share of 27.4% in computer sales while this incidence remains low in government departments at 4.65%.

Since the household segment forms the major chunk of computer sales in Pakistan, a sustained and healthy growth in this indicator is expected in coming years. The base or stock of computers across the country is still quite low as compared to regional economies and the phenomenon of convergence necessitates that, in due time, this gap in the stock of computers will erode thus driving computer sales for many years to come.

As multiple initiatives to digitize the processes of government departments reach fruition, various such departments may also require additional computers to fulfill demand in this regard. The low incidence of computer sales in government departments is indicative to the low level of digitization of government processes and as with other indicators; the private sector seems to have taken lead in this vital indicator as well.

Table 1.4.6: **What are the segments, such as homes, multinationals, local businesses or government agencies in which these computers are being sold and what is the percentage share of each segment?**

Indicator	Figure
% of Enterprises where computer present	77%
Total Enterprises in Pakistan	3,250,000
Total Computers used in Enterprises	2,502,500
% of Households where computer present	22%
Total Households in Pakistan	28,213,166
Total Computers in Households	6,206,897
% of Government Employees using a computer	65.42%
Total Government Employees in Pakistan	650,000
Total Computers used in Government	425,208
Total Computers in Country	9,134,605
% Share of Computer Sales in Enterprises	27.40%
% Share of Computer Sales in Households	67.95%
% Share of Computer Sales in Government	4.65%

Source: Pakistan ICT Indicators Survey, 2014.

$344 Million Pakistani computer market

PRODUCTION

INDICATOR NUMBER 7: **What is the overall size of the computer market in US$? (Computer market is defined as laptops/PCs/Servers/Notebooks/etc. as well as networking equipment and storage, which are to be reported against separately.)**

Size of the Computer Market in All Pakistan ($)	**344 Millions***

(KPMG-Investment in Pakistan, 2013)
*This is the most recent figure available

The size of the computer market is gauged by incorporating the core computer hardware and other ancillary equipment such as networking devices and servers etc. into a time bound, national aggregation. Additionally, the computer market spans a range of computing devices including laptops, PCs and notebooks etc.

The magnitude of domestic computer market in Pakistan is estimated at $334 million for the year 2012. The mode of arriving at this figure involves aggregating sales of computer hardware and accessories across the country for a particular year.

The multifaceted determinants of size of the computer market involve a rapid shift in demographics towards a population which is predominantly young and an increasing digitization of the economy. Both of these factors are likely to sustain an uptrend in computer sales across the domestic market.
Another phenomenon which may underline the magnitude of computer market in Pakistan is internet penetration in the country. As internet becomes more accessible to the wider audience, it is likely to create a greater demand for computer hardware and subsequently computer accessories.

8% average growth rate for Pakistani computer market

PRODUCTION

INDICATOR NUMBER 8: **WHAT IS THE CURRENT GROWTH RATE?**

Over the next five years, the Pakistani computer market is projected to grow at an average rate of 8% per annum. Interestingly, this figure exceeds the growth rate of national output for the same period. This depicts a greater scope and extent of computer usage in the economy as computer hardware becomes adopted at a faster pace.

Two aspects may explain a higher growth rate of the computer market in the country. Firstly, the base for computer hardware in the country is quite low when compared globally. Therefore, any convergence between domestic and international computer market entails a higher domestic growth rate. Secondly, due to the interconnected nature of the computer market, there is likely to be a multiplier effect on the use of computer hardware across other segments of the market. Thus a supplier firm may adopt computer hardware for receiving orders from customers who in turn have also opted for computers as the primary source for placing orders.

(KPMG-Investment in Pakistan, 2013)

25% Pakistani users of internet at work do not use it at home

PRODUCTION

INDICATOR NUMBER 9: WHAT IS THE PERCENTAGE OF USERS WHO USE INTERNET AT OFFICE (OR WORK PLACE) AND DO NOT USE INTERNET AT HOME?

The number of users who use internet at work and do not use it at home represents that segment of the country's population which possesses the requisite skill-set to use the internet but does not employ it domestically. It has important policy implications concerning the penetration of internet across the country. This segment of the public can be easily tapped in terms of increasing internet penetration as they have the basic framework to utilize the internet, but due to a range of issues, do not use this facility at home. Moreover, this segment is quite large in number, with 25% users who use internet at work not using it at home.

This indicator is highly dependent on the type of sector a person is employed in. Those employed in the services sector are more likely to also use internet at home than those employed in the manufacturing sector. Similarly, personnel in the manufacturing sector are more prone to using internet at home as compared to trade sector employees. Simply put, the type of work a person is employed in has important consequences on the extent of ICT usage at home.

Interestingly unlike previous indicators where the size of firm had implications for a particular ICT indicator, in this case size of firm does not explain this phenomenon of not using the internet at home. Across all enterprise sizes (small, medium and large) this indicator remains almost uniform and close to the national average of 25% of such users not using the internet at home. Policy implication of this finding is to treat all enterprise sizes equally when targeting employees in terms of increasing internet penetration.

This indicator does respond to the firm's legal standing. Employees who work in publicly listed companies are more likely to use internet at home in contrast to employees of firms where the legal standing is less formal. This speaks volumes about the profile of individuals who partake in formal activities as being more likely candidates of employing ICT facilities at home. The message for ICT policy makers in this regard is to incorporate the less formal forms of enterprises when trying to boost internet penetration in Pakistan.

Province wise segmentation also sheds some light on this indicator. Punjab and KPK depict a high incidence of employees who also use internet at home as compared to Sindh. Balochistan on the other hand is far below the national mean for this indicator. This is due to the gap in internet infrastructure between 'places of work' and 'places of residence' as is generally the case throughout the province. Any ICT policy framework which aims to increase internet penetration in Balochistan needs to address this gap and should employ a more equitable dispersion of internet infrastructure across Balochistan.

Table 1.4.7: **What is the percentage of users who use internet at office (or work place) and do not use internet at home?**

(Row %)

		If used the internet at work, then did you use the internet at home?	
		Yes	No
All Pakistan		75%	25%
What is the nature of work of this enterprise?	Manufacturing	72%	28%
	Trade	62%	38%
	Services	81%	19%
What is the size of this enterprise (according to number of employees)?	Small (11-50)	73%	27%
	Medium (51-100)	76%	24%
	Large (100+)	76%	24%
Firm's legal status	Shareholding company with shares trade in the stock market	87%	13%
	Shareholding company with non-traded shares	84%	16%
	Sole proprietorship	72%	28%
	Partnership	84%	16%
	Limited partnership	74%	26%
	All others	40%	60%
Province	Punjab	77%	23%
	Sindh	71%	29%
	KPK	86%	14%
	Balochistan	50%	50%

Source: Pakistan ICT Indicators Survey, 2014.

Section 1.5:

ICT IN GOVERNMENT

THIS SECTION REPORTS 7 ICT INDICATORS FROM PAKISTANI GOVERNMENT

58% of Pakistani government employees routinely use computers

ICT IN GOVERNMENT

INDICATOR NUMBER 1: Proportion of persons employed in central government organizations routinely using computers

Use of ICT in central government organizations indicates the level of digitization which may enhance productivity in these crucial establishments and provide windfall benefits to citizens. Among personnel employed in central government organizations in Pakistan, around 57.95% are regular computer users.

Despite numerous initiatives to infuse digital processes in government organizations in the country, major aspects of its workings remain unattended. A rethink of such digitization campaigns is in order as they entail a complete overhaul of not just the ICT infrastructure but require training of key staff accessing these ICT facilities. Only when these complementary regimes are put in place can we expect benefits of ICT use in government to accrue fully in functioning of central government organizations.

Table 1.5.1: **Proportion of persons employed in central government organizations routinely using computers**

Q1. What would be your educated estimate regarding proportion of persons employed in central government organizations routinely using computers?	**2014**
Proportion of persons employed in central government organizations routinely using computers	57.95%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

60.22% of Pakistani government employees routinely use the internet

ICT IN GOVERNMENT

INDICATOR NUMBER 2: **Proportion of persons employed in central government organizations routinely using the Internet**

Gauging the interconnectivity of government organizations with other government functionaries and with public institutions is a complicated task. One means to asses this is to measure the proportion of persons employed in such organizations who routinely use the internet.

The use of internet among central government employees seems to permeate more than the use of computers on a regular basis. 60.22% of such central government employees regularly use the internet. Explaining this phenomenon requires a deeper understanding of government workings including use of mobile phones instead of computers to access the internet. Moreover, some government officials may not find it necessary to use a computer regularly but official work may require use of the internet more frequently.

Government organizations are not immune to the benefits of information acquisition especially from external sources. Correspondingly, a greater number of government organizations in the country are finding it attractive to link their employees to the internet and thus save considerable time and money in relaying information both locally and internationally.

Table 1.5.2: **Proportion of persons employed in central government organizations routinely using the internet**

Q2. What would be your educated estimate regarding proportion of persons employed in central government organizations routinely using internet?	**2014**
Proportion of persons employed in central government organizations routinely using the internet	60.22%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

59.36% of Pakistani government organizations with a LAN

ICT IN GOVERNMENT

INDICATOR NUMBER 3: **Proportion of central government organizations with a Local Area Network (LAN)**

Whereas the use of internet may be a good measure of extent of connectivity with external agents, the same measure for connectivity within the workplace necessitates estimation of Local Area Networking (LAN) usage.
Specifically, 59.36% of Pakistani government organizations employ a LAN. Such organizations may enjoy better coordination between their employees and a more coherent working environment.

Table 1.5.3: **Proportion of central government organizations with a local area network (LAN)**

Q3. What would be your educated estimate regarding Proportion of central government organizations with a local area network (LAN)	**2014**
Proportion of central government organizations with a local area network (LAN)	59.36%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

43.52% of Pakistani government organizations with an intranet

ICT IN GOVERNMENT

INDICATOR NUMBER 4: **Proportion of central government organizations with an intranet**

Use of Intranet also enhances connectivity within the workplace; however, this form connectivity parallels internet protocols. Access is only granted to authorized personnel based on some form of firewall applied on the network.

This form of networking is increasingly gaining popularity even in Pakistani government organizations. However its incidence at 43.52% remains lower than a LAN. However, selective access and a user friendly interface may propel the use of intranet connectivity further in the country.

Table 1.5.4: **Proportion of central government organizations with an intranet**

Q4. What would be your educated estimate regarding Proportion of central government organizations with an intranet	**2014**
Proportion of central government organizations with an intranet	43.52%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

70.67% of internet using Government Organizations use DSL

ICT IN GOVERNMENT

INDICATOR NUMBER 5: **Proportion of central government organizations with Internet access, by type of access**

The benefits of broadband internet use are being realized by most internet using government organizations in the country as illustrated by the composition of internet access type. DSL which provides a dedicated internet link is by far the proffered choice for most government organizations with 70.67% of such organizations using it. Cable net is second with 14.18% of internet using government organizations employing this means of accessing the internet. GPRS, which may be seen as a supplement to other means of access, secures third position among government organizations. Use of dialup technology is fading away with only 3.95% of such government organizations still using this means of accessing the internet.

Since all central government organizations operate predominantly from the federal capital, Islamabad, the city has seen vast improvements in ICT infrastructure (especially pertaining to the internet) so as to facilitate functioning of such government organizations. It is evident that a majority of central government organizations are reaping the benefits of this infrastructure expansion as illustrated by preponderance of DSL internet usage.

Table 1.5.5: **Proportion of central government organizations with Internet access, by type of access**

Q5. What would be your educated estimate regarding proportion of central government organizations with Internet access, by type of access?	**2014**
Proportion of (internet using) central government organizations with Dialup connection	3.95%
Proportion of (internet using) central government organizations with DSL	70.67%
Proportion of (internet using) central government organizations with GPRS	5.72%
Proportion of (internet using) central government organizations with Cable Net	14.18%
Other types of access	5.48%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

74.55% Pakistani central government organizations have a web presence

ICT IN GOVERNMENT

INDICATOR NUMBER 6: **Proportion of central government organizations with a web presence**

The predominant trend among central government organizations in the country is to maintain a web presence, the figure being 74.55% with a web presence. This allows the citizens more accessibility towards these government organizations while also allowing such organizations to project their work into the public domain.

Emphasising on solely having a web presence may not be enough. Any form of content available online, especially that pertaining to central government organizations, needs to be frequently updated and maintained for increased relevance in the public sphere. Nevertheless it seems that most of the government functionaries are availing domain space online and therefore this approach should be further solidified by requiring regular maintenance of domain space to facilitate the public in accessing these government organizations.

1.5.6: **Proportion of central government organizations with a web presence**

Q4. What would be your educated estimate regarding proportion of central government organizations with a web presence	**2014**
Proportion of central government organizations with a web presence	74.55%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

2002 saw the start of E-Government in Pakistan

ICT IN GOVERNMENT

INDICATOR NUMBER 7: Selected Internet-based services available to citizens, by level of sophistication of service

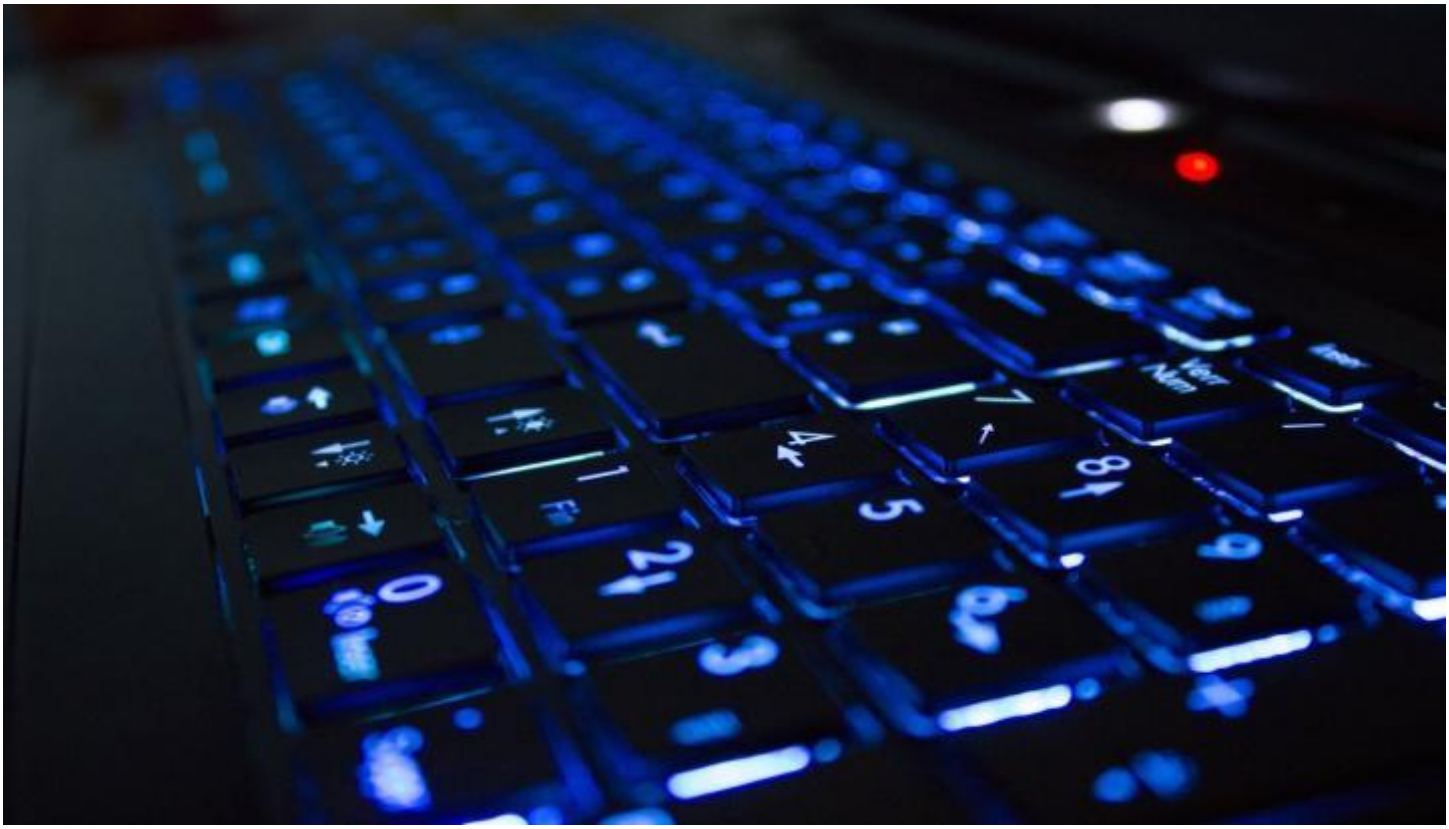
The GoP, in collaboration with Ministry of IT (MoIT) and various stakeholders initiated the e-governance initiative in the year 2002. Since then numerous e-governance projects have seen fruition, designed to induce transparency and ease of access for citizens to government functionaries as illustrated in the table above.

Numerous roadblocks mar the progress of these initiatives including lack of adoption of ICT among government functionaries themselves, infrequent updating of e-records, bureaucratic hindrances etc. In spite of these challenging scenarios, provision of e-governance to citizens of the country is advancing at a steady pace and may not be reversible for the foreseeable future

A more coherent e-governance policy entails taking on board diverse interest groups and stakeholders for inclusive advancement of such initiatives. It is also deemed necessary that citizens be informed about these initiatives allowing them to fully reap the benefits of a faster and lucid interaction with government departments at all levels.

Selected Internet-based services available to citizens	Level of sophistication
Hajj Applications	Online processing of hajj applications and status tracking for arrangements for applicants
E-Enablement of Senate & National Assembly of Pakistan	Upgrading of existing network, hardware and applications so as to make available the proceedings of the National Assembly to the parliamentarians at their work places as well as to disseminate information on proceedings of the House to the citizens.
E-services at Securities and Exchange Commission of Pakistan (SECP)	Online document submission to SECP especially pertaining to registration of a company
Automation of Estate Office	Ensuring transparency and just process of allotments to concerned citizens and transfer of governmental projects
Development of Urdu Lexicon	Machine translation & text to speech software for Urdu language
Online Legal Services	Online access to statutory case laws at district bar associations
Automation of Patent Office, Karachi	Development of customized applications for automating the internal business processes of Patent Office, Karachi Under Cabinet Division. In addition to this, the Patent Office Web Site will be redesigned for online services for customers and stakeholders.
Automated Remuneration System	Salary disbursement through ATMs
Technical know-how	IT support to provinces and AJK
E-Filing of Tax Returns	Filing of tax returns for FBR

Source: E Government Directorate, GoP



Section 1.6:

ICT AND GOVERNANCE

THIS SECTION REPORTS IS BASED ON THE UN'S GLOBAL E-GOVERNMENT RANKINGS AND ANALYSIS REPORT

ICT AND GOVERNANCE

With large segments of the population deeply engaged with ICTs in many countries, governments have been compelled to adopt these technologies in their operational and service delivery responsibilities. The emergence of ICTs in contemporary social communication and economic production and consumption patterns has necessitated that the state restructure its service delivery operations through adopting ICTs and adapting to them. This trend has given rise to the concept of "e-government", which has become a focal point for enhancing institutional efficiency in public service departments, and enlarging the government's participatory and consultative engagement with its citizens.

As increasing proportions of domestic populations around the world deepen their ICT usage and economic production, consumption and exchange values are tempered through ICT interactions, governmental regulations and policies have to incorporate ICT dimensions to match the corresponding structural changes in society and economy. In developed economies where ICT usage has become deeply embedded in domestic and transnational socio-economic interactions, the concept of e-governance has been extensively analyzed and (re)configured to map its contours. These developments brought about by ICTs have been gaining prominence around the world for developing countries that are in the process of inducing ICTs into their domestic structures. E-government infrastructure is designed to be engaging, responsive, inclusionary, consultative, and citizen-centric. Moreover, the induction of ICTs in governments is aimed at increasing institutional efficiency in governmental functions by providing citizens with e-solutions and platforms for engaging with the government.

The importance and increasing role of e-government is recognized, captured, and extensively analyzed by the United Nations Department of Economic and Social Affairs. The Department publishes its annual, global e-governments rankings that provide a snapshot of how well national governments are doing in their effort to match the pace of ICT usage and integration in domestic societies and economies. This ranking is underpinned by the UN's conclusion that globally progress has been registered in most countries in online service delivery.[1] These global rankings from 2012 capture Pakistan's performance on e-government development. Further discussion on national e-governance vis-à-vis other countries will be explored in detail in Section 3.

E-GOVERNEMENT: DEVELOPMENT INDEX

The United Nation's E-Government development index (EGDI) ranks countries based on their progress in developing and embedding e-governance services in the public sector. The ranking is based on an accelerating recognition by the most active and advanced ICT countries that e-government must progress beyond service delivery, and move towards a "framework for smart, inclusive, and sustainable growth for future generations."[2] The EGDI development index is a weighted average of three normalized scores in the most important dimensions of e-government: scope and quality of online services, development status of telecommunication infrastructure, and inherent human capital.[3] The 2012 EGDI score and ranking for Pakistan is given in the Table below:

[1] United Nation's E-Government Survey 2012
[2] UNDESA: World e-government rankings p.10
[3] UNDESA: World e-government rankings

Table 1.6.1: **E-Government Ranking 2012**

	E-government Development Index		World E-government Ranking	
	2010	2012	2010	2012
Pakistan	0.2755	0.2823	146	156

Source: UNDESA: World e-government rankings

These figures indicate that Pakistan currently ranks at the lower end of the global e-government index. In 2012, the country was ranked at 156 (out of 193) on the World E-government ranking. The 2012 ranks saw Pakistan slip 10 places down on the index from 2010, when it was ranked 146 in the global rankings. Although a slight improvement was recorded in the national EGDI between 2010 and 2012 – from 0.2755 in 2010 to 0.2823 in 2012 – the index ranks countries according to comparative performance on this indicator. During the same period, other developing countries performed better than Pakistan's marginal improvement in e-government development, which translated into an overall dip in the country's international e-government ranking.

E-GOVERNEMENT: E-PASSPORT

While Pakistan's global e-government ranking in 2012 emphasized the substantial need to improve e-governance in the country, the country made an impressive advance in one area: e-passports. The Ministry of Interior and the National Database and Registration Authority (NADRA) introduced a chip-based e-passport for Pakistani citizens.[4] This chip enabled passport made Pakistan one of the first countries in the world to issue the "Multi-biometric e-passport" compliant with ICAO standards. This passport secures the identity of Pakistani citizens and provides well-developed security features. These security features on the data pages are supported by sophisticated technology and business logic, which makes the passport a cutting-edge, ICT-based e-government initiative. Pakistan's adoption of the e-passport represents the adoption of a technology from the frontiers of research and development in ICT.

The secure and modern e-passport highlights the national recognition for transforming government service delivery and operations through adopting ICT-based solutions. However, the e-passport also serves to emphasize the inherent disparity in the overarching e-government structure in the country. This case study highlights the tale of opposing performances in e-governance in the country. While most advanced e-governments have begun integrating different tiers of government administration and services into an interconnected, seamless governmental service delivery portal, Pakistan's e-passport project shows the variable pace of ICT adoption within government bodies and organizations. Furthermore, the e-passport initiative also serves to show the current state of e-government and e-governance initiatives in the country, where the most cutting-edge ICT technologies have been actively embraced by one institution, while other government organizations still lack basic and operational online information portals. This reality is aptly reflected in Pakistan's overall global e-government ranking. To improve its performance in e-government, initiatives such as the e-passport must be actively absorbed and distributed evenly throughout the official government infrastructure to create a modern e-governance mechanism.

E-GOVERNEMENT: E-PARTICIPATION

Pakistan's e-government track record indicates that the Government has largely remained sluggish in actively inducting ICTs into the universe of its operations and jurisdiction. The UN's e-government ratings are disaggregated further to provide statistical details on the extent of e-participation – engagement between

[4] Ibid.

the government and citizens where the government becomes an active facilitator of information, while the citizens become active stakeholders in consultative engagement with the government.[5] Most advanced countries around the world are able to foster domestic e-participation that contributes to sustainable development and the socio-economic uplift of the domestic population. The extent of interactive engagement between governments and citizens is an important indicator of the quality of e-governance in the country. The UN's e-participation index is composes of three stages, namely e-information, e-consultation, and e-decision making. Pakistan's 2012 e-participation ranking is shown in the table below:

Table 1.6.2: **E-Participation Index 2012**

	E-information	E-consultation	E-decision making	Total
Pakistan	**50**	**8**	**0**	**11%**

Source: E-Government Survey 2012

Pakistan is currently ranked in the cohort of countries with low e-participation penetration (1%-33%). This is lower than Sri Lanka, Maldives and India according to the United Nations e-government release (2012). Countries with well-established e-government structures experience a high degree of engagement between the citizens and the government. More specifically, the government plays an active role in providing and expanding access to information as the first step in increasing the penetration of e-participation. This increased access to information must be followed by a consultative interaction between the citizens and the government. When such consultations are actively included in official policy decision-making, citizens become active and involved stakeholders in national, provincial, and local policies. Crucially, the e-participation conceptual framework has important implications for democracies – especially young, transitional democracies like Pakistan. Citizen participation in and engagement with the governance process nourishes and strengthens the democratic process and institutions.

Given Pakistan's current internet user penetration (9%), as well as the total number of enterprise actively using the internet in the country, bringing government services and departments online can enhance engagement between the Government of Pakistan and the citizens. Inducting incremental improvements in the e-government infrastructure can also bring additional advantages, beyond increased engagement. Current operational inefficiencies and corrupt practices in governmental departments and bodies can also be erased by bringing essential services and operations online. However, at present the country's e-government infrastructure and initiatives require significant improvements in quality and scope. To advance in ICT usage, as well as extract the social, political, and economic potential, the Government of Pakistan should ignite its vision of expanding ICT usage in the country by incorporating ICT services in its own operations.

[5] Ibid.

Section 2:

COMPARATIVE ANALYSIS OF CURRENT ICT LANDSCAPE VIS-À-VIS BASELINE STUDY

Baseline Study: National Study on Critical Indicators of Information Technology, 2001-Submitted by Gallup and KPMG

INTRODUCTION

Note: Wherever 2001 figures are reported in this section, the source is Gallup-KPMG IT Study 2001

Section 2: Comparative Analysis of Current ICT Landscape vis-à-vis Baseline Study

2.1 INTRODUCTION

The Gallup-KPMG study on ICT landscape *(commissioned by Ministry of Science and Technology)* was conducted in 2001. That study was the first formalized methodological foray into assessing and analyzing ICT indicators in Pakistan. Back in 2001, this objective made the study a crucial first viewing of the ICT landscape in the country. The findings reported and disseminated through that study continue to function as a broad benchmark for various ICT indicators in Pakistan.

The ICT Indicators Survey conducted by Gallup Pakistan in 2014 has been built on that foundation, and delved deep into various ICT indicators in their current and technologically updated form. One of the objectives of this study was to do a thorough analysis of shifts in ICT indicators in Pakistan. This analysis is to build a comprehensive panoptical view of the progress made by Pakistan in Information and Computing Technologies over the last decade and a half.

This section will undertake the aforementioned core objective by conducting a longitudinal analysis of some of the indicators that were benchmarked by the 2001 Gallup-KPMG study. Two important caveats must be placed on making interpretations for further analysis from this section. First, the 2001 study was the first of its kind in Pakistan on ICT dynamics. This implied that the study undertook research and perusal of ICT indicators through a broad lens. Consequently, the analysis available in the baseline study has a broad scope, which must be tied to the current study with utmost care and deliberation. Second, the technological infrastructure within ICT landscape has changed radically over the last decade. These inevitable and continually occurring changes have rendered some of the technical indicators and metrics available in 2001 obsolete. Therefore, the current longitudinal comparative analysis can only be conducted where uniform indicators – with a common and consistent technological vocabulary and logic – are available in both studies.

With these important considerations in place, the comparative analysis in this Section should help the reader understand the progress and changes that have taken root in Pakistan's ICT landscape since 2001.

2.2 BACKGROUND OF THE GALLUP-KPMG NATIONAL STUDY ON CRITICAL INDICATORS OF INFORMATION TECHNOLOGY – 2001

The Gallup-KPMG National Study on Critical Indicators of Information Technology was conducted in 2001 for the Ministry of Science and Technology. The study was forged with the Ministry's overarching goal of technological development and improvements. At the time of the study's inception, the Ministry of Information and Technology had undertaken a number of projects to focus on IT development in the country through the National IT Action Plan. One of crucial hurdles in the effective implementation and rolling out of the strategy was the absence of comprehensive baseline parameters to gauge and assess various IT indicators and dynamics in the country. The 2001 Gallup-KPMG study was designed and undertaken to fill this critical lacuna in ICT policymaking and discourse in the country.

The 2001 Gallup-KPMG study, which is to be used as the baseline document on ICT indicators in the country for the current study, was undertaken to achieve two primary objectives:

- Take a snapshot picture of ICT environment in the country (baseline statistics)
- Identifying critical indicators, which could be used to measure the level of implementation of the National IT Policy and assess its overall impact

These objectives set the scope for the baseline ICT parameter in the country. The 2001 study was built upon three sequential methodological phases:

- Desk Research on ICT landscape in Pakistan
- Exploratory Research comprising two pillars:
    - 35 in-depth interviews with industry leaders
    - 15 focus groups of IT Professionals
- Quantitative Studies comprising of comprehensive surveys conducted in seven cities of the country (namely Karachi, Lahore, Rawalpindi/ Islamabad, Faisalabad, Hyderabad, Peshawar, and Sialkot). These surveys covered the following ground across the country:
    - Households (7,000 interviews to determine the incidence of computers and 2,215 interviews with computer literates in computer-owning households)
    - 35 Internet Service Providers
    - 48 Software Houses
    - 110 Hardware Vendors
    - 303 User Organizations (with at least 10 employees and 4 PC's)
    - 406 Educational institutions (also) imparting IT Training
    - 391 Senior Computer Professionals belonging to the above sector.

The 2001 Gallup-KPMG study understood the limitation imposed by novelty in a new research landscape. The original researchers and analysts in the 2001 benchmark study asserted that they "ventured into a territory whose contours were totally unknown", and therefore readers and analysts should take care in making analytical interpretations from the findings presented in that publication. The first move into a new research realm is burdened with the limitation of novelty i.e. the research has to contend with the unfamiliarity of a new terrain, and therefore a comprehensive conceptual understanding of the research realm must first be established. With this limitation in mind, the 2001 report predicted further refinement of the approach and understanding in future waves of the study. Given this limitation in the 2001 study, this current study reflects that evolutionary refinement in research – as reflected in the comprehensive assessment of a range of ICT indicators in Pakistan.

The 2001 Gallup-KPMG study, although unique and important in its scope, was also characterized by certain methodological limitations. **For instance, the study was exclusively restricted to seven cities across Pakistan, which missed a large cross-section of the country's rural population out of the picture. Notably, no urban center from Balochistan was included in the 2001 study.** These inadequacies caution against using the 2001 Gallup-KPMG study as a sound and complete benchmark analysis of ICT indicators in the country. Crucially, these observations imply that the comparative longitudinal assessment that is to follow this discussion must be undertaken and analyzed with care.

2.3 BACKGROUND OF THE PAKISTAN ICT INDICATOR SURVEY – 2014

The Pakistan ICT Indicator Survey – 2014 was carried out by Gallup Pakistan in conjunction with Ministry of Information and Technology (National ICT R&D Fund). Building on the 2001 baseline study, this research wave was designed to provide a detailed and holistic picture of the ICT landscape in the country. More precisely, the core objective of this study is to gauge and analyze the quantitative and qualitative changes in ICT indicators in Pakistan.

Since 2001, a number of changes have taken place in the ICT sphere internationally and locally, the most significant ones being the large scale proliferation of mobile telephony and the introduction of Broadband Internet. Pakistan has not remained immune to these changes, as the national ICT landscape is qualitatively different than in 2001. Therefore, this study was undertaken to establish a revamped set of baseline indicators in order to:

- Analyze the progress made in the ICT sector during the last decade,
- Provide the country's leaders and policymakers with an updated data set to enable them to formulate policies and strategies for ICT-enabled growth for social inclusion and cohesion and economic growth; and for monitoring and evaluating the impact of ICTs on economic and social development,
- Benchmark our progress against other developing countries and societies,
- Identify any areas or geographies which lag far behind

These objectives are at the foundation of this study. Crucially, the data gathered and presented in this report provides meaningful longitudinal comparative metrics. When juxtaposed with some of the 2001 indicators identified in the Gallup-KPMG report, the qualitative changes in Pakistan's ICT landscape over the last decade or so begin to take shape. The next few pages will provide these longitudinal comparisons.

Note: As the preceding discussion emphasizes, comparisons can only be drawn on metrics that have remained stable since 2001, and were outlined in the Gallup-KPMG report. Changing technologies, as well as affiliated services in the ICT sector have rendered some of the indicators from 2001 redundant for comparison.

227% is the growth of internet penetration in the country since 2001

2.4 INTERNET: 2001-2014

HOUSEHOLD INTERNET CONNECTIONS/SUBSCRIBERS

In 2001, the Gallup-KPMG ICT survey quantified the number of total household internet connection in ten major cities of the country, as well as 11 additional cities. The total number of internet connections in 2001 was 446,460, out of which the number of active internet connections was 286,857. The distribution of these internet connections in 2001 was as follows:

Table 2.1 **Number of internet connection in 2001**

Cities	CONNECTIONS	
	Total	**Active**
Karachi	249,912	168,714
Lahore	121,295	72,743
Islamabad	22,550	12,496
Rawalpindi	15,610	9,310
Multan	7,510	5,410
Faisalabad	7,116	5,118
Hyderabad	4,500	2,799
Gujrat	3,400	2,700
Sialkot	3,612	2,112
Gujranwala	5,815	2,015
Other Cities (Jehlum, Sargodha, Kharian, Thatta, Peshawar, Sheikhupura, Abbottabad, Nowshera, Rahim Yar Khan, Mardan Sahiwal)	5,140	3,440
Total	**446,460**	**286,857**

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology – 2001

Data gathered and collated in Gallup ICT Indicator Survey provides updated figures for total number of internet connections in Pakistani households in 2014. Current research indicates that 8% of all households in the country reported having internet access. Given that there are 26,419,591 households in the country, this amounts to **2,113,567** households with internet connections. The detailed breakdown of internet access in Pakistani households is presented in the table below:

Table 2.2 **Internet access at home in 2014**

(Row %)

		Q17. Do you have internet access at your home (regardless of whether it is used or not)?	
		Yes	**No**
All Pakistan		8%	92%
Gender	**Male**	9%	91%
	Female	7%	93%
Age of the Respondent	**Under 30**	12%	88%
	30 – 50	5%	95%
	51+	5%	95%
Education	**Low**	1%	99%
	Medium	7%	93%
	High	31%	69%
HH Income	**Low (Quintile #1)**	2%	98%
	Medium (Quintile #2)	1%	99%
	High (Quintile #3,4,5)	12%	88%
Location	**Urban**	17%	83%
	Rural	4%	96%
Province	**Punjab**	8%	92%
	Sindh	14%	86%
	KPK	4%	96%
	Balochistan	7%	93%

Source: Pakistan ICT Indicator Survey, 2014

However, the comparison is more realistic if only urban centers in the country are taken into account – as the 2001 Gallup-KPMG study was based on major cities in the country. If this parameter is applied, then the total number of household internet connections in Pakistan's cities is:

Total number of urban households in the country (2014): **8,607,579**

Proportion of urban households with internet connections: **17%** (from current research)

Total number of household internet connections in urban centers (2014): **1,463,288**

Since 2001, there has been significant growth in internet penetration rates in Pakistan. The growth (in absolute numbers) is as follows:

TOTAL NUMBER OF HOUSEHOLD INTERNET CONNECTIONS IN CITIES

2001	2014
446,460	**1,463,288**

The table shown above provides a clear indication of the growth in internet penetration in Pakistan since 2001. Between 2001 and 2014, internet connections penetration in urban Pakistani households increased by **227%**. This substantial increase shows that internet connectivity is gathering pace, and that a greater share of the population has access to internet.

Notwithstanding this explosive increase in internet connectivity throughout the country, large swathes of the country's population are still offline. Overall, only 8% of all households in the country have internet access, which puts the growth rate into perspective. 92% of all households are still disconnected from the internet. This remarkable interplay between longitudinal growth and current internet penetration accentuates the substantial room for expansion and growth ICT in the country in general, and internet connectivity in particular.

680% is the growth in total number of internet users in the country

2.4 INTERNET: 2001-2004

TOTOAL NUMBER OF INTERNET USERS IN THE COUNTRY

The Gallup-KPMG benchmark study in 2001 provided a rough estimate of the total number of internet users in the country. That estimate provided a composite number of internet users who accessed and used internet in various locations, including households – which had the biggest proportion of internet users by location. The precise data from that study is presented below:

Table 2.3 **Segregation of Internet users in Pakistan 2001**

Households	**586,000**
Cyber Cafes	325,000
Offices	233,000
Educational Institutions	147,000
Total	**1,291,000**

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology – 2001

Section 2: Comparative Analysis of Current ICT Landscape vis-à-vis Baseline Study

In 2001, a tiny fraction of the country's population had access to internet. Of the total internet-using population in 2001, 45% (586,000) used internet at their home. Similarly, cyber cafes were an important site for accessing internet for Pakistanis in 2001 (25%). Offices and educational institutions provided internet access to 18% and 11% of the population.

This benchmark data on the total number of internet users in the country can now be reassessed from the data gathered in 2014. The following table provides a detailed breakdown of the total number of internet users in the country:

TOTAL NUMBER OF INTERNET USERS	
2001	**2014**
1,291,000	**15,313,846**

The total growth in the number of internet users in the country as follows:

The numbers indicate a clear and strong upward trend in internet growth and penetration trajectory in the country. Between 2001 and 2014, the total number of internet users in the country increased by a substantial **1086%**. This represents a massive growth in internet connectivity across the country.

This comparative longitudinal growth analysis requires further crystallization to reconcile the base compared. The number of total internet users in the country, as estimated in the 2001 Gallup-KPMG report, was extracted from an urban-based survey. This conditionality can be applied towards the 2014 data discussed in this report. When only urban internet users are taken into account from the 2014 Gallup ICT Survey, the following growth trend emerges:

TOTAL NUMBER OF INTERNET USERS IN CITIES	
2001	**2014**
1,291,000	**10,063,384**

When the base is restricted to urban center in the country, the total growth in the number of internet users in the country still retains its healthy outlook. Between 2001 and 2014, the total number of internet users in Pakistani cities grew by an impressive **680%**. In absolute numbers, 8,772,384 additional internet users have gone online in Pakistani cities.

The explosive growth in the total number of internet users in the country has to be understood in the context of the current magnitude of the ICT landscape in the country. Although the number of internet users has increases substantially since 2001, the total number still represents a small portion of the overall population of the country. Critically, given the total population size of the country, internet penetration rate, internet accessibility, and connectivity are set to increase by a substantial magnitude.

39% is the increase in internet connectivity in Pakistani households

2.4 INTERNET: 2001-2004

LOCATION OF INTERNET USE

The location of internet use is an effective proxy for understanding the quality and magnitude of internet penetration in a country. In general, greater internet access in households is indicative of deeper internet penetration in a society.

The 2001 Gallup-KPMG benchmark study on National ICT Indicators provides a rough breakdown of location-based internet usage in the country. That publication considered four sites that provided internet access to Pakistani citizens in 2001: Households, Cyber Cafes, Offices, and Educational Institutions. The proportions of location-specific internet usage in 2001 were:

Table 2.4 **Location of Internet use in 2001**

(Column %)

Households	**45.39%**
Cyber Cafes	25.17%
Offices	18.04%
Educational Institutions	11.38%
Total	**100%**

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology – 2001

This table indicates that most Pakistanis accessed internet at home. However, a significant proportion of the internet using population accessed the internet through cyber cafes. These public commercial sites provided paid internet access to the public. A quarter of all internet users were accessing internet through this channel, which implies that for these internet users, internet accessibility was infrequent.

The 2014 Gallup ICT Indicator Survey provides an update on these benchmark figures for location-based internet usage. The changes reflected below provide quantitative and qualitative insights into changing internet penetration and usage patterns in the country. In 2014, Pakistani internet users accessed internet at the following locations:

Table 2.5 **Location of Internet use in 2014**

(Multiple Response)

		Q22. If yes, then where do you use the internet?							
		Home	Work	Place of education	Another person's home	In a public area	Cyber cafe	Through the mobile phone	Others
All Pakistan		78%	11%	11%	12%	2%	7%	12%	0%
Gender	**Male**	71%	15%	11%	9%	3%	9%	12%	1%
	Female	94%	1%	11%	17%	0%	2%	14%	0%
Age of the Respondent	**Under 30**	78%	8%	15%	10%	1%	7%	16%	0%
	30 – 50	77%	18%	3%	14%	3%	8%	4%	1%
	51+	88%	13%	0%	25%	13%	13%	0%	0%
Education	**Low**	81%	0%	6%	13%	0%	13%	25%	0%
	Medium	68%	7%	8%	10%	1%	7%	20%	1%
	High	83%	14%	13%	13%	2%	7%	7%	0%
HH Income	**Low (Quintile #1)**	50%	7%	0%	14%	7%	14%	36%	0%
	Medium (Quintile #2)	54%	23%	8%	31%	15%	15%	0%	0%
	High (Quintile #3,4,5)	81%	10%	13%	12%	0%	7%	11%	0%
Location	**Urban**	84%	13%	15%	13%	0%	6%	11%	0%
	Rural	68%	7%	5%	10%	5%	10%	15%	1%
Province	**Punjab**	66%	13%	11%	18%	2%	9%	11%	0%
	Sindh	88%	11%	14%	11%	0%	8%	17%	0%
	KPK	89%	0%	21%	0%	5%	0%	0%	5%
	Balochistan	86%	7%	0%	0%	2%	5%	14%	0%

Source: Pakistan ICT Indicator Survey, 2014

In order to make a reasonable and justified comparative assessment on this metric, the same four locations – as the 2001 Gallup-KPMG benchmark study – should be considered. In 2014, the location of internet usage in the country was as follows (multiple answers permitted):

Table 2.6 **Segregation of Internet use in 2014**

(Multiple Response)

Households	**78%**
Cyber Cafes	7%
Offices	11%
Educational Institutions	11%

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology – 2001

When juxtaposed, the changes in location based internet usage in the country are as follows:

	2001	2014
Households	**45%**	**78%**
Cyber Cafes	**25%**	**7%**
Offices	**18%**	**11%**
Educational Institutions	**11%**	**11%**

When only urban centers are considered, the following changes have occurred in location-based internet usage in the country over the last decade or so:

	2001	2014
Households	**45%**	**84%**
Cyber Cafes	**25%**	**6%**
Offices	**18%**	**13%**
Educational Institutions	**11%**	**15%**

These comparative changes have a number of crucial implications for internet usage, penetration, and accessibility in the country. First, there is a clear increase in internet penetration in households across the country – and especially in cities. This change reflects two concurrent and crucial features of internet penetration and accessibility in the country: a greater proportion of Pakistanis are accessing internet at home; internet accessibility is improving, as more Pakistani internet users can now go online within the comfort of their homes.

Second, internet connectivity via cyber cafes has declined considerably since 2001. When juxtaposed with increasing internet accessibility in households, this implies that internet is more widely available to Pakistani internet users. Cyber cafes charge users for internet usage in public settings. The transfer of internet accessibility into Pakistani homes from cyber cafes indicates that internet services are now more readily and universally available in Pakistani households.

Third, the types of locations used by Pakistani internet users have diversified away from the four original sites assessed in the 2001 Gallup-KPMG research analysis. Driven by technological changes that have increased mobile connectivity, Pakistanis are now able to access the internet via their cellular phones, through internet services in a greater proportion of Pakistani households, via publicly available Wi-Fi networks, and other forms of connections. This increasing diversity in the typology of internet connections is in itself a testament to the significant technological changes and improvements that have occurred in internet usage and prevalence in the country.

47% more Pakistani internet users use the internet for email communications in 2013

2.4 INTERNET: 2001-2004

TYPES OF ACTIVITIES ON THE INTERNET

The types of activities undertaken by users on the internet provide a window into the online behavioural patterns and preferences in a society. Between 2001 and 2014, the increase in internet prevalence in the country has been accompanied by an expansion in the range of activities undertaken online.

In general, greater exposure to the web translates into more advanced and "deeper" usage behaviour. Advanced and experienced internet users undertake a wider variety of activities online, which reflects an increasing reliance on the internet to accomplish everyday tasks.

The 2001 Gallup-KPMG study on National ICT Indicators revealed the most widely undertaken activities by Pakistani internet users. The results from that study are presented below:

Table 2.7 **Main purpose of using the Internet in 2001**

Most Frequent Use	Households
Chatting	51%
E-mail	17%
International calling	17%
Browsing	6%
Fax	0%
E-commerce	0%
Others	9%

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology – 2001

These results indicate that the most widely pursued activity on the internet in 2001 was Chatting – which was pursued by 51% of internet users in the country. Emails were sent and received by 17% of all internet users in the country. Browsing constituted a minor 6% of all online activity in the country, while E-commerce was not an activity pursued by internet users in the country.

These results can be juxtaposed with the more detailed activity analysis conducted through the Gallup ICT Indicator Survey in 2014. The results from this survey are presented below:

Table 2.8 **Main purpose of using the Internet in 2014**

(Multiple Response)

		Q25. In the past 12 months, what was the main purpose of using internet?									
		For downloading	For education purposes	For sending and receiving email	To gain information about goods and services	To gain information about health	To gain information about government institutions	To gain telephone access on the internet that is VOIP	Dealing with government organizations	Internet banking	To buy goods and services (online shopping)
All Pakistan		72%	67%	60%	53%	40%	35%	16%	12%	9%	6%
Gender	**Male**	77%	64%	63%	46%	36%	35%	8%	13%	7%	4%
	Female	60%	73%	54%	69%	50%	37%	36%	8%	14%	13%
Age of the Respondent	**Under 30**	74%	74%	58%	53%	41%	35%	17%	11%	10%	6%
	30 – 50	72%	49%	66%	52%	37%	38%	13%	13%	7%	8%
	51+	50%	63%	50%	50%	38%	13%	25%	13%	0%	0%
Education	**Low**	87%	40%	40%	53%	33%	13%	7%	0%	20%	0%
	Medium	79%	51%	50%	40%	29%	27%	14%	7%	5%	5%
	High	67%	78%	67%	60%	46%	42%	18%	15%	10%	8%
HH Income	**Low (Quintile #1)**	86%	57%	43%	29%	21%	36%	14%	14%	14%	0%
	Medium (Quintile #2)	62%	46%	77%	31%	23%	23%	8%	0%	0%	0%
	High (Quintile #3,4,5)	71%	69%	58%	54%	42%	37%	16%	11%	9%	7%
Location	**Urban**	70%	72%	62%	58%	45%	34%	14%	8%	8%	5%
	Rural	75%	58%	57%	44%	32%	38%	20%	18%	11%	8%
Province	**Punjab**	70%	52%	57%	50%	25%	34%	21%	12%	12%	10%
	Sindh	76%	80%	65%	51%	49%	35%	16%	7%	6%	4%
	KPK	74%	63%	89%	58%	89%	47%	16%	47%	11%	11%
	Balochistan	70%	86%	48%	61%	41%	36%	2%	2%	5%	0%

Source: Pakistan ICT Indicator Survey, 2014

The results in 2014 show that Pakistani internet users have graduated to advanced activities online. This diversification in internet usage is also partly explained by the greater range of activities offered online. When results on internet activities are analyzed together the following changes have taken place in online usage patterns and behaviours:

Most Frequent Use	2001	2014
E-mail	17%	60%
International calling	17%	16%
E-commerce	0%	6%

While Browsing constituted only 6% of all internet activities in 2001, this activity has branched off into the following browsing-based activities in 2014:

Most Frequent Use	2014
To gain information about goods and services	53%
To gain information about health	40%
To gain information about government institutions	35%

Additionally, 67% of Pakistani internet users are currently using the internet for educational purposes.

These results are reflective of the changes in internet usage that have taken place in Pakistan over the last 12 years. Pakistani internet users have evolved in the types of activities that they undertake online. As internet has permeated different segments of the society, internet users have become more enmeshed in the various types of informational, educational, and commercial activities offered by the internet. These changes are captured in the current data gathered on the benchmarks established in 2001.

59.44% is the increase in the average monthly expenditure on internet connections in Pakistan

2.4 INTERNET: 2001-2004

AVERAGE MONTHLY EXPENDITURE ON INTERNET

Increasing expenditure on internet connections and services indicates internet users' willingness to access superior internet services to go online. Increasing expenditure on internet connections is an important proxy for ascertaining expansion in internet penetration. The 2001 Gallup-KPMG report, National ICT Indicators, provided an estimation of the average monthly expenditure on internet connections in Pakistan.

The estimate in 2001 was derived by combining the total number of telephone line with each ISP in the country, the average hours used by each telephone line, and the average rate for internet connections in 2001 (Rs. 16/hr.). This analysis showed that in 2001, an average Pakistani household was spending Rs. 715 per month for internet connectivity.[6]

In 2014, the average monthly expenditure on internet in Pakistan has increased. This current report showed in Section 1, that Pakistani internet users are spending an average of US $11.23 per month for fixed broadband internet connections. The following table from Section 1 provides the average monthly fixed broadband tariffs in the country:

Table 2.9 **Fixed broadband internet tariff**

Fixed broadband Internet access tariffs per month in US$, and as a percentage of monthly per capita income		
		Mean
All Pakistan		
	Broadband Internet Access Tariff in US$	$11.23
	As a Percentage of Monthly Per Capita Income	10.69%

Source: Pakistan ICT Indicator Survey, 2014

The average US Dollar to Pak Rupee exchange rate in 2014 was US $1 = Rs. 101.53. At this exchange rate, the average monthly expenditure on internet access in Pakistan during 2014 was Rs. 1140. When juxtaposed with the average monthly expenditure on internet connection in 2001 (Rs. 715 per month), Pakistani internet users were spending **Rs. 415** more on internet access. This change is reflected in the table presented below:

Average Monthly Expenditure on Internet Connections	
2001	**2014**
Rs. 715	**Rs. 1140**

The comparison shows that the average monthly expenditure on internet connections in Pakistan has increased by **59.44%** since 2001. The increase in expenditure reflects a growing appetite for internet consumption in Pakistan. This growing expenditure can be taken as an indication of two primary changes in internet usage patterns in the country: first, increasing willingness and ability by

[6] Source: Gallup-KPKMG National Study on Critical Indicators of Information Technology - 2001

a greater proportion of the population to connect to the internet; two, increasing willingness and ability by a greater proportion of the population to spend more on higher quality internet connections and services.

This increased expenditure on internet access should be seen in conjunction with increased internet access speeds and the expansion of broadband internet networks across the country.

52.75% the percentage increase in the share of branded computers in Pakistani households

2.5 TOTAL PC POPULATION IN THE COUNTRY

The prevalence of computers in different segments of the society provides a strong indication of the level of computerization in an economy. Computers have gradually become increasingly important and visible throughout the country. The 2001 Gallup-KPMG National ICT Indicators report provided estimations of the average ratios of branded and unbranded computers in the country. These ratios reveal the distribution of the total, as well as types of computers in the country in 2001. The table shown below provides the prevalence of branded and unbranded computers in Pakistani households from 2001:

Table 2.10 **Share of branded and unbranded computers in 2001**

(Row %)

Type of Organization	Branded	Unbranded	Total
Households	34,100 **(6.25%)**	511,500 **(93.75%)**	545,600 **(100%)**

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology – 2001

In 2001, unbranded computers were widely prevalent in Pakistani households. 94% (93.75% precisely) of all computers in Pakistani households were unbranded. This typology implies that the computer market was in its nascent stages of evolution, as reflected in the 'disparate nature' of computer hardware used in the country.

The ratios of the type of computers being used in Pakistani households was one of the indicators analyzed in Section 1 of this Report. The Gallup ICT Indicator Survey extracted detailed information from Pakistani households on the typology of computer hardware. The results are re-published below:

Table 2.11 **Share of branded and unbranded computers in 2014**

(Row %)

		Q10. If you have a computer at your home, is it branded or non-branded?		
		Branded	**Non-branded**	**Don't Know**
All Pakistan		54%	37%	9%
Gender	**Male**	52%	42%	6%
	Female	57%	29%	14%
Age of the Respondent	**Under 30**	58%	38%	4%
	30 – 50	49%	36%	15%
	51+	59%	28%	14%
Education	**Low**	49%	28%	24%
	Medium	50%	43%	8%
	High	64%	33%	3%
HH Income	**Low (Quintile #1)**	76%	14%	10%
	Medium (Quintile #2)	63%	24%	13%
	High (Quintile #3,4,5)	54%	40%	7%
Location	**Urban**	59%	31%	9%
	Rural	50%	41%	9%
Province	**Punjab**	56%	33%	11%
	Sindh	60%	33%	7%
	KPK	27%	60%	13%
	Balochistan	86%	12%	2%

Source: Pakistan ICT Indicator Survey, 2014

As the data from 2014 shows, there has been a significant and remarkable shift in the distribution of branded and unbranded computers in the country. Whereas branded computers composed only 6% (6.25% precisely) of the household computer market in 2001, they have become the dominant form of computer hardware in the country in 2014 – 54% of all computers in Pakistani households are now branded. This significant rise in the share of branded computers has come at the expense of a declining share of non-branded computers in the country. Whereas non-branded computers composed 94% of all household computers in the country in 2001, they are now 37% of the household computer hardware in the country. 9% Pakistanis were unaware whether their computers were branded or non-branded in 2014.

Since the 2001 Gallup-KPMG Study was based primarily on large cities in the country, this comparison of branded and non-branded computers in Pakistani households can be rationalized by comparing the ratios of computer hardware in urban centers in 2014. This rationalized urban comparison shows that branded computers have become the dominant format of computer hardware in Pakistani households in 2014. Branded computers were 59% of all computer hardware in Pakistani households in 2014; compared with 6% in 2001. Similarly, unbranded computers were 31% of all household computer hardware in 2014; compared with 94% in 2001.

	2001	**2014**
Branded Computers	6.25%	**59%**
Unbranded Computers	93.75%	**31%**

The increase in the share of branded computers in the country shows a burgeoning and evolving computer market in the country. Whereas in 2001, Pakistani households were predominantly using non-branded computers, they have increasingly migrated to purchasing and using branded computers. This change highlights important implications attached with this indicator. Pakistani computer users are becoming more aware of computing technologies and brands, which is reflected in the majority share of branded

computers in the country. Consequently, the national computer hardware market is responding by integrating global brands and associated quality standards, which are now demanded by the majority of the country's computer users. This transformation in preference for hardware could be partly explained by the increasing prevalence of mobile computing hardware in the country, particularly laptops, which are predominantly manufactured and sold in their branded form.

444% is the rise in total revenues generated by the IT Sector in Pakistan between 2001 and 2013

2.6 THE IT SECTOR: 2001-2014

CONTRIBUTION TO THE NATIONAL ECONOMY

The increasing digitization and computerization of the Pakistani society is accompanied by a concurrent increase in the contribution made by the IT sector to the national economy. Globally, the IT sector has become one of the most pivotal and productive sectors in national economies. Especially in advanced economies, the IT sector makes significant contributions in technological innovation, as well as the national economy – particularly to exports and national GDP.

In 2001, the IT sector was in its nascent evolutionary stage in Pakistan. It had begun making important contributions to the national exchequer, as favourable and facilitative governmental regulations helped in the process. The 2001 Gallup-KPMG National ICT Indicators Report benchmarked the important contributions made by the IT sector to Pakistan's economy. Those estimations are reproduced below:

Table 2.12 **Revenue generated by ICT Sector in 2001**

	2001
Total Revenue Generated	**Rs. 29.835 billion**
Total Contribution to GDP	**Rs. 6.608 billion**

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology – 2001

These figures underline the useful contribution made by the IT sector to the national economy in 2001 – as it progressed through its early developmental stages. Over the last twelve years, the IT sector has withstood challenges from a sluggish national economy, deterioration in the national security situation, the global financial crisis, and the growing energy crisis. Figures from 2014 show that the sector has managed to grow and expand its contribution to the national economy, despite the numerous challenges it has faced. The figures from 2014 reveal the following picture:

	2014
Total Revenue Generated	**Rs. 162.448 billion**[7]

[7] Sources:
ITCN Asia http://www.itcnasia.com/ict-sector-of-pakistan.php
PSEB http://www.pseb.org.pk/industry-overview.html

The figures from 2014 are derived from various reputable sources, given the absence of officially verified and disseminated figure from the government. Notwithstanding this limitation, most external estimates are convergent in their analysis. By 2014, estimates indicated that the financial size of the IT Sector in Pakistan was around USD $ 2.8 billion, of which **USD $1.6 billion** was total revenue. When translated into rupee terms, this shows that remarkable rise in the overall size of the IT sector in Pakistan. More specifically, the total revenue generation between 2001 and 2014 grew by an impressive **444%**. Over the last twelve years (2001-2014) the IT Sector has experienced significant growth, despite facing numerous obstructive challenges and limitations from domestic and global challenges.

2.7 IT AND ENTERPRISES: 2001-2014

TYPES OF ACTIVITIES UNDERTAKEN ON INTERNET IN ENTERPRISES

The advent and integration of computers and internet have radically altered the 21st century workspace by re-engineering the information and communication paradigm. The induction of computers, and associated networking technologies, has created local, national, and international webs between enterprises and their markets, thereby creating deep, extensive, and cross-cutting economic linkages. In particular, the internet has been critical in triggering these structural changes in the enterprises. The types of activities undertaken on the internet illustrate the importance of internet connectivity and communication for enterprises.

The 2001 Gallup-KPMG National ICT Indicators Report surveyed urban enterprises in the country, and asked respondents with internet connectivity at workplace to rate the various types of activities they undertake on the internet. The results from that report are reproduced below:

Table 2.13 **Internet Activities undertaken by Enterprises in 2001**

Email	**77%**
Fax	48%
Surfing	25%
International calling	21%
Chatting	12%
E-commerce	06%
Research	05%
Internet Shopping	04%
Information	04%

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology – 2001

These results from 2001 show that Pakistani enterprises with internet connections in 2001 were primarily using the internet for communication purposes i.e. emails and faxes. The remaining range of activities was only undertaken by a minority of Pakistani enterprises. These results can be juxtaposed with the results from the 2014 Gallup ICT Indicator Survey, which provides a detailed breakdown of the major types of activities undertaken on the internet by Pakistani enterprises. These results from Section 1 of this report are reproduced below:

Table 2.14 **Internet Activities undertaken by Enterprises in 2014**

(Multiple Response)

		Sending and receiving emails	Getting information about goods and services	Getting information from government/public organizations	Performing internet banking or accessing other financial services	Dealing with government organizations/public authorities
		Row %	Row %	Row %	Row %	Row %
All Pakistan		54%	37%	8%	16%	5%
S1. What is the nature of work of this enterprise?	**Manufacturing**	52%	41%	8%	13%	4%
	Trade	54%	44%	6%	26%	4%
	Services	56%	31%	8%	17%	6%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	59%	34%	9%	22%	6%
	Medium (51-100)	52%	39%	9%	12%	3%
	Large (100+)	52%	37%	6%	16%	5%
Province	**Punjab**	50%	39%	8%	17%	4%
	Sindh	63%	34%	8%	18%	7%
	KPK	51%	39%	0%	3%	0%
	Balochistan	42%	0%	10%	10%	0%

Source: Pakistan ICT Indicators Survey, 2014.

In addition, Pakistani enterprises with internet connections have integrated internet-based services and technologies for two core business pursuits: sending and receiving orders for goods and services over the internet. The proportion of Pakistani enterprises with internet connections, receiving orders for goods and services in 2014 is as follows:

Table 2.15 **Proportion of Enterprises receiving orders via Internet**

(Row %)

		Receiving orders for goods and services	
		Yes	**No**
All Pakistan		26%	74%
S1. What is the nature of work of this enterprise?	**Manufacturing**	33%	67%
	Trade	32%	68%
	Services	17%	83%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	17%	83%
	Medium (51-100)	30%	70%
	Large (100+)	35%	65%
Province	**Punjab**	30%	70%
	Sindh	36%	64%
	KPK	11%	89%
	Balochistan	2%	98%

Source: Pakistan ICT Indicators Survey, 2014.

The proportion of Pakistani enterprises connected to the internet, sending orders for goods and services in 2014 is as follows:

Table 2.16 **Proportion of Enterprises sending orders via Internet**

(Row %)

		Sending orders for goods and services	
		Yes	**No**
All Pakistan		35%	65%
S1. What is the nature of work of this enterprise?	**Manufacturing**	43%	57%
	Trade	40%	60%
	Services	24%	76%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	21%	79%
	Medium (51-100)	39%	61%
	Large (100+)	49%	51%
Province	**Punjab**	42%	58%
	Sindh	43%	57%
	KPK	16%	84%
	Balochistan	2%	98%

Source: Pakistan ICT Indicators Survey, 2014.

These results from 2001 and 2014 provide a clear indication of the changes in how Pakistani enterprises use the internet. Whereas emails (77%) were the single most important activity undertaken by Pakistani enterprises in 2001, they have diversified their usage of the internet in 2014. Emails are still an important type of activity undertaken by Pakistani enterprises in 2014 – 54% of all internet-connected enterprises use the web for communication. However, important changes have occurred in other dimensions. For instance, where e-commerce was only undertaken by 6% of Pakistani enterprises in 2001, today 26% of internet-connected enterprises received orders for goods and services online, while a significant 35% reported sending orders for goods and services via the internet. Similarly, where only 4% of internet-connected enterprise sought information on the internet in 2001, this use has expanded to 37% of internet-connected enterprises in 2014.

This comparative analysis shows that Pakistani enterprises have evolved in the types of activities undertaken on the internet. This evolution is reflective of a deeper business integration of the internet into modern enterprises. Pakistani enterprises are moving ahead on the global information technology integration trajectory in businesses. Over the last 12 years, internet is increasingly used by Pakistani enterprises for core businesses activities, which signals the gradual structural assimilation of IT technologies in Pakistani businesses.

SECTION 3

ICT INDICATORS IN PAKISTAN: GLOBAL COMPARISONS

INTRODUCTION

3.1 INTRODUCTION

Computing technologies, powered by the internet, have generated critical changes in societies and economies around the world. The global spread of computers and internet has transformed the developmental landscape in countries. The changes unleashed by the twin forces of computers and internet have made reconstructed social linkages – particularly by changing the nature of social communication. Additionally, the modern economies have been re-wired with the technological paradigms and vocabulary incepted by digitized economic transactions. The global financial system, structured primarily on the digital paradigm, is an apt illustration of the networked communication technologies sustaining our modern economies. Crucially, these worldwide changes have made it possible to compare and evaluate local, national, regional, and global levels of ICT indicators. Moreover, this evaluative comparison helps identify the contours of this transformed communications landscape in each society, thereby leading into a global positioning analysis of where a country stands in its integration of modern ICT indictors.

One of the crucial elements of the mandate granted to Gallup National ICT Indicator Survey is the undertaking of a comparison of Pakistan's ICT indicators vis-à-vis broad cross-national/global ICT indicators. This comparative evaluation builds a picture of the status of ICT indicators in the country, while placing them in a global context. More importantly, the comparison on various ICT indicators generated from this exercise will help build an understanding of what needs to be done to match and/or catch up with other countries in the world on various networked communication technology indicators. This Section of the Report fulfills this mandate by providing a broad comparative evaluation of selected ICT indicators from Pakistan vis-à-vis other countries/regions of the world. Data on worldwide ICT indicators has been gathered through publications disseminated by the ITU. To complete the analysis, data on Pakistan's ICT Indicators 2014 is gleaned from Section 1 of this report, as well as relevant data published by other government authorities. The following pages will undertake this comparative analysis to help build the ground for prognosis and recommendations in the following sections of this report.

3.2 MOBILE CELLULAR SUBSCRIPTION PENETRATION

Mobile cellular technology has swept the global instant communication frontiers, and actively displaced static/fixed technologies. The rapid spread of cellular phones and technologies around the world is illustrated by global mobile cellular subscriptions. In 2013, International Telecommunications Union estimated that globally mobile-cellular subscriptions had reached 6.8 billion.[8] This is a remarkable number given that total estimated global population in 2013 was around 7.1 billion, which indicates that the global mobile-cellular subscriptions are approaching the entirety of the global population – there are almost as many mobile-cellular subscriptions as people in the world.

Research data from the International Telecommunications Union corroborates the current state of ICT indicators in different parts of the world. One of the most oft-repeated and discussed trends is the mobile cellular subscriptions penetration around the world. ITU's published data from 2013 shows that mobile cellular penetration rate stands at 96% globally. This near-universal penetration rate is built on two distinct penetration patterns: first, the developed world has high mobile cellular penetration rates (well above 100%); second, the developing world is powering the current growth in global mobile cellular subscription, coverage, and usage growth. In 2013, the mobile cellular penetration rates were 128%, while the same penetration rate was at 89% in developing countries.

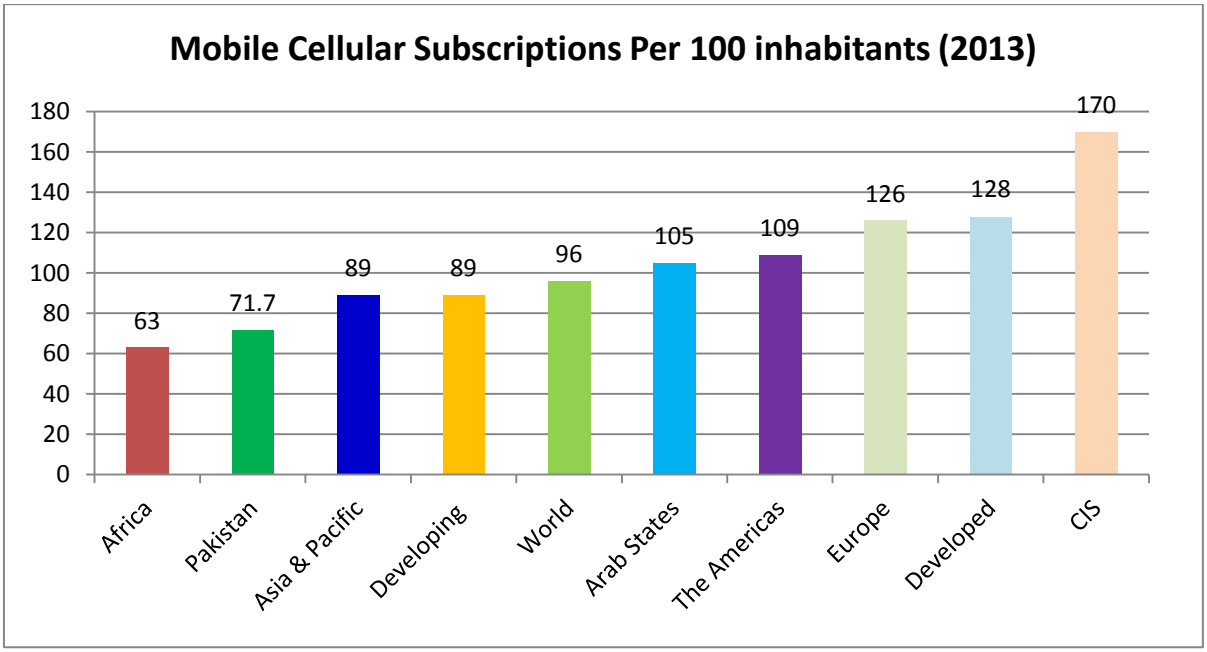
[8] ITU: http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013-e.pdf

Section 3: ICT Indicators in Pakistan: Global Comparisons

Pakistan has been one of the key frontiers of growth for mobile cellular subscriptions. The aggressive expansion in the industry, near-ubiquitous presence of cell phone services around the country, and high foreign direct investment in the sector over the last decade are all evidence of this growth. Data on mobile cellular subscriptions from Pakistan can be juxtaposed with the global dispersion of mobile cellular penetration rates (ITU) to understand the country's current status on this crucial ICT indicator. In 2013, Pakistan had a total of 128.93 million mobile cellular subscribers. In 2012, there were 120.1 million mobile cellular subscribers in the country.[9] This represents a year-on-year increase of 7.35% in the total mobile cellular subscribers in the country.

The analysis becomes more meaningful when mobile cellular subscription penetration in Pakistan is compared with the numbers extracted from around the world. In 2013, the mobile cellular subscription penetration per 100 inhabitants stood at 71.7% in the country.[10] Figures from the ITU data indicate that Pakistan currently sits towards the lower end of the global mobile cellular subscription landscape. The following figure helps bring clarity to this comparison:

Fig 3.1



Source: PTA Annual Report 2013

The figure above shows that currently mobile cellular penetration in the country lies at the lower end of the spectrum, when figures from around the world are inducted into the analysis. When compared with the developing world (89 subscriptions per 100 inhabitants) and the Asia & Pacific region (89 subscriptions per 100 inhabitants), mobile cellular subscriptions in Pakistan still need to catch up with these regions.

Crucially, one factor that needs to be taken into account is the potential for growth in mobile cellular subscriptions in Pakistan. ITU analysis asserts that as mobile cellular subscription penetration approaches 100%, the mobile cellular market is attaining saturation.[11] In 2013, growth rates in mobile cellular subscriptions fell to their lowest levels in both the developed and developing countries. Pakistan is set to buck this global trend, as mobile cellular subscriptions in the country can still grow and attain parity with the region, as well as the developing world.

[9] PTA: http://www.pta.gov.pk/index.php?option=com_content&view=article&id=361&Itemid=590
[10] PTA: http://www.pta.gov.pk/annual-reports/annreport2013_1.pdf
[11] ITU: http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013-e.pdf

This prognosis is rooted in the data on mobile cellular subscription growth rates. ITU figures show that mobile cellular subscription growth rate has been deflating gradually over the last few years. In 2013, the global mobile cellular subscription penetration growth rate was recorded at 5.4%, while the same was 3.7% in the developed world, and 6.1% in the developing world.[12]

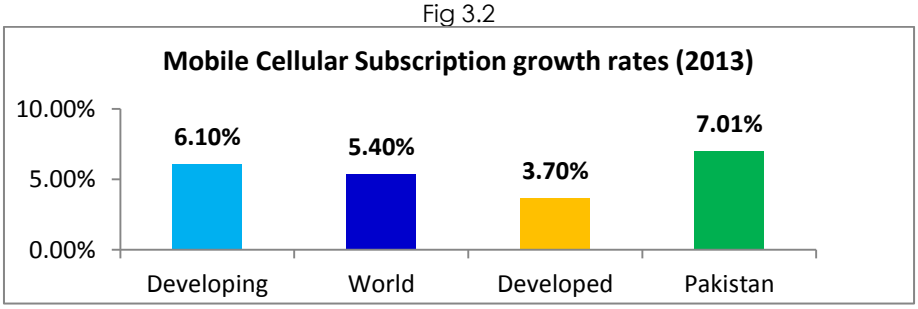
Data from Section 1 of this report on mobile cellular subscriptions per 100 inhabitants in Pakistan reveals the trend in growth pattern of this indicator. The table reproduced below (from Section 1) shows the growth pattern in Pakistan over the last few years:

Mobile cellular telephone subscriptions per 100 inhabitants	2009	2010	2011	2012	2013
	55	57	62	67	71.7

Sources: PTA Annual Report, 2013

These figures provide an indication of the growth trajectory in mobile cellular subscription penetration in the country. Between 2012 and 2013, mobile cellular subscription penetration in the country grew by 7.01%. This indicates that in 2013, Pakistan mobile cellular subscription penetration in the country was on an upward trajectory when compared with data from the rest of the world.

Fig 3.2



Source: PTA Annual Report 2013

3.3 INTERNET PENETRATION

The internet is proving to be the one of the most crucial engines for socio-political and economic transformations around the world. This technology has become embedded into the social fabric and economic infrastructure in the developed world, and has proved pivotal in unfolding new frontiers of development and growth. Additionally, the internet has radically re-engineered the structure and modalities of social behaviours, interactions, and communications. Succinctly put, the internet has become a powerful platform for reorienting social, political, and economic growth around the world.

One of the most crucial ICT indicators is the penetration of internet usage in a population. This indicator reveals the extent to which a country is "connected" to the world in a highly interconnected and interdependent world. Countries with robust and flourishing internet usage penetration are actively involved in reaping the informational and economic rewards generated by the internet through its ability to erase obstacles in communication and interaction. Given the crucial significance of internet in today's world, ITU publishes and disseminates in-depth figures on the current status and health of internet usage around the world. Internet usage penetration data from the ITU can be juxtaposed with the current internet penetration in Pakistan to assess the country's performance on this critical indicator.

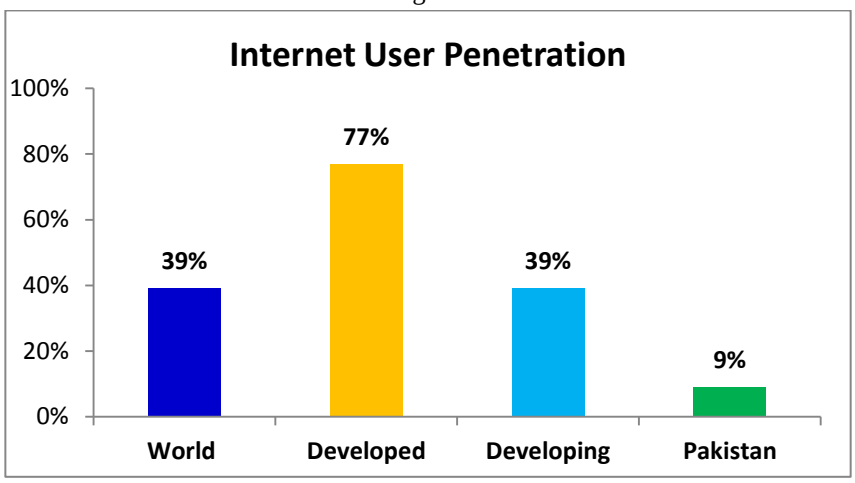
[12] Ibid.

Section 3: ICT Indicators in Pakistan: Global Comparisons

In 2013, over 2.3 billion people used the internet worldwide.[13] This corresponds to 39% of the global population. This statistical reality of internet usage underlines the substantial scope for increased penetration around the world. Despite its criticality for key global and domestic institutions, the internet is still largely restricted to a minority of the global population. When examined further, the global internet using population can be dichotomized further to reveal the underlying disparity in connectivity and usage. In the developed world, 77% of the population is online, compared with only 31% of the population in the developing world.[14] This disparity in internet penetration shows that while the developed world has gone online and integrated internet based communicative technologies and resources in domestic infrastructure, the developing world still lags behind on this indicator.

Pakistan is firmly encamped in the developing world when it comes to internet penetration and connectivity. More precisely, the country lies closer to the lower end of the spectrum in internet-usage throughout the developing world. In absolute numbers, Pakistan had 15,313,846 internet users in 2013.[15] This translates into 9% of the country's total population. The following figure provides a visual discrepancy between Pakistan and the rest of the world:

Fig.3.3



Source: Pakistan ICT Indicator Survey 2014

When juxtaposed with corresponding data on this indicator from around the world, internet usage is an isolated and restricted phenomenon in Pakistan. Pakistan lags behind internet penetration rates in the developing world by a significant 30%. The country has a similar internet penetration deficit with the world average. These numbers show that internet usage has substantial room to grow and expand in Pakistan. The country needs to undertake policies and regulations to expand the scope and penetration of internet connectivity to a larger percentage of the population.

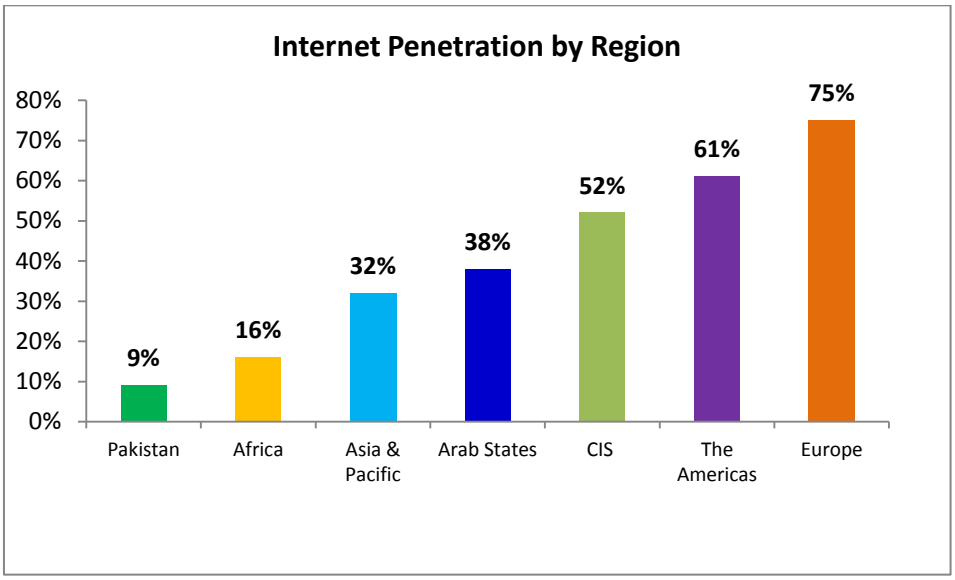
Regional comparisons provide an alternative vantage point for viewing Pakistan's performance on internet penetration. ITU's extensive global data shows that Europe has the highest internet penetration rate of any region in the world – 75% of Europeans are online. The figure below provides a regional breakdown of global internet penetration rates:

[13] ITU: www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013-e.pdf

[14] Ibid.

[15] Source: Pakistan ICT Indicators Survey, 2014

Fig.3.4



Source: Pakistan ICT Indicator Survey 2014
ITU Facts and Figures 2013

When internet penetration in Pakistan is compared with regional internet penetration data, the picture becomes granular. Pakistan brings up the rear in this comparison. Internet penetration in the country is lower than the regional internet penetration level in Africa where 16% of the population is currently online. Similarly, Pakistan trails the Asia & Pacific region by 23%, while it lags behind Arab States by 29%. These numbers show that internet penetration rates in Pakistan are low, especially when compared to regions that are similarly placed in terms of their socio-economic profile. While this analysis is useful in revealing the extent to which Pakistan needs to expand internet connectivity, the reader must remain cognizant of the inherent discrepancy in examining a country with a region. Certain members within a region have higher internet penetration rates, which pulls the overall penetration levels higher. A more revealing comparison would compare Pakistan's internet penetration rates with similarly sized and positioned countries.

Notwithstanding this limitation, it remains abundantly clear that an overwhelming majority of the country's population is currently offline – 91% of Pakistanis are not internet users. This implies that internet penetration, connectivity, and usage are restricted to a minority of the country's population. If Pakistan is to galvanize its development and integrate fully with the global knowledge economy, internet penetration needs to be increased sharply.

3.4 THE GENDER GAP IN INTERNET USAGE

Internet penetration and usage is neither universal nor equal. One of the most revealing aspects of internet user profiles around the world is the gendered inequality in internet usage. Globally, more men than women are internet users. The gender inequality in internet usage shows that access to the internet is refracted through the overarching gender imbalances.

ITU's extensive global data on ICT indicators provides a vivid illustration of the gender disparity in internet usage around the world. Globally, 37% of all women use the internet, while 41% of all men are internet users.[16] In absolute terms, this corresponds to 1.3 billion women and 1.5 billion men. Furthermore, the gender imbalance in internet usage can be dissected through the developmental lens. The developed world has fared better than the developing world in minimizing the overall gender disparity in internet penetration. 80% of all men in the developed world are internet users, while 74% of all women are internet users.[17] This

[16] www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013-e.pdf

[17] Ibid

corresponds to 483 million male Internet users, and 475 million female internet users. In the developing world, 29% of all women are online, compared with 33% of all men. This corresponds to 826 million women and 980 million male internet users.

Data from Pakistan shows the gender split in internet usage in the country. In 2013, 9% of the country's population used the internet. In 2013, 9% Pakistanis used the internet. Only 6% of the country's total female population used the internet in this period. On the other hand, 12% of all men in the country used the internet in 2013.[18] These numbers indicate that the gender differential in internet usage is acute at a low proportion i.e. within a small internet-using population men outnumber women by 6% when it comes to using the internet. The following Table, reproduced from Section 1, provides an in-depth look on the profile of internet users in the country:

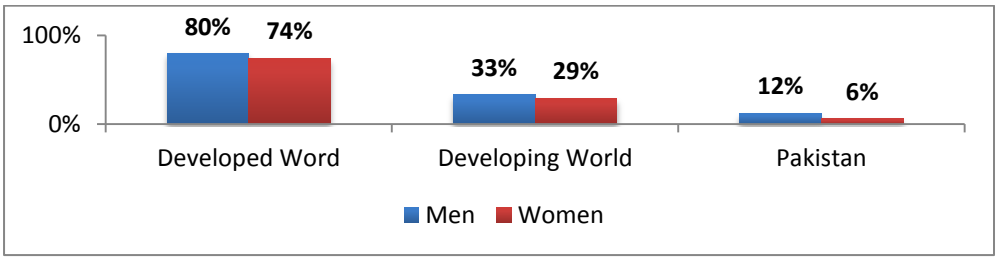
Table 3.1 **Proportion of Internet Users in 2014**

(Row %)

		Q21. Have you used the internet in the last 12 months?	
		Yes	**No**
All Pakistan		9%	91%
Gender	**Male**	12%	88%
	Female	6%	94%
Age of the Respondent	**Under 30**	14%	86%
	30 - 50	5%	95%
	51+	4%	96%
Education	**Low**	1%	99%
	Medium	8%	92%
	High	35%	65%
HH Income	**Low (Quintile #1)**	3%	97%
	Medium (Quintile #2)	2%	98%
	High (Quintile #3,4,5)	12%	88%
Location	**Urban**	18%	82%
	Rural	5%	95%
Province	**Punjab**	9%	91%
	Sindh	14%	86%
	KPK	4%	96%
	Balochistan	8%	92%

Source: Pakistan ICT Indicator Survey 2014

In 2013, Pakistan's low internet penetration rates and user base were underlined by a significant gender differential in internet usage. When compared with the developed and developing world figures, data from Pakistan remains consistent with figures from around the world. Women are in general less likely to be internet users in any given country or region of the world. The gender differential highlights a consistently persistent and obdurate reality of internet usage. The numbers show that the gender differential in Pakistan, which sits at 6% at present with a low internet using base, is above the average for the developing world in general, where the different stood at 4% in 2013. The figure below visualizes this gender imbalance:



Gender Imbalance in Internet Use, 2013

[18] Pakistan ICT Indicators Survey, 2014

3.5 HOUSEHOLD INTERNET PENETRATION

An effective barometer of the criticality of internet to the modern lifestyle is internet connectivity at home. With its near-universal prevalence around the world, the internet has become an integral service used by families at homes. In particular, household internet penetration is a major feature of households in the developed world. Internet penetration at the household level indicates the level of internet integration in a society.

One of the most crucial indicators researched and circulated by ITU is internet penetration in households. The organization collects and provides extensive statistical data from around the world on this indicator. In 2013, 750 million households around the world were connected to the internet. This corresponds to 41% of all households worldwide. This indicates that the internet is becoming an increasingly ubiquitous feature of societies around the world.

Further distillation of this data along developmental lines shows the difference in household internet penetration in the developed and developing world. In the developed world, 376 million households are online, out of a total of 484 million households. This translates into a substantial 78% internet penetration rate at the household level in the developed world. In the developing world, out of 1.33 billion households, 373 million are online, while a whopping 960 million are still offline. This translates into 28% internet penetration at the household level. A substantial 72% of all households in the developing world are not connected to the internet. Alternatively put 90% of the 1.1 billion households currently offline are in the developing world.

Internet household penetration rate from Pakistan shows that the country lies at the lower end of the penetration spectrum – globally, as well as developmentally. Section 1 of this report provided a breakdown of the total household internet penetration in Pakistan. In 2013, 8% of all Pakistani households had internet access. The table below (reproduced from Section 1) provides a breakdown of household internet penetration in Pakistan:

Table 3.2 **Proportion of users with Internet Access at Home 2014**

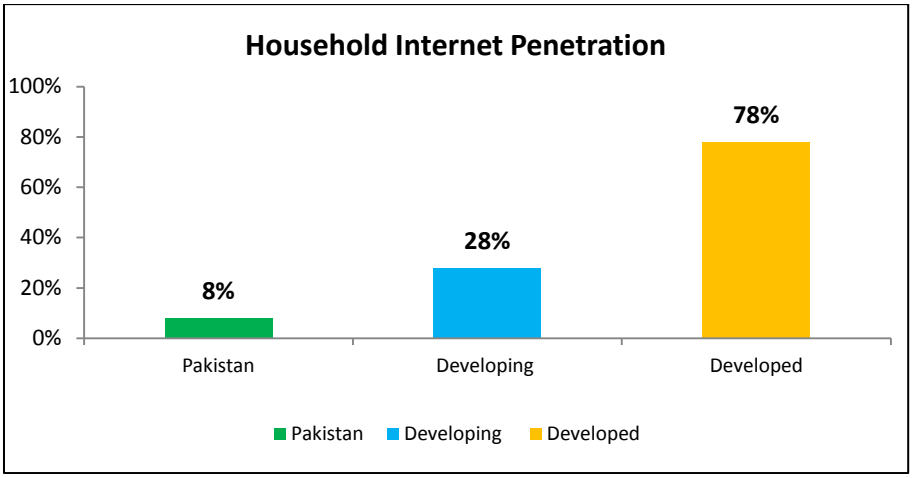
(Row %)

		INTERNET ACCESS AT HOME	
		Yes	**No**
All Pakistan		8%	92%
Gender	**Male**	9%	91%
	Female	7%	93%
Age of the Respondent	**Under 30**	12%	88%
	30 - 50	5%	95%
	51+	5%	95%
Education	**Low**	1%	99%
	Medium	7%	93%
	High	31%	69%
HH Income	**Low (Quintile #1)**	2%	98%
	Medium (Quintile #2)	1%	99%
	High (Quintile #3,4,5)	12%	88%
Location	**Urban**	17%	83%
	Rural	4%	96%
Province	**Punjab**	8%	92%
	Sindh	14%	86%
	KPK	4%	96%
	Balochistan	7%	93%

Source: Pakistan ICT Indicators Survey, 2014.

Household internet penetration is low in Pakistan. The 8% household internet penetration in 2014 translates into 2,113,567 households throughout Pakistan out of 26,219,591 households. These numbers can be juxtaposed with the development-based global internet penetration rates discussed above to yield the following figure:

Fig.3.6

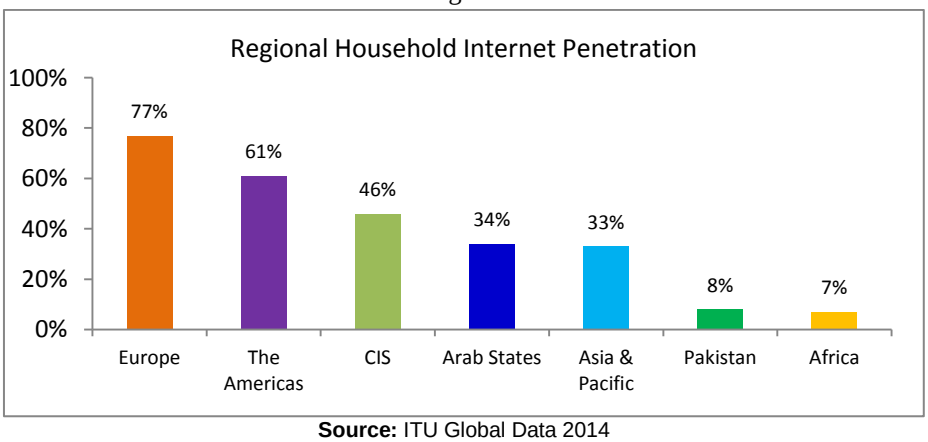


Source: ITU Global Data 2014

These numbers indicate that the low household internet penetration rate in Pakistan is well below the global penetration rates. In particular, despite an overall lower household internet penetration rate, the developing world average is well above Pakistan's internet penetration rates. Pakistan should prioritize and target matching the developing world's household internet penetration rate. Achieving this target would significantly improve and expand internet connectivity, accessibility, and penetration in the country.

An alternative comparative model can be built based on regional household internet penetration rates. ITU's global data is broken down regionally to show differences in household internet penetration in different parts of the world. These numbers show that Europe has the highest internet penetration rate of any region – 77% of all households on the continent are connected to the internet. A significant 61% of all households in The Americas are also connected to the internet. In 2014, CIS states had an internet penetration rate of 46%. Household internet penetration in the Arab States and Asia & Pacific were 34% and 33% respectively, thereby showing a marginal difference. Household internet penetration rate in Africa was at 7% in 2014. Amidst this spread of household internet penetration rates, 8% of all households in Pakistan were connected to the internet. This figure is marginally better than Africa, but significantly lesser than the Arab States and Asia & Pacific. An alternative strategy for increasing household internet penetration rate in the country should target reaching current penetration levels in the Arab world and the Asia & Pacific region. This comparative data is visualized below:

Fig.3.7

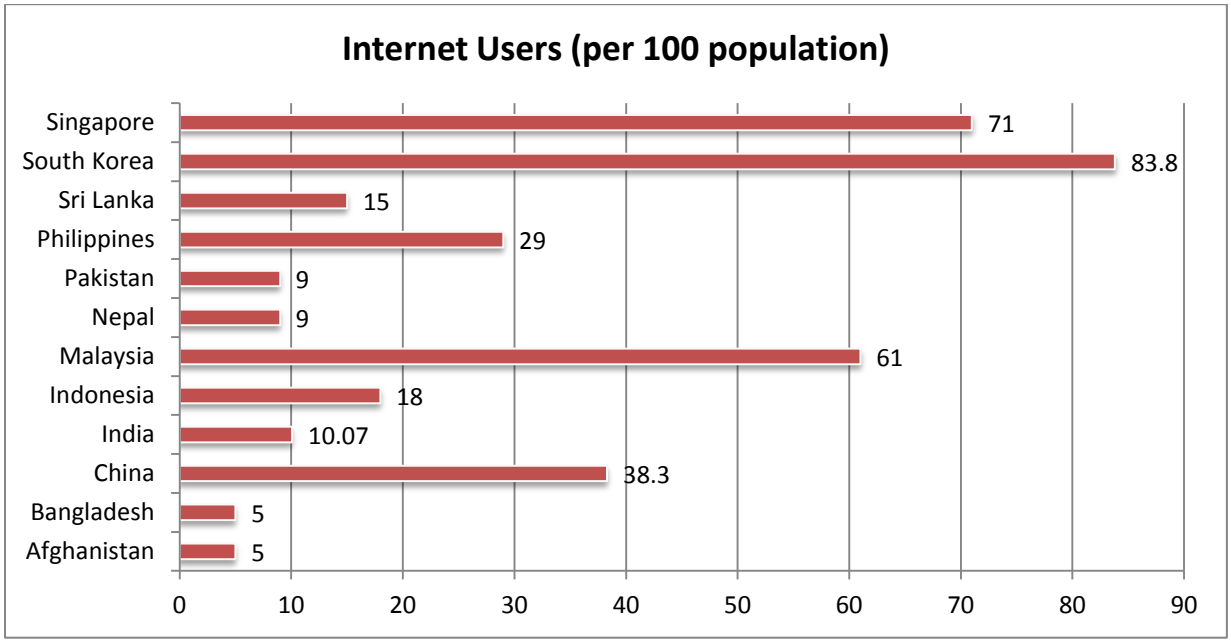


Source: ITU Global Data 2014

3.6 REGIONAL INTERNET PENETRATION COMPARISON

Pakistan's low internet penetration rate can also be conceptualized by collating and analyzing regional internet penetration data. This comparison is more meaningful as it activates historical, contemporary, social, cultural, and political contexts that are unique to countries in South Asia. Examining regional internet penetration rates provides a window into understanding Pakistan's ICT performance on this core indicator vis-à-vis developing countries in South Asia that share demographic profiles. For this comparison, the Asian Development Bank's data on internet penetration rates from the "Basic Statistics 2014" publication can be used. The Bank collects a wide range of socio-economic data from Asian countries. In 2014, the regional internet penetration rates were as follows:[19]

Fig.3.8



Source: Asian Development Bank-Basic Statistics 2013

The data presented in the Figure above shows that Pakistan is yet to experience substantial growth in its internet usage penetration. Economically advanced countries in Asia – Singapore, South Korea, and Malaysia – have achieved significant ICT penetration rates in their domestic societies. Crucially, this data shows a clear correlation between the level of economic development and ICT usage penetration. This link has been accentuated and analyzed throughout this publication. In particular, South Korea and Singapore's high internet penetration rates show the immense economic value that can be derived from significant expansion in ICT usage across all sectors. Both countries have achieved high economic growth – despite land, demographic, and political limitations – by actively integrating ICT-based technologies and tools in their domestic economy and society. China's substantial economic growth is still in the process of absorbing ICT usage, and can add significant productivity value to its economic growth by further expanding ICT usage. (38.30% of the population in the country uses the internet).

In contrast, Pakistan's internet penetration rate (9%) is convergent with the ICT usage data from countries in South Asia. This rate is above Bangladesh and Afghanistan (5%), but is equivalent to Nepal (9%). India outperformed Pakistan on this indicator marginally, where 10.07% of the population actively uses the internet. Sri Lanka registered the highest internet usage penetration in South Asia – at 15%. These comparative figures show that Pakistan is presently matching the regional average in internet usage

[19] Basic Statistics 2013 – ADB: http://www.adb.org/publications/basic-statistics-2013?ref=data/publications

penetration. However, if the country wants to accelerate socio-economic development through expansion in the ICT landscape, it will have to break away from the regional cohort and achieve better performance on internet usage penetration in the country.

3.7 E-GOVERNMENT

Advanced ICT technologies have been widely recognized at the global level as the pathway to triggering inclusive sustainable development. The contemporary ICT landscape is deemed essential to creating a modern e-governance infrastructure that delivers inclusive, participatory, and sustainable growth, while fulfilling the core requirements for effective governance: accountability and transparency. Governments around the world have recognized and utilized the substantial connectivity efficiency through ICTs, and have – with varying degrees of success – managed to convert conventional government service delivery operations an ICT-based service delivery and engagement infrastructure. The UN's Department of Economic and Social Affairs takes an active interest in encouraging governments to incorporate ICT usage in their operations in order to create efficient e-government institutions.

The level of success achieved in instituting an e-government infrastructure is ranked by UN-DESA in a global e-government ranking titled the "E-Government Development Index". This ranking is derived from a weighted average of three normalized scores on the dimensions considered foundational to effective e-governments: online service index, telecommunication index, and the human capital index.[20] The 2012 rankings highlight the Pakistani Government's performance at creating and operating a successful e-government infrastructure. Currently Pakistan is ranked 156th (out of 193) in the e-government development index. The Table below shows regional rankings for comparing Pakistan's performance:

Table 3.3 **E-Government Scorecard**

Country	E-Government Index Score	Global Rank
Afghanistan	**0.1701**	**184**
Bangladesh	**0.2991**	**150**
Iran	**0.4876**	**100**
India	**0.3829**	**125**
Malaysia	**0.6703**	**40**
Nepal	**0.2644**	**164**
Pakistan	**0.2823**	**156**
Philippines	**0.5130**	**88**
Sri Lanka	**0.4357**	**115**

Source: UNDESA: E-Government Survey 2012

The Table provides a list of Asian states that share convergent characteristics with the socio-economic and political dynamics in Pakistan. The list indicates that Malaysia has been the most successful in this cohort, where high internet and ICT penetration has been well-matched by the Government's achievements in creating an effective e-government framework for service delivery. On the other hand, while Pakistan outperformed Nepal and Afghanistan on the e-government indicator, it has a low global and regional rank when compared with Iran (100), India (125), and Sri Lanka (115). Pakistan's current global rank – 156 – shows that the country's Government needs to begin the process of expanding ICT usage in the country by inducting ICTs in its institutional matrix. Crucially, the Government's active absorption of ICTs in its operations can not only improve the country's global rank, it can help trigger growth in the ICT landscape by making the Government an active player. This increases Governmental presence through ICTs can help increase the demand for ICT infrastructure, thereby bringing growth to this sector, but also pull additional users towards advanced ICT usage, if essential governmental services are most effectively delivered through the ICT pathway.

[20] UNDESA: E-Government Survey 2012

3.8 ICT SERVICE EXPORTS (BoP, CURRENT US$)

Developed economies are highly likely to have their economic core built around the services sector. The production and consumption patterns produce economic value primarily through service goods. Some of the world's largest economies have further differentiated their services sector strength by building a comparative advantage in ICT products. More specifically, the ICT sector in the most advanced economies in the world produces ICT goods and services that are a substantial component of the country's exports.

The World Bank's global statistics provide longitudinal data on a wide range of ICT indicators, including the size of ICT Service Exports. Developed economies feature prominently in the list of ICT Service Exports as a large proportion of their economic production and export is increasingly derived from ICT service products. In general, global ICT Service Exports have been on an upward trajectory over the last few years; with an increasing proportion of global trade composed of ICT products and services. Developing countries have also begun latching on to this economic trend. The following Table provides an indication of the size of ICT Service Exports in a select number of Asian countries:[21]

Table 3.4 **ICT Service Exports (BoP, current US$)**

	2009, in US$	2010, in US$	2011, in US$	2012, in US$	2013, in US$
Afghanistan	682,782,895	1,178,783,829	1,573,084,342	1,578,248,972	1,949,169,173
Bangladesh	670,760,046	885,262,165	925,357,738	713,852,636	740,897,502
China	45,867,524,461	53,641,608,808	60,690,749,652	68,540,636,095	74,332,920,559
India	61,624,368,552	75,037,123,007	85,662,135,486	95,891,807,670	99,193,923,195
Malaysia	5,510,056,220	6,990,522,541	8,913,509,679	10,552,794,876	11,587,920,831
Nepal	147,751,897	199,216,283	350,017,210	383,570,547	497,299,616
Pakistan	**918,000,000**	**1,075,000,000**	**1,176,963,000**	**1,311,925,000**	**1,606,000,000**
Sri Lanka	544,000,000	593,760,000	706,000,000	932,604,675	757,886,072

Source: World Bank, 2014-ICT Service Exports (BoP, Current US$)

The data on ICT Exports includes computer and communications services (telecommunications and postal and courier services) and information services (computer data and news-related service transactions). The ICT export numbers show how the overall size of a country's ICT exports has changed between 2009 and 2013. When juxtaposed with the countries on this list, Pakistan's total ICT service exports outperformed Bangladesh, Nepal, and Sri Lanka. The country's overall ICT service exports have registered incremental gains in the period under consideration. In 2009, Pakistan exported a total of US$918 million ICT service exports. This size had increased to US$1.6 billion by 2013. This increase translates into a **70%** increase in the total dollar value of ICT service exports from Pakistan between 2009 and 2013. Interestingly, the World Bank's figures show that Afghanistan has made tremendous leaps in ICT Service Exports in the same period. While trailing Pakistan in 2009 with a total ICT export value of US$682 million, Afghanistan exported a total of US$1.95 billion ICT service exports in 2013. This tremendous increase outpaced Pakistan's ICT service exports marginally.

India has become a significant global player in ICT production and trade. The country's ICT service exports are among some of the highest in the world. In 2009, India exported ICT service exports worth US$61.6 billion, which ballooned to a substantial US$99.2 billion in 2013. These figures also show that India impressive ICT performance outperformed China, whose total ICT service exports were US$74.3 billion in 2013. In comparison to the Chinese and Indian economies, the Pakistani ICT services sector is small and has much

[21] The World Bank: http://search.worldbank.org/quickview?name=%3Cem%3EICT%3C%2Fem%3E+service+exports+%28BoP%2C+current+US%24%29&id=BX.GSR.CCIS.CD&type=Indicators&cube_no=2&qterm=ict+in+paksitan

ground to cover. Given Pakistan's socio-demographic and economic profile, the country should be generating a significantly larger export value from ICT service exports. Moreover, with a widespread ICT infrastructure, Pakistan should look towards galvanizing its ICT sector as a strategy to increase its ICT service exports to join the ranks of significant players in the global economy, as well as the route to expanding the country's overall exports.

ICT SERVICE EXPORTS (% of service exports, BoP)

The World Bank's global data on ICT service exports also provides numbers on the percentage share of ICT service exports in a country's overall service exports. Advanced economies have built a considerable comparative advantage in ICT production, which is reflected in the overall size of their ICT exports, as well as the share of ICT exports in the overall service sector exports. Some developing economies, like India, have done remarkably well to catch up with the developed economies in building their economic fortune on the productive contribution made by the ICT sector. Most other developing economies have registered variable performance on ICT service exports. The Table below shows the percentage of ICT service exports in the total service exports from a select group of Asian countries:[22]

Table 3.5 **ICT Service Exports (% of service exports, BoP)**

	2009	2010	2011	2012
Afghanistan	36.0%	37.5%	45.3%	51.6%
Bangladesh	33.6%	36.2%	37.7%	26.7%
China	31.8%	31.3%	32.8%	34.9%
India	66.3%	64.1%	61.8%	65.9%
Malaysia	19.5%	21.8%	24.7%	27.9%
Nepal	20.9%	29.7%	40.5%	41.5%
Pakistan	**23.2%**	**16.3%**	**23.4%**	**20.1%**
Sri Lanka	28.7%	24.0%	22.9%	24.6%

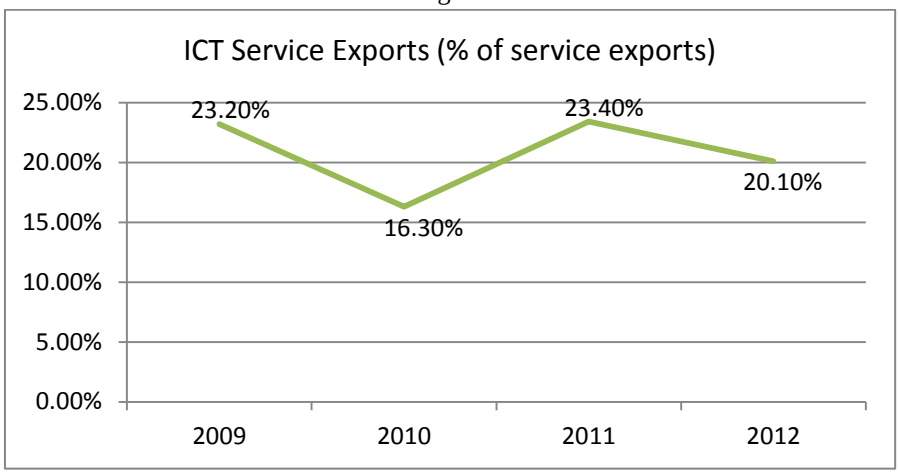
Source: ICT Service Exports (% of Service Exports, BoP)

The figures shown in the table provide a longitudinal performance trend in the share garnered by ICT exports in the total service exports from each country. Of the countries considered in this analysis, India has been the leader in building its service exports around ICT products and services. As the data shows, the majority of India's service sector exports were composed of ICT service exports between 2009 (66.3%) and 2012 (65.9%). Similarly, Afghanistan's impressive gains in ICT exports between 2009 and 2012 have also been a critical factor in driving the country's overall service exports. Between 2009 and 2012, ICT products and services from Afghanistan increased their share from 36% of the total service exports to 51.6%.

ICT exports account for between one-quarter and one-fifth of all service exports from Pakistan. Between 2009 and 2012, the country's ICT exports contributed within a narrow range in the overall service exports from the country. In 2009, a total of US$918 million ICT exports accounted for 23.2% of all service sector exports from the country. By 2012, the overall ICT service exports rose to US$1.31 billion, which accounted for 20.1% of all service exports from the country. This data shows that the overall service sector exports from Pakistan are on the rise, while highlights the performance of the ICT sector between 2009 and 2012. While the overall service sector has increased its share in the country's economic matrix, ICT services have accounted for a lesser share of the service sector production in the four year period under consideration. The figure below shows the trend in the percentage share of ICT exports in the overall service sector exports in Pakistan between 2009 and 2012:

[22] The World Bank Data: http://data.worldbank.org/indicator/BX.GSR.CCIS.ZS

Fig.3.9



Source: World Bank (ICT Indicators) 2013

The ICT sector's gradual expansion in the total exports account for a stable source of income for Pakistan. This trend implies that Pakistan can increase its overall exports substantially by catalyzing growth and expansion in the ICT sector, which can contribute significantly to the country's overall export income.

3.9 ICT GOODS IMPORTS (% of total goods imports)

Given the primacy of ICT technologies and services in a wide range of economic consumption and production patterns, ICT goods and services have become integral to many public and private sector operations. This implies that some countries are dependent in importing ICT goods to meet their needs. The World Bank provides in-depth global data on ICT imports from around the world. The diffusion of ICT expertise and comparative advantage around the world implies that even the most advanced ICT-based service economies have to source some ICT goods and services from other countries. This reality is borne out in the statistics that show that many developed service sector economies, with strong ICT resources, rely in importing a portion of their ICT goods consumption. The following Table provides country-level data on ICT Goods Imports as a percentage of total goods imports from a select group of Asian countries, which will help elucidate Pakistan's performance on this indicator between 2009 and 2012.

Table 3.6 **Country-wise ICT Goods Imports**

	2009	2010	2011	2012
Afghanistan	0.30%	0.40%	0.30%	0.20%
China	21.90%	20.40%	18.00%	19.60%
India	7.80%	6.30%	6.00%	5.30%
Malaysia	30.10%	29.80%	25.60%	23.10%
Nepal	5.10%	7.20%	5.30%	Not Available
Pakistan	**3.10%**	**3.30%**	**3.60%**	**4.40%**
Sri Lanka	3.20%	2.90%	3.50%	3.70%

Source: ICT Goods Imports (% of Total Goods Imports)

This Table reveals a number of intriguing dynamics that drive the modern economic production and value-generation. Countries that have achieved a higher level of growth and development transition towards production and economic activity generation based primarily out of the services sector. As this transition towards the services sector consolidates, a significant proportion of a country's consumption and

production processes require ICT goods and resources. ICT goods imports data shows that both China and Malaysia have a large proportion of their import bill composed of ICT goods and services. Concurrently, if domestic ICT goods and resource production is the primary foundation for the service sector, a country becomes less reliant on importing these ICT goods. India is the best example of this trend. As a large proportion of India's exports come from ICT goods and services, the country's domestic transition towards the services sector is aided by its own substantial ICT sector. Therefore, India has been decelerating its ICT goods and imports. Similarly, as the domestic ICT production and exports increase in China and Malaysia, the overall dependence on importing ICT goods declined between 2009 and 2012 in these countries.

Pakistan's total import bill shows that the country spends a small proportion of its finances on importing ICT goods and resources, especially when compared to other middle income developing countries in the region. Between 2009 and 2012, total ICT goods imports increased from 3.1% of the total goods imports to 4.4% of the total goods imported in the country. This shows that Pakistan has been much slower at progressing towards an ICT-based advanced services sector that could catapult the economy into a higher growth trajectory. When this trend is juxtaposed with the export figures analyzed in the previous pages, it becomes clear that ICT goods and services are currently accounting for a small proportion of the country's overall balance of trade. Pakistan needs to accelerate its growth in its ICT sector to match the economic productivity and value generated by other South Asian states.

3.10 INTERNET USERS (per 100 people)

Internet penetration rate is an important indicator of the level of ICT usage and sophistication in a country. Higher internet penetration rates translate into a connected, well-informed, and engaged population. The internet's increasing criticality in ICT infrastructure and services implies that the depth of internet penetration reveals the level and scope of development in a domestic ICT landscape. Internet access and connectivity is indispensable to unlocking and catalyzing the economic and social value locked in ICT-mediated socioeconomic transactions and communicative interactions. Developed economies have constructed and realigned their economic core towards the services sector, which is primarily powered through ICTs. Consequently, internet usage statistics from these countries show that a high proportion of the domestic population is connected to the worldwide web.

The World Bank's extensive indicator data provides useful longitudinal statistics on core ICT indicator. One of the foundational indicators is the number of internet users per 100 people in a country. This number is derived from the total number of individuals with access to the worldwide network in a population. This indicator reveals the total density of internet users in the population. The number of internet users in Pakistan between 2009 and 2013 can be juxtaposed with data from other countries in the region to gauge the internet penetration rate in the country. This data is shown in the Table below:[23]

Table 3.7 **Country-wise Internet Users (per 100 peoples)**

	2009	2010	2011	2012	2013
Afghanistan	3.6	4.0	5.0	5.5	5.9
Bangladesh	3.1	3.7	5.0	6.3	6.5
China	28.9	34.3	38.3	42.3	45.8
India	5.1	7.5	10.1	12.6	15.1
Malaysia	55.9	56.3	61.0	65.8	67
Nepal	2.0	7.9	9.0	11.1	13.3
Pakistan	**7.5**	**8.0**	**9.0**	**10.0**	**10.9**
Sri Lanka	8.8	12.0	15.0	18.3	21.9

Source: World Bank (ICT Indicators) 2013

[23] http://data.worldbank.org/indicator/IT.NET.USER.P2

The data presented above reveals the internal mechanics of the ICT landscape. When juxtaposed with the data showed previously, the trend indicates the nuanced distinction between ICT consumption and production. More specifically, India's case highlights this distinction. While the country has become one of the global leaders in ICT production and trade, the domestic internet usage penetration remains low in the country. Between 2009 and 2013, the total number of internet users per 100 people increased from 5.1 to 15.1 in India. Although the density doubled in this period, it is far outpaced by the concentrated acceleration in ICT goods production and exports from the country. In contrast, Malaysia has a relatively modest ICT export sector, especially in comparison to China and India. However, the country has the one of the highest internet usage density in the region. Between 2009 and 2013, the number of internet users per 100 people increased from 55.9 to 67 in Malaysia.

Pakistan's internet density is one the rise, albeit the increase is taking root at a slow rate. Between 2009 and 2013 the number of internet users per 100 people increased from 7.5 to 10.9 in the country. Contrarily, the same density increased from 8.8 to 21.9 in Sri Lanka in the same period. This variation in increase in internet usage shows that internet usage is often related to a wide variety of variables, besides ICT production and infrastructure. Given the regional trend, Pakistan needs to register a faster rate of growth in internet usage. This depth in internet usage penetration will be achieved if a greater portion of the national population is able access and use the internet over the next few years. Other countries in the region are moving ahead on an upward trajectory, as ever greater proportions of domestic populations are accessing and using the worldwide web.

3.11 FIXED BROADBAND INTERNET SUBSCRIBERS

Fixed broadband internet subscriptions are increasingly becoming the default pathway for accessing the internet around the world through static connections. The World Bank's extensive data on ICT indicators provides longitudinal data from around the world on the total number of fixed broadband internet subscribers in countries between 2009 and 2013. This indicator shows the number of broadband subscribers with a digital subscriber line, cable modem, or other high-speed technology. Fixed broadband refers to high-speed fixed (wired) access to the internet at downstream speeds equal to, or greater than, 256 Kbit/s. The World Bank's data on the total number of fixed broadband internet subscribers in a select group of South Asian countries between 2009 and 2013 is as follows:[24]

Table 3.8 **Country-wise Fixed Broadband Internet Subscribers**

	2009	2010	2011	2012	2013
Afghanistan	1,000	1,500			1,500
Bangladesh	315,600	413,000	468,500	516,638	989,521
China	103,978,000	126,337,000	156,487,000	175,624,800	188,909,000
India	7,745,710	10,990,000	13,350,000	14,306,000	14,540,000
Malaysia	1,541,700	1,835,700	2,137,600	2,459,900	2,443,100
Nepal	15,561	58,435	94,656	124,000	208,773
Pakistan	**302,829**	**531,787**	**737,778**	**926,922**	**1,077,970**
Sri Lanka	169,600	228,316	359,000	423,194	423,522

Source: World Bank (ICT Indicators) 2013

The data in the Table shows the leaders in South Asia in terms of the total number of fixed broadband internet subscribers. China had the highest number of fixed broadband internet subscribers in the region in 2013, with a total of 189 million subscribers. India came in second with a total of 14.5 million fixed broadband internet subscribers. The difference between the two most populous countries in the world shows that the Chinese population has more actively accessed and used the internet when compared with other regional countries.

[24] The World Bank: http://search.worldbank.org/quickview?name=Fixed+broadband+Internet+subscribers&id=IT.NET.BBND&type=Indicators&cube_no=2&qterm=ict+in+paksitan

The difference in total fixed broadband subscriptions in Malaysia and Pakistan accentuates the gulf in ICT penetration in the two countries. Malaysia had a total of 2.4 million fixed broadband internet subscribers out of an estimated population of 29 million. While this is still a small proportion of the overall population, Malaysia has been far more successful in deepening internet penetration at the household level. In contrast, Pakistan had a total of 1 million fixed broadband internet subscribers in 2013, with a total population upwards of 180 million.[25] Furthermore, Bangladesh has also underachieved on this indicator in the region. With a sizable population, Bangladesh had 989,521 fixed broadband internet subscribers in 2013, which shows that the country has a long way to go in increasing fixed broadband internet penetration. These numbers indicate that on the whole, fixed broadband internet connectivity is on the rise around the world. Some developing countries (notably China and India) have been successful in expanding their subscription base significantly. Pakistan needs to accelerate its own march towards increased internet penetration to join the ranks of internet-connected countries.

FIXED BROADBAND INTERNET SUBSCRIBERS (per 100 people)

Fixed broadband internet subscribers are the number of broadband subscribers with a digital subscriber line, cable modem, or other high-speed technology. Broadband internet connections are high-speed connections with a minimum downstream speed equal to, or greater than, 256 Kbits/s. An alternative conceptualization of the fixed broadband internet subscription in a country is the penetration rate per 100 people. This number shows the fixed broadband internet subscription density in a population. Countries with advanced ICT sectors are highly likely to have high densities, while countries with lower fixed broadband internet subscription penetration are more likely to have a lower density. The World Bank's data shows the following rate of penetration in a select group of South Asian countries:

Table 3.9 **Fixed Broadband Internet Subscribers (per 100 people)**

	2009	2010	2011	2012	2013
Bangladesh	0.21	0.28	0.31	0.34	0.63
China	7.79	9.42	11.61	12.97	13.63
India	0.64	0.9	1.08	1.14	1.16
Malaysia	5.52	6.46	7.41	8.39	8.22
Nepal	0.05	0.2	0.31	0.4	0.75
Pakistan	**0.18**	**0.31**	**0.42**	**0.52**	**0.59**
Sri Lanka	0.82	1.09	1.71	1.99	1.99

Source: World Bank (ICT Indicators) 2013

Fixed internet subscription density is on the rise around the world. This trend is aptly captured by the World Bank for South Asian countries. This data indicates that China has the highest fixed broadband internet subscription rates per 100 people in the group of countries under consideration. Between 2009 and 2013, the penetration rate increased from 7.79 to 13.63 per 100 people. Malaysia has the second highest fixed broadband internet penetration rate, which stood at 8.22 in 2013.

Both Sri Lanka and India have registered crucial gains in the fixed broadband internet penetration rate between 2009 and 2013, albeit the overall subscription rate remains low. Fixed broadband internet subscriptions per 100 people remain low in Pakistan. In 2013, the country had 0.59 fixed internet broadband subscribers per 100 people, which increased from 0.18 in 2009. These numbers show that fixed broadband internet subscriptions remains low in Pakistan, especially when compared with other countries from the region. This trend is synchronous with the findings from this research, which show that as of 2014, internet penetration rates in Pakistan are still low, and need significant deepening for the ICT sector to flourish.

[25] Note: An internet subscription may be shared by more than one person, especially in households. Similarly, a single person can have multiple subscriptions.

SECTION 4

FORECASTING BROAD TRENDS IN THE ICT LANDSCAPE: 2015-2018

4.1 INTRODUCTION

The frontiers of ICT landscape in Pakistan are moving beyond the infancy stage. At present, ICT indicators in the country are at the "take-off" stage – to borrow a term from Whitman Rostow. Since the last ICT baseline survey (2001), the country has experienced dynamic growth in ICT indicators. Although the growth has been largely incremental, various ICT metrics and indicators in the country have increased their penetration level. Since Pakistan has a large population base, full ICT penetration requires a facilitative policy and regulatory environment. Data on ICT indicators identified and gauged in the earlier sections of this report indicates that large swathes of the country's population must now be incorporated as active, connected, and engaged users in the ICT landscape.

Increasing the depth and quality of ICT indicators and services in the country is a pre-requisite for Pakistan's transition towards a modern knowledge economy, fully integrated with international ICT standards and practices. Technological progress and prowess has become the defining and differentiating feature of advanced economies. Once ICT indicators gain universal penetration in a society and economy, they fuel economic growth. Numerous states around the world have successfully ushered in qualitative changes in their ICT infrastructure to move their economies from agrarian and manufacturing bases into service-based economic production and consumption. These economies bear crucial lessons for developing countries aiming to reach higher echelons in economic growth. In Pakistan's context the need for catalyzing ICT services and resources is imperative for fuelling economic growth in the 21st century.

One of the objectives of this research study undertaken by Gallup Pakistan is to provide a forecasting analysis on the future growth trend in ICT indicators over the next five years (2015-2018). The extensive data and analysis conducted in the earlier sections of this report portend the future growth trends in Pakistan's ICT infrastructure and landscape. By combining the data gathered in Gallup's nation-wide research with widely disseminated and circular research studies from earlier sources, the next few pages will provide a reasoned analysis on the future growth trajectory of ICT indicators in Pakistan. This analysis will begin by delineating a projection model, which will then be elaborated and analyzed at length.

4.2 Forecast for Selected Indicators

ICT IN PAKISTAN: 2015-2018

SOCIAL/DEMOGRAPHIC FACTORS

Social demographic factors will play a critical role in the transformations set to take root in the country's ICT landscape. Pakistan's large and diverse population base generates a plethora of different socioeconomic and demographic forces that play a crucial role in crafting the contours of a sector. In particular, Pakistan is part of a cohort of countries whose large population is primarily young, in a developing economy with substantial room for growth. These structural dynamics combine to create a society whose ICT integration is bound to its inherent dynamism and evolutionary trajectory.

Recent advances in ICT infrastructure and services are acting as forces of change in societies. These resources and services are interlinked with the socio-demographic profile of a society. In Pakistan's context, the next five years in the country's ICT landscape will be heavily mediated by a combination of the forces that need to be carefully taken into account.

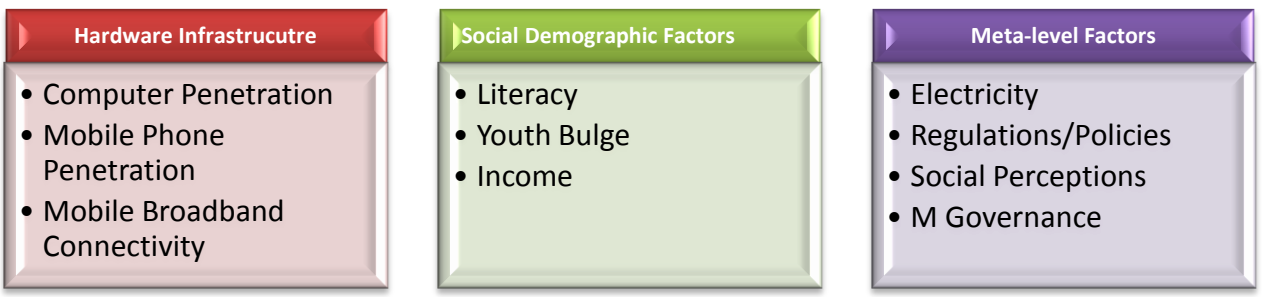
Forecast Framework

The current ICT landscape in Pakistan is moving beyond infancy in its evolution. The country has seen a gradual induction and integration of different dimensions of ICT in households, education, government, and enterprises. These changes have been driven together by the public and private sectors. In 2001, a tiny minority of the country's population was actively using ICT resources and services. The figures gleaned from Gallup-KPMG's National Study on Critical Indicators of Information Technology provide established ICT benchmarks in 2001. At the turn of the millennium ICTs had been recognized and proven to have catapulted economies into advanced stages of production and consumption. Taking cues from the accelerated integration of ICT tools in socioeconomic infrastructure around the world, Pakistan was beginning to lay down the foundations of its own ICT experience in 2001. Successful case studies of ICTs adding tremendous levels of economic value and opening up new vistas of growth and development instigated the Pakistan's Government to make ICT growth and expansion as a priority on the policy agenda.

In 2014, Gallup's nation-wide study on ICT Indicators, conducted on behalf of the National ICT R&D Fund, has captured a panoptical snapshot of country-wide availability and penetration of ICT resources. The preceding quantitative and qualitative analysis on the current ICT landscape in the country provides a longitudinal ICT development experience in Pakistan. This analysis of the well-established, methodical, and credible indicators (initiated by ITU) of ICT show that Pakistan has progressed well along different dimensions in this landscape. Although the gains are marginal on some of the core ICT indicators, growth in other areas has been significant. Notwithstanding this variance in results, ICT resources and services have proliferated to a wider section of the country's population. For instance, while television sets, cable television services, and mobile phones have become a ubiquitous feature of the ICT landscape in the country, mobile cellular services, and mobile phones have become a ubiquitous feature, computers and internet are still restricted a smaller proportion of the national population. These realities show that in 2014 Pakistan is set to enter into an expansionary stage in a cross-sectional integration of ICT in different realms.

Moving forward, the ICT landscape in Pakistan will be affected by a variety of inter-linked factors in the short term (2015-2018). A combination of infrastructural, demographical, and regulatory factors will combine to determine whether ICT penetration expands over the next five year period. To undertake a predictive analysis on the prospective growth in the ICT landscape, an analytical model combining these three factors will help ascertain the qualitative and quantitative shifts in ICT indicators. Given that the last twelve years (2001-2014) have seen a mixed growth pattern in the ICT landscape, predictions for the next four years (2015-2018) should be based on conservative estimations. The growth trajectory for ICT indicators in Pakistan between 2015 and 2018 will remain positive, albeit with a variety of factors combining to exercise valence on the penetration of ICT indicators.

The following predictive model shows the three broad factors that will determine the course for ICT growth in the country in the next five year phase. This model is built on an overarching juxtaposition of the forces that carve the contours of the ICT environment. Evidence from across the world shows that when these composite factors align favourably, the level of ICT penetration in a state expands significantly. This analytical model, shown below, is based on three broad influencing categories: hardware/infrastructure, social demography, and meta-level factors. Each of these categories represents sub-factors that will play a crucial role in influencing how well ICT indicators are able to expand their penetration in the country. Each of these broad categories and their enumerated sub-factors will be analyzed at depth in the following pages.



Hardware Infrastructure

Physical hardware infrastructure is an indispensable ingredient of the extent of ICT proliferation, as well as the quality of services applied in different national realms. The economic value of technological infrastructure has been widely debated and proven. Perhaps, the most important of such discursive contributions on the value added by technology was in the seminal work done by Robert Solow. Solow showed that American economic expansion and development, particularly in the post-World War II phase was a consequence of technological improvements and inputs into the economic system. This emphasis on technology is associated directly with the quality of the technological infrastructure and hardware available.

Communicative networks and technologies in the ICT landscape, as well as their applications in a society are a product of the quality and dispersion of hardware products and resources. Beyond the diffusion of ICTs, their usage and value-addition is also closely intertwined with the availability and quality of hardware infrastructure in a country. Hardware infrastructure affects the economic value added by ICT through three pathways. First, the dispersion of hardware technologies in a society facilitates its widespread penetration and usage. Second, the quality of hardware infrastructure determines the value addition to the consumption and production processes in an economy. Third, equality of accessibility determines whether all segments of a society are able to adequately capture the value added by ICTs; as well as the gains made are distributed equally through the ubiquitous integration of ICTs in a society.

ICT hardware and infrastructure have met varying degrees of success in terms of penetration over the last decade or so. The earlier sections of this report provided an extensive analysis on the current state of ICT hardware penetration in the country. In this context, ICT hardware and infrastructure penetration between 2015 and 2018 is set to face the following growth prospects.

Computer Penetration:

Computers have been at the very core of driving the information and communications revolution around the world. The technical capacity and performance of these machines have enabled the mass integration of ICTs into social, economic, and political spheres. In 2001, Pakistan was at the earliest stages of computer integration and usage. The 2001 Gallup-KPMG National ICT Indicators report provided estimations of the average ratios of branded and unbranded computers in the country. These ratios provided an estimation of the total PC population in the country. The table below provides the details published in the 2001 report.

Type of Organization	Branded	Unbranded	Total
Households	34,100 **(6.25%)**	511,500 **(93.75%)**	545,600 **(100%)**

Source: Gallup-KPMG National Study on Critical Indicators of Information Technology - 2001

If this population is assumed as a proxy for total households, then 545,600 households in the country had a computer in 2001. This number shows that a small proportion of households in Pakistan had access to a computer. The country had begun to trigger the national computerization process.

In 2014, the level of computerization in the country has changed significantly. This report presented data on computer penetration in Pakistani households in 2014. The following table is reproduced from Section 1 to provide a detailed breakdown of this indicator:

Table 4.1 **Penetration of Computers in Pakistani Homes 2014**

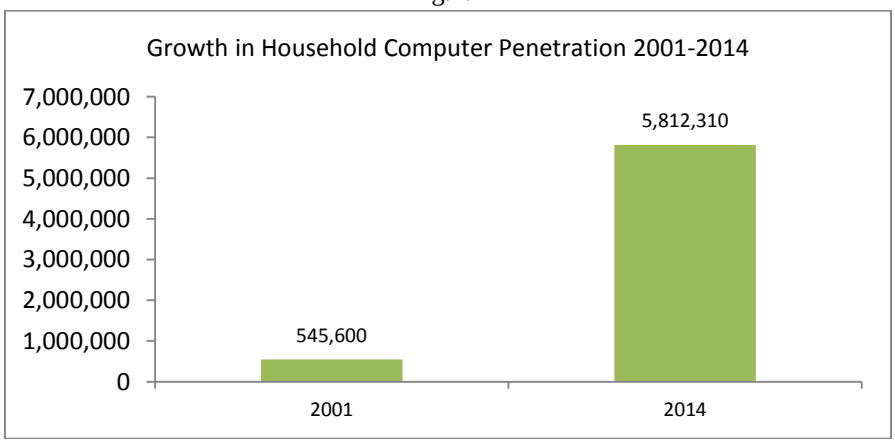
(Row %)

		Q8. Do you have a computer in your house? Regardless of whether that computer is used or not?	
		Yes	**No**
All Pakistan		22%	78%
Gender	**Male**	24%	76%
	Female	19%	81%
Age of the Respondent	**Under 30**	26%	74%
	30 - 50	19%	81%
	51+	15%	85%
Education	**Low**	10%	90%
	Medium	26%	74%
	High	49%	51%
HH Income	**Low (Quintile #1)**	7%	93%
	Medium (Quintile #2)	13%	87%
	High (Quintile #3,4,5)	28%	72%
Location	**Urban**	32%	68%
	Rural	17%	83%
Province	**Punjab**	18%	83%
	Sindh	22%	78%
	KPK	39%	61%
	Balochistan	20%	80%

Source: Pakistan ICT Indicators Survey 2014

The total number of households in Pakistan in 2014 was 26,419,591. Given that 22% of all households in the country reported having a computer at home, this translates into 5,812,310 households in the country with a computer in 2014. These numbers from 2001 and 2014 can be analyzed together to reveal the growth in household computer penetration in the twelve year period.

Fig.4.1



Source: Gallup-KPMG National Study on Critical Indicators of Information Technology 2001
Pakistan ICT Indicators Survey 2014

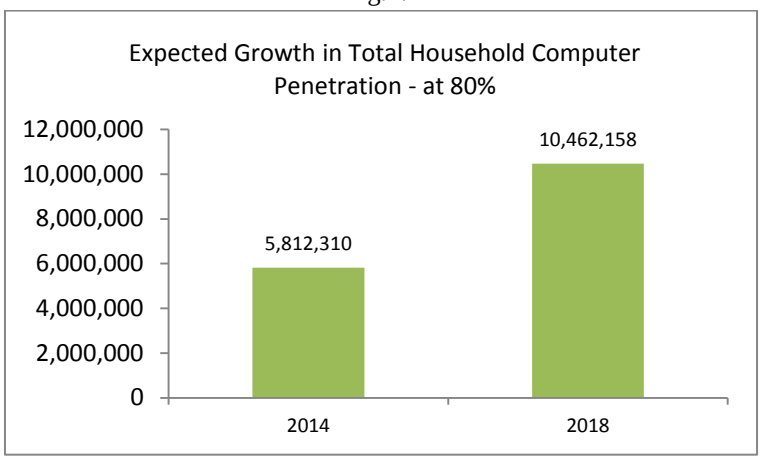
The increase from 545,500 households with computers in 2001, to 5,812,310 households with computers in 2014 translates into a total increase of **965%**. This exponential rise in the total household computer penetration level indicates that the ICT landscape has experienced a substantial deepening of the level of computerizations.

Over the twelve year period analyzed in this report (2001-2014), the per annum increase in computer penetration at the household level was 80.4%. The overall computerization of Pakistani households has witnessed significant expansion. However, this growth must be contextualized by considering the overall size

of the population/households in the country. 78% of all households in the country do not possess a computer, which leaves a substantial scope for growth and expansion on this indicator.

Between 2014 and 2018, a conservative growth estimate would entail maintaining the current growth trajectory in household computer penetration level. If the 80% expansion rate is maintained in the short term (2014-2018), this would translate into a total household computer population of 10,462,158 in 2018.

Fig.4.2



Source: Projection based on Data from Pakistan ICT Indicators Survey 2014

This conservative estimate takes into account exogenous factors that could influence computer penetration in the country. Economic growth, consumer income expansion and distribution, and official regulations will all determine the extent of expansion in the overall computerization of the society. In this context, the level of computerization in Pakistan will remain positive and will move ahead on an upward trajectory. Substantial sections of the country's population have still to use a computer, which implies that there is a significant scope for growth over the next four years in the expansion of computer hardware in the country – which is indispensable for driving other associated ICT indicators.

Mobile Phone Penetration:

Mobile cellular phones and services have been the most dominant and cognizable feature of the ICT landscape in the country for more than a decade. Amidst tough economic challenges, the telecommunication sector has been crucial in driving economic growth, investment, and employment in the country. Globally, mobile cellular hardware and services have opened up new horizons for ICT growth, especially in terms of mobile communication networking. Growth in this mobile telecommunication sector has generated tremendous socioeconomic impacts on the country from productivity gains, revenue generation, consumer spending, employment generation, social communication and connectivity, and governmental, financial, educational, and health-related services. These gains have been captured and analyzed by the Pakistan Telecommunication Authority extensively.

The importance of mobile telephonic hardware in driving ICT growth has been witnessed in numerous countries around the world. The increasing communication, internet connectivity, and application-based advances in cellular hardware are altering the structural dimensions in societies and economies. Given the tremendous growth in mobile cellular penetration in the country, these gains have slowly been realized in Pakistan through improvements in the mobile cellular hardware and infrastructure.

Pakistan Telecommunication Authority has been capturing, recording, and disseminating critical data on this sector since 2002-2003. This data indicates that mobile cellular penetration in the country in 2002-2003 stood at 2.4%.[26] This penetration data from 2002-2003 indicates that at the turn of the millennium Pakistan

[26] PTA Annual Report: http://www.pta.gov.pk/annual-reports/annrep0607/chapter_4.pdf

was beginning to experience the induction of mobile-cellular technologies and services. Since then the country has experienced an aggressive expansion in the mobile telecommunication sector. In 2014, the overall mobile cellular penetration in the country stood at 72%. This growth in national mobile cellular penetration is represented in the Table below:

Mobile Cellular Penetration	
2003	**2014**
2.4%	72%

The overall mobile cellular penetration in the twelve year period (2003-2014) increased by a remarkable **2900%**. This substantial increase in mobile cellular penetration shows that the cellular telecommunication sector has been the driving force for expansion in Pakistan's ICT landscape.

Notwithstanding this impressive growth, the growth rate has been slowing in the last five years. Data represented in the earlier sections of this report, as well as the data provided by PTA shows that over the last six years 2009-2014, mobile cellular penetration in the country has grown as following:[27]

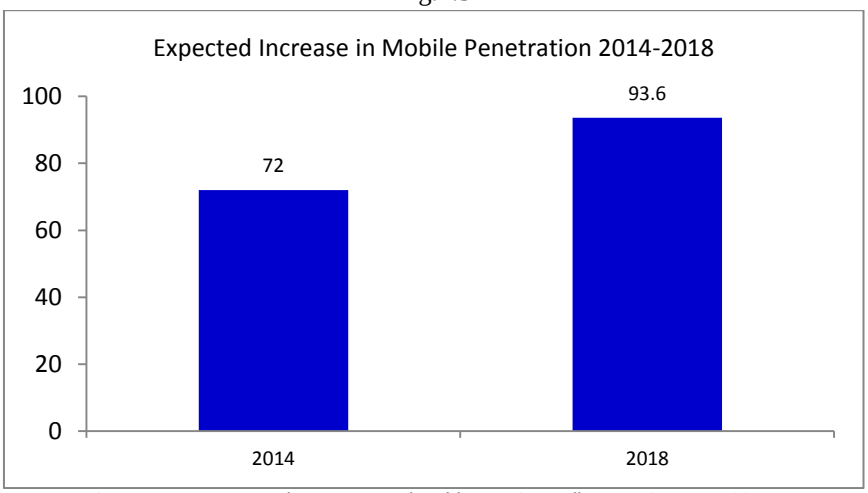
National Mobile Penetration Increase (2009-2014)				
2009	**2010**	**2011**	**2012***	**2014**
55%	57%	62%	67%	72%

*This is the second most recent figure available

In the six year period, 2009-2014, mobile penetration levels in the country increased by 31%. Furthermore, this growth translates into an average of 6.2% per annum between 2009 and 2014. This growth trend shows that the bulk of the increase in national mobile penetration occurred in the 2002-2009 period. Current data from around the world (discussed in Section 3) shows that mobile cellular penetration levels are decreasing in different regions.

In the short term, 2014-2018, the national, regional, and global indications point to a deceleration in the mobile cellular penetration levels. However, a significant portion of the country's population (28%) is still to be captured by active mobile cellular usage. Conservatively, if the national penetration levels were to increase by the growth registered in the last five years i.e. 6%, the growth in mobile cellular penetration by 2018 is shown in the figure below:

Fig.4.3



Source: PTA Annual Reports and Pakistan ICT Indicators Surveys 2014

[27] PTA Annual Reports and Gallup Pakistan ICT Indicators Landscape

Section 4: Forecasting Broad Trends in the ICT Landscape: 2015-2018

If the conservative pace of expansion in national mobile penetration is maintained, Pakistan will reach an impressive 93.6% penetration level in 2018.

Increase in national mobile penetration has crucial implications for the hardware/infrastructure improvements in mobile phones. Globally, cellular phones are increasingly incorporating features that allow users to expand usage beyond telephonic or textual communication. Current feature and smartphones being used around the world, and increasingly in Pakistan, show that mobile cellular hardware is becoming the primary vehicle for carrying a multitude of ICT-related uses. With advanced capabilities, usage patterns are bound to incorporate enhanced activities that revolve around connecting to the internet and accessing a wider spectrum of ICT-based services and applications.

Mobile Broadband Connectivity:

Mobile phone hardware is the critical hardware responsible for incorporating a wider range of communication and networking possibilities in the ICT landscape. This trend is gaining momentum around the world. Smartphones are becoming the default for cellular hardware. These phones have incorporated a range of advanced computing technologies. Crucially, the mobility and universality attached to cellular hardware is brining advanced computing and ICT uses wider sections of domestic populations around the world.

In Pakistan's context, these hardware changes are critical to accelerating the pace of ICT usage, as well as closing cross-national and regional discrepancies in ICT penetration. While smartphones are still gaining traction with mobile cellular users in the country, "feature phones" are increasingly being sold and bought in the local cellular hardware market. These phones provide users with capabilities that expand the scope of usage from simple telephonic and textual communication. Users exposed to the various applications incorporated into feature and smart phones are able to use their cellular devices to perform a variety of functions that are provided through a single device. For instance, advances in cellular hardware have brought camera functionality to almost all users. With this function, users are able to capture pictures and videos, and share them in their social circles. As the hardware involved moves to higher levels, these captured images and videos can then be shared via data sharing and social networks that are easily accessible through modern phones. Pakistani cellular hardware users have already incorporated these uses into their cellular usage behaviours. This implies that as hardware advances in mobile phones are increasingly available to more Pakistani cellular subscribers, ICT penetration and usage should rise concurrently.

The uptake in advanced mobile cellular hardware will drive the short-term growth in the ICT sector. A number of indigenous companies have entered the hardware market with feature phones, tablets, and smartphones at a price point that is sure to attract consumers, particularly in the country's growing middle class. Advanced computing, data-related, and networking capabilities are enfolded within these devices. For the next four years, it can be reasonably expected that the ICT landscape will experience growth – particularly in internet usage and capabilities – proportional to the expansion in mobile cellular hardware and devices.

The 2014 Gallup's Pakistan ICT Indicators Survey provides a snapshot of the current broadband usage on mobile cellular devices in Pakistan. Data analyzed in Section 1 of this report shows that in 2014, 15,313,846 Pakistanis used the internet. Of these users, the split of mobile cellular internet users and all other internet users was as follows:

Table 4.2 **Split of Mobile Cellular Internet Users**

(Row %)

	Split of Mobile/Cellular users VS. all others users	
	Mobile/ Cellular users	**All others**
All Pakistan	11%	89%

Source: Pakistan ICT Indicators Survey 2014

Current data on the precise usage of data services provided by telecommunication companies is scant. Additionally, there are multiple claims on the precise quantification of this field. In this statistical lacuna, Gallup's nationwide study reveals empirical evidence of the approximate number of internet users who are accessing the internet via their cellular devices. As of 2014, 1,684,523 internet users accessed the internet through their cellular phones. Of the total mobile cellular subscriptions in the 2014 (128.93 million), this translates into a tiny 1.3% of the total cellular user base. However, in the next four years, the expected increase in the penetration of advanced cellular hardware should bring about an increase in the number of mobile cellular subscribers who use data services actively, and access the internet through their mobile cellular devices.

LITERACY:

Perhaps one of the most profound repercussions of ICT-generated changes and advances has been registered in the education sector. Modern education systems around the world have actively embraced and integrated ICT resources and solutions into curriculum, pedagogy, and inter-disciplinary research. Given the nature of modern ICTs, literacy has become an important element of the extent to which a user is able to access and apply ICT-based resources and solutions in their everyday context. The intertwined nature of literacy and ICT integration in a state is a feature of most advanced ICT societies and economies. Countries that have successfully adopted and implemented ICT resources and services on a mass-scale often have a highly literate population base, with high levels of educational achievements.

In Pakistan's context, education will play a critical role in affecting the evolution of the ICT landscape in the short and long-term. Over the last decade or so, Pakistan has been making impressive progress in education. In 2014, official statistics released in the Economic Survey of Pakistan revealed that the current literacy rate in the country is 58%.[28] This rate shows an increase from 2001-02 when literacy rate in the country was at 45%. More significantly, the youth literacy rate in the country (15-24 year olds) is 70.68% - above the national average.[29] These numbers indicate that Pakistan is gradually moving ahead in the national imperative to educate the society. Similarly, the overall enrolment at the higher education level has been increasing rapidly in the last few years, which portends an increase in the intake of ICT-based resources and tools in the country. Between 2010-11 and 2012-2014 the overall enrolment in Pakistan's universities increased from 1,107,700 to 1,602,500.[30] This expansion in higher education enrolment comes on the back of concerted investment and expansion in the sector in the last decade.

The nation-wide survey results discussed and analyzed in Section 1 of this report show that ICT usage increases in intensity and quality with rising educational levels. This implies that as literacy rates improve in quantity and quality in the country, it can be reasonably expected that an uptake in ICT usage will also be recorded over the next four years. An illustration of this feature of ICT usage in Pakistan is captured in the penetration of computers and internet usage at the household level. As education levels increase in a household – in particular when the household achieves higher education status – computer and internet penetration increases dramatically. The following tables from this study provide an indication of this strong correlation between education and ICT usage:

[28] Economic Survey of Pakistan: http://finance.gov.pk/survey/chapters_13/10-Education.pdf
[29] Asian Development Bank: http://www.adb.org/publications/basic-statistics-2013?ref=data/publications
[30] Economic Survey of Pakistan 2012-13: http://finance.gov.pk/survey/chapters_13/10-Education.pdf

Table 4.3 **Use of Internet and Computers**

(Row %)

		Q21. Have you used the internet in the last 12 months?	
		Yes	**No**
All Pakistan		9%	91%
Education	**Low**	1%	99%
	Medium	8%	92%
	High	35%	65%

(Row %)

		Q16. Have you ever used a computer in the last 12 months (it can be anywhere)?	
		Yes	**No**
All Pakistan		19%	81%
Education	**Low**	6%	94%
	Medium	22%	78%
	High	48%	53%

Source: Pakistan ICT Indicators Survey 2014

These tables show that as education levels increase from low to high – as is the case in Pakistan over the last few years – an increasing number of individuals and households are likely to adopt ICT usage. In 2014, 6% of all low-education level households had a computer. This proportion increased to a significant 48% of all households with higher-educational levels. Similarly, only 1% of low-education level households used the internet in the last 12 months. This proportion increases to 35% as the household education level increases to higher education. As the household education level increases, the likelihood of advanced ICT usage increases proportionally. Data presented and analyzed in this report shows that educational qualifications are a crucial determinant of core ICT indicator penetration in Pakistan.

This correlation can be mapped on to the recorded trend in higher education over the last few years. Today more Pakistanis are accessing higher education than ever before. Moreover, the federal and provincial governments have made concerted efforts to increase investments in the education sector, to improve the quantity and quality of education services in the country. Amidst this official push for enhancing national literacy and education levels, the private sector in education is flourishing, and provides an attractive substitute for public education in the country. Together, these broad trends point to an increase in national literacy rates over the next few years in general, and an accelerated increase in the number of higher education graduates in the country. This sectoral transformation in education throughout the country should translate into an increase in the integration and use of core ICT indicators – particularly computer and internet usage. With these factors in place, it can be reasonably expected that with an overall increase and improvement in the quantity and quality of educational services throughout the country, combined with the exponential growth in Pakistan's higher education sector over the last few years, core ICT indicators (computers and internet) at the household level will increase their penetration between 2015 and 2018.

YOUTH BULGE:

ICT usage is fundamentally drawn from the matrix of advanced communication technologies that have been incepted, developed, and integrated over the last two to three decades. This relatively recent origin of foundational ICT technologies is closely tied to the age profile of advanced and 'immersed' ICT users. Globally, ICT indicators find a greater penetration in the younger members of societies – for whom contemporary ICT technologies are an intuitive and natural framework for communication, education, and work. Simply put, countries with a younger population profile are more likely to have a higher ICT penetration, especially in the next few decades.

Pakistan is one of a select cohort of countries with a significant youth bulge taking shape in the country's demographic profile – reflective of the social demography found in other developing countries with large population bases. A large youth segment in the population infers that country should be well-positioned to extract productivity and competitiveness dividends that accrue in an economy with a young workforce. Pakistan's demographic profile shows that with its large, growing, and young population, the country is set to reap maximum economic dividends over the next few decades, albeit with the right policies and infrastructure support. As of 2014, Pakistan had a total population of 184.35 million, with an annual

population growth rate of exactly 2.00.[31] More importantly, the current and expected age profile of Pakistan's population up to 2030 is estimated as:[32]

Table 4.4 **Population by Age Groups**

(Million)

Age Group	2012	2014	2015	2020	2025	2030
00-04	22.22	22.40	22.76	23.28	22.44	20.35
05-09	20.63	20.87	21.33	22.35	22.95	22.18
10-14	19.73	19.56	20.07	21.24	22.28	22.88
15-19	20.57	**20.78**	**20.12**	**20.01**	**21.19**	**22.24**
20-24	18.22	**18.72**	**19.8**	**20.05**	**19.95**	**21.14**
25-29	15.70	**16.16**	**17.13**	**19.71**	**19.98**	**19.89**
30-34	13.40	**13.85**	**14.72**	**17.04**	**19.62**	**19.91**
35-39	11.19	**11.57**	**12.4**	**14.62**	**16.94**	**19.53**
40-44	9.34	**9.69**	**10.36**	**12.27**	**14.49**	**16.81**
45-49	7.58	7.85	8.49	10.2	12.01	14.31
50-54	6.22	6.44	6.88	8.26	9.95	11.84
55-59	4.99	5.16	5.53	6.57	7.93	9.6
60-64	3.90	4.03	4.31	5.13	6.14	7.45
65+	7.04	7.28	7.82	9.39	11.39	13.93
Total	**180.71**	**184.35**	**191.72**	**210.12**	**227.26**	**242.06**

Source: Economic Survey of Pakistan (Multiple Years)

In 2014, out of a total population of 184.35 million, 90.77 million were in the age group 15-44, which translates into **49.23%** of the total population. By 2030, Pakistan's total population is expected to reach 242.06 million, with 119.52 million in the age group 15-44 (49.37% of the total population). These numbers show that Pakistan's youth bulge has expanded, and will retain its proportional demographic dominance of the total population over the next decade and a half.

The link between youth and ICT usage is a consistently recorded demographic feature around the world. Section 1 of this report delved into the link between youth and ICT usage in Pakistan. Computer and internet usage tends to be higher in younger members of a society. This reality was captured in Section 1 of this Report, where computer and internet usage by age group was presented. This association between age and ICT usage is presented below:

Table 4.5 **Use of Internet and Computers in Age Cohorts**

		Q16. Have you used a computer in the last 12 months (it can be anywhere)?	
		Yes	**No**
All Pakistan		19%	81%
Age of the Respondent	**Under 30**	26%	74%
	30 - 50	14%	86%
	51+	7%	93%

		Q21. Have you used the internet in the last 12 months?	
		Yes	**No**
All Pakistan		9%	91%
Age of the Respondent	**Under 30**	14%	86%
	30 - 50	5%	95%
	51+	4%	96%

Source: Pakistan ICT Indicators Survey 2014

[31] Economic Survey of Pakistan: http://finance.gov.pk/survey/chapters_13/12-Population.pdf
[32] Ibid.

The link between ICT usage and age is evident from these figures. The highest incidence of computer usage in Pakistan's population is in the age group under 30 years – 26%. This penetration declines to 14% in those aged 30-50, and falls to 7% in those above 51 years. Similarly, the highest incidence of internet usage is found in those aged below 30 years – 14%. This penetration declines to 5% of those aged 30-50 years, and 4% of those aged above 51 years. ICT usage indicator data in Pakistan shows a clear correlation between age and ICT usage. This usage is consistent from trends around the world, where ICT usage and application is higher in the younger sections of the population.

This association implies that between 2015 and 2018, ICT usage in Pakistan will also expand as a consequence of the youth bulge in the country. Given that the literacy rate in the country is increasing, and an increasing proportion of the youth is able to access higher education, over the next four years a significant expansion in nation-wide ICT usage will be driven by an expansion in the youth segment of the population.

INCOME:

The ICT infrastructure is based on a plethora of technologies made possible by tremendous advanced in computing. These technologies and the associated resources are generally expensive, given their novel origins and constant improvements. However, as the stability of the primary infrastructure increases, alongside continual innovations, ICT technologies are becoming cheaper. The decrease in cost generally increases accessibility to middle and lower income households in a society. Globally, the differentials in ICT usage amongst countries are most accurately predicted by income differences. High and middle income countries feature towards the higher end of the ICT usage penetration index. Contrarily, low income countries exist on the lower end of the ICT usage penetration index. Economic discourse and vocabulary is increasingly incorporating the "digital divide" element to explain economic performance within and between countries, which alludes to the core income differences and inequality factors.

Within countries, ICT penetration is well-demonstrated through individual and household income levels. Generally, as income increases, ICT usage increases proportionately. Evidence for this association is present in the 2014 ICT usage statistics from Pakistani households. The following tables demonstrate the link between income and ICT penetration on two core indicators: computers and internet:

Table 4.6 **Use of Internet and Computers in Income Cohorts**

	Q21. Have you used the internet in the last 12 months?		
		Yes	**No**
All Pakistan		9%	91%
HH Income	**Low (Quintile #1)**	3%	97%
	Medium (Quintile #2)	2%	98%
	High (Quintile #3,4,5)	12%	88%

	Q8. Do you have a computer in your house? Regardless of whether that computer is used or not?		
		Yes	**No**
All Pakistan		22%	78%
HH Income	**Low (Quintile #1)**	7%	93%
	Medium (Quintile #2)	13%	87%
	High (Quintile #3,4,5)	28%	72%

Source: Pakistan ICT Indicators Survey 2014

Households that fall in the higher income quintile are more likely to own a computer in Pakistan. Whereas only 7% of low income households in the country have computers, 28% of all high income households own computers. Similarly, while only 3% of low income individuals in the country use the internet, the proportion

increases to 12% of all high income individuals. These numbers indicate that income is an important determinant of ICT usage penetration in the country.

Over the next four years (2015-2018), ICT usage in the country will expand commensurate with the increase in income on two levels. First, on the national level, income and the general economic performance will determine the scale of ICT penetration in the country. If Pakistan registers strong economic development, income levels should rise in the country, thereby pushing ICT usage to a higher level. Second, increasing national income would incur increase in household income levels. As more households join the middle and upper income quintiles, their spending power would increase. Specifically, more Pakistani households and individuals would increase their accessibility and usage of computers and the internet, if their incomes increase. Increase in income would ensure that more households are able to purchase the basic hardware required to access the internet – computers. With a deeper hardware penetration, internet usage should also pick up in the country. Another important and critical issue in the association between income and ICT usage is equality. ICT penetration acquires depth in a society when incomes are more equally distributed. However, if income levels tend to concentrate at the highest level, access to ICT remains concentrated and limited. Notwithstanding these considerations, Pakistan's developing economy has substantial scope for expansion. If this expected acceleration in economic development is achieved, ICT usage over the next four years should increase as a consequence of rising national and household income

META-LEVEL FACTORS

While demographic and infrastructural dynamics play a key role in determining ICT penetration and growth, a host of meta-level forces – unique to Pakistan's circumstances – will also bear down on the country's ICT usage. The factors identified in this discussion are rooted in the current conditions in the country. More specifically, these meta-level factors are derived from a panoptical conceptualization of Pakistan's state and society. Each of these factors will act in confluence to affect the overall structural dynamics vis-à-vis ICT access, adoption, and penetration in Pakistan. Changing conditions in the three realms identified here will exercise influence on how well the country does over the next four years in the expected uptake in ICT penetration.

ELECTRICITY:

The discussion in this Section began with analyzing the importance of hardware infrastructure in ICT usage penetration. The core hardware technologies in ICT landscape are heavily dependent on a stable supply of electricity for power. Without access to electricity, improvement and expansion in hardware cannot translate into greater ICT penetration. Over the last few years, substantial growth in the country's population, as well as expansion in the economy has put immense pressures on national power generation capacity.

A brief glance at the official Government of Pakistan statistics and records shows that Pakistan is currently undergoing acute power crisis. The shortfall between the demand and supply of electricity in the country is a symptom of decades of policy failures, inefficiencies, and mismanagement in the power sector. Inefficiencies in the current power generation capacity in general, and inadequate power generation capacity specifically, have combined to impose severe restrictions of growth in Pakistan's developing economy over the last few years. Additionally, accelerating demand (from commercial and domestic consumers), fuel supply limitations, and seasonal variations in the hydropower generation capacity have combined over the last few years to exacerbate the severity of the crisis.

Section 4: Forecasting Broad Trends in the ICT Landscape: 2015-2018

The Government of Pakistan, in its National Power Policy outlined the major challenges facing the country's power sector. At present, the gap between demand and supply of electricity hovers between 4,500-5,500 MW – an enormous gap that triggers 12-16 hours of load-shedding across the country.[33] Furthermore, high electricity generation costs from over-dependence on thermal fuel sources – 44% of total generation, ranging between Rs..12-23 per unit – have crippled the power sector through two channels: first, highly expensive power generation makes the current energy supply unaffordable for large swathes of the country's population; second, in a sluggish economy starved for revenue sources, over-dependence on expensive imported fuel for power genereation restricts adequate fuel supply in the current generation infrastructure.[34] The power supply in the country is also severely undermined through an inefficient power transmission and generation infrastructure, and theft that combine to incur additional losses of 23-25%, thereby pushing the actual cost of electricity delivered to Rs.. 15.60 per unit.[35] The current severity of the power crisis in the country can be deduced from the monthly National Generation/Demand Scenario published by the Ministry of Water and Power. In January 2014, the peak elecrticity shortfall in the country hit 4,161 MW – electricity demand in the winter season is considerably lower than the summer season in the country. This shortfall is shown in the Table below:[36]

Table 4.7 **National Generation/Demand Scenario**

NATIONAL GENERATION / DEMAND SCENARIO												
JANUARY 2014												
AVERAGE							PEAK					
Hydel	Thermal	IPPs	Total	KESC EXPORT	Demand	Shortfall	Hydel	Thermal	IPPs	Total	Demand	Shortfall
(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)
811	2,113	5,690	8,614	627	11,912	3,298	1,595	1,988	5,876	9,460	13,620	4,161

Source: Ministry of Water and Power

This state of affairs has critical implications for the future of ICT usage in the country. Power shortages pose challenges to the existing commercial and domestic hardware infrastructure in the country. Rolling load-shedding limits the ability of ICT users to maximize their usage, and stay connected via communication networks. More importantly, the current power crisis in the country inhibits growth in the ICT sector by dampening economic growth, and removing incentives for additional commercial and industrial investments in the sector. If energy shortages in the country persist over the short and medium term, growth and expansion in nation-wide ICT usage can be expected to be stunted, despite the optimistic predicted growth in the national ICT landscape. In particular, between 2014 and 2018, Pakistan's energy crisis will remain a critical issue on the national agenda, and will play its part in determining the overall growth trajectory in ICT.

Notwithstanding the grim scenario rooted in Pakistan structural and institutional afflictions in the energy sector, there are signs for remaining optimistic. The current government has outlined its policy priorities by placing the energy crisis at the top of its agenda. Creation of the National Power Policy is indicative of a sincere and concerted effort by this government to resolve Pakistan's power crisis on a "war footing".

[33] Private Power and Infrastructure Board: http://www.ppib.gov.pk/National%20Power%20Policy%202013.pdf
[34] Ibid.
[35] Ibid.
[36] Ministry of Water and Power: http://www.mowp.gov.pk/gop/index.php?q=aHR0cDovLzE5Mi4xNjguNzAuMTM2L21vd3AvZnJtRGV0YWlscy5hc3B4P29wdD1wdWJsaWNub3RpY2VzJmFtcDtpZD0y

Prioritizing and resolving this critical issue over the next three to four years will help remove the limitations imposed by a national shortfall in energy generation and distribution. Additionally, indigenous companies and consumers have reacted admirably to the challenges erupting from this crisis. Many companies in the private sector have introduced and adopted innovative technological and hardware solutions to overcome the power shortage that would otherwise limit Pakistani ICT users' ability to remain connected through communication networks. These innovative solutions to circumvent the "energy challenge", as well as the policy prioritization of the power crisis should act in conjunction to mitigate some of the challenges to growth in the ICT sector over the next four years.

REGULATIONS AND POLICIES:

One of the most oft-repeated and discussed issue in Pakistan's flourishing telecommunications industry is the impending sale if 3G and 4G licenses to telecom operators in the country. At present, five cellular mobile operators are providing services on the GSM technology platform. The rapid expansion in the telecommunication industry has also paved the way for deploying advanced networks (R4/NGN), which has helped expand mobile cellular coverage to over 90% of the country's population. Given this depth of mobile cellular penetration, the telecommunications industry is gearing up for upgrading its network technology to the 3rd and 4th Generation communication and connectivity. The expected auctioning of licenses and the subsequent deployment of these network technologies will play a critical role increasing the velocity of ICT usage in Pakistan.

3G and 4G mobile telecommunications technologies support services that provide information and transfer data at a rate of at least 200kbit/s. These network platforms support a range of wireless applications, including voice telephony, mobile internet access (advanced versions offer broadband access at several Mbit/s to latest cellular phones), mobile television, video calling etc. The impending induction of these technologies in Pakistan will have a bearing on the changes in Pakistan's ICT landscape over the next few years. Given that mobile cellular services are nearly universal throughout the country, and a large proportion of the country's population uses mobile cellular phones regularly, the rolling out of 3G and 4G services will have a transformational effect on internet access and connectivity in the country. With substantial mobile cellular penetration, Pakistan's mobile cellular subscribers will experience the opportunity to access a range of services and applications through data usage that does not rely on traditional computer hardware.

The Government of Pakistan in general and the Pakistan Telecommunication Authority in particular have made the auctioning of spectrum licenses for Next Generation Wireless Network services a key telecommunication priority.[37] These licenses will allow the country's telecommunication operators to introduce a range of innovative mobile networking services to Pakistani consumers. With the potential accessibility and networking services made available to Pakistani mobile cellular consumers through 3G and 4G platforms, the rate and penetration of ICT usage – particularly internet usage – in the country should pick up significantly. Crucially, these telecommunication technologies also offer hope that the current digital divide between Pakistan and other developing and developed economies can be bridged through the mobile cellular channel. Moreover, the range of application possibilities ushered in through enhanced networking services and capabilities will allow Pakistani mobile cellular users to also being using advanced mobile/wireless services including information, business, communication, financial services and banking (mobile money transfers are already flourishing in the country) at higher speeds.

[37] PTA: http://www.pta.gov.pk/annual-reports/annreport2013_1.pdf

In this context, the importance of facilitative and progressive regulatory environment cannot be overstated. The continuous evolution of the telecommunication and information sector is critical for galvanizing growth in ICT services and applications. The Government has to take the lead in ensuring that its policy objective of using ICT to unlock the potential value in social and economic networking in Pakistan is realized through a policy framework that allows development in this sector, while fulfilling the responsibility of protecting consumer rights. An optimal policy environment will encourage and incentivize existing and new investors enter Pakistan's sizable consumer market and tap the immense, unrealized potential that could be extracted if ICT penetration and usage increases in the country. The right mix of policy regulations in the country, and their timely deployment, will determine the magnitude of growth in Pakistan's ICT landscape between 2015 and 2018.

SOCIAL PERCEPTIONS:

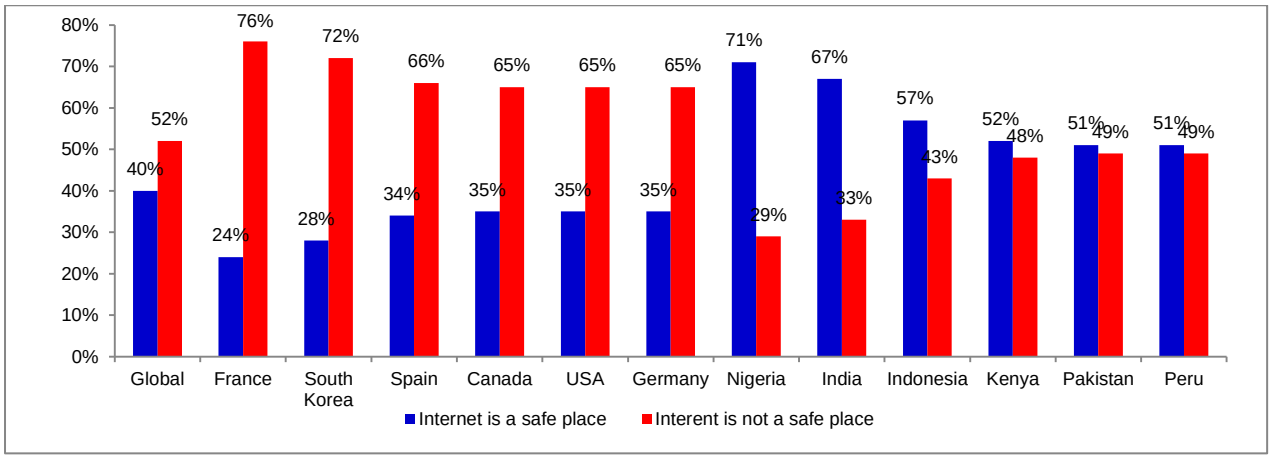
Social psychology offers unique insights into the attitudinal and normative approaches in a society towards particular issues. Social attitudes and reaction towards new technologies often determines whether the new technology is able to embed itself within the social structure. More specifically, social perceptions of and attitudes towards ICTs can act as a pivotal meta-factor that influences the overall rate and range of ICT services in a country.

Pakistan's ICT usage is greatly refracted by the prevailing social perceptions on some of core technologies and services in the ICT landscape. These perceptions are rooted in the overarching national discourse on global politics and culture. One explanation of this resistance to ICT integration could lie in the extensive research and analysis available in global cultural politics and post-colonial political discourse. The Western origins of most contemporary communication technologies cast them as a product of an alien culture seeking complete hegemony and domination. For many Pakistani citizens, integrating ICT usage in their social behaviours and communications is a matter of concern: the tremendous communicative networking potential poses challenges to personal, cultural, gendered, familial, and ethnic boundaries. Unless the right mix of education, age, and exposure intervene, many Pakistanis – able to integrate ICTs – withhold ICT consumption based on the societal suspicion attached to the perceived corrosive effects ICT usage. In this cultural context, changes in social perceptions of and attitudes towards ICTs can create further penetrative growth in ICT usage in the country in the short term.

Social incredulity towards ICTs in Pakistan is also reflective of a global trend: the internet's boundless communicative landscape is also a space without privacy. Since its worldwide acceptance and usage, while the internet has removed informational and communication barriers, it has also unleashed new challenges to privacy and personal security. This sentiment is captured in a recent cross-national survey conducted by GlobeScan and BBC World Service across 17 countries and 17,000 respondents between December 2014 and February 2014. Globally, just over one in two citizens (52%) believe that the internet is not a safe place to express personal opinions.[38] In Pakistan, 49% of the respondents agreed with the global sentiment, and expressed the opinion that the internet is a hazardous space for expressing personal opinion.[39] While the majority of the respondents from Pakistan felt that the internet is safe for free expression (51%), a significant proportion of the country views the internet as an unsafe place. The results from this extensive cross-national study on social perception of the internet are shown in the figure below:

[38] GlobeScan and BBC World Service Poll: March 31st 2014
[39] Ibid.

Fig.4.4 **Social Perception of the Internet**



Source: Globescan and BBC World Service Poll 2014

Globally, a greater number of internet users are increasingly becoming distrustful of the core promise of the internet: unbridled free speech and privacy. Critically, the recent revelations of massive global internet communication surveillance conducted by the US and UK – on domestic and foreign users – will continue to make the internet a contested space, unguarded against the political objectives of ICT hegemons. In Pakistan's context, while a slight majority of internet users feel free to express their views on the internet, a sizable proportion of the population retains its apprehensions with regards to the structure, use, and impact of internet-powered communicative networks.

In order to make rapid advances in ICT integration in Pakistan over the short term, social perceptions need to be carefully managed so as to ensure that the personal and cultural sensitivities of the Pakistani society remain protected. In this context, educating the public on the structure and potential of ICTs can play a significant role in placating the subtle socio-cultural and political perceptual negativities attached to the internet.

M-GOVERNANCE:

One of the widely-recognized and influential effects of the emergence of ICTs around the world has been the induction of ICTs in government institutions around the world. The economic and social value unleashed by the use of ICTs has been enthusiastically embraced by developed countries, whose governments have taken an active and flourishing interest in transforming conventional government infrastructure into a modern, ICT infrastructure. The latent benefits held within this active ICT usage in governance have been quantitatively and qualitatively proven throughout the world. Transforming governance through ICTs yields crucial benefits to states. For democracies, e-governance allows the government to remain engaged with the citizenry, and incorporate active citizen partnership in the governance processes. Crucially, e-governance has helped trigger inclusive, participatory, accountable, transparent, and sustainable development. This result has important implications for a developing country like Pakistan aiming to accelerate socio-economic development in the country. Furthermore, e-governance brings efficiency into the government's institutional infrastructure, thereby making the government service delivery operations agile, responsive, and accountable.

Notwithstanding these benefits of e-governance, Pakistan has been outperformed by most developing countries with similar socio-economic and demographic characteristics. The country was ranked 156 out of 193 countries in the 2012 E-Government Survey conducted by the United Nations. Coupled with the low ICT

penetration on other core indicators (internet usage, computer usage etc.) in the country, e-government remains as yet, an unfulfilled dream in Pakistan.

In this context, a complementary solution has been proposed by experts as a more feasible and instantaneously applicable framework, namely "m-governance" or mobile governance. M-governance is based on the large extant mobile cellular infrastructure in the country. It incorporates strategies and processes for delivering public services through wireless and mobile technologies. The instantaneous, efficient, and cheaper communicative interaction provided by mobile cellular networks allows governments to reach the citizens through an efficient route. In Pakistan, mobile cellular has attained a penetration rate of 72%, with 92% of the country's population serviced by mobile cellular networks, and a subscriber base of 128.93 million users in 2013. These numbers indicate that m-governance can be an effective route for delivering ICT-based public services to Pakistani citizens.

Traditional ICT infrastructure (fixed lines, optical fibres etc.) requires significant investments to achieve the same penetration levels as mobile cellular networks. In particular, remote areas are better covered through mobile cellular networks, as opposed to internet or wired services infrastructure. This observation is true for Pakistan where mobile cellular networks are optimally placed to create strategic efficiency gains for governance and public service delivery improvements. Given Pakistan's existing mobile cellular telecommunication network infrastructure, the Government of Pakistan can move towards m-governance, which delivers mobile public services to Pakistani citizens all across the country. Moving governance services to the mobile cellular network can further deepen investments in this sector, while simultaneously inducting productivity and efficiency gains in the public and private sector interactions. Over the course of the next four years, the Government of Pakistan can usher in immediate expansion in the overall ICT landscape in general, and e-governance in particular by seizing upon the comparative advantage that the country has already built in its mobile cellular telecommunication network through the m-governance framework.

SECTION 5

REGRESSION ANALYSIS FOR CORE ICT INDICATORS

Regression Analysis for ICT Usage (Household Module)

5.1 Background to the Model Specification:

The regression model specified here seeks to address the availability statistic of ICT usage among households. This availability statistic is formulated as an index variable (Servedhhs), aggregating a range of ICT components and assigns a value of 1 in case one or more ICT components are present in the household (by extension assigning a value of 0 in case no ICT component is present in the household). This index variable (Servedhhs) is characterized as a dependant binomial variable which depends on a host of other independent variables. In such a scenario, the regression framework employed is the binomial logistic regression or simply the logit regression.

This type of logistic regression assumes a logistical distribution of the error term and is generally preferred to a probit model which assumes normal distribution of the error term. Logistic regression can in many ways be seen to be similar to ordinary regression. It models the relationship between a dependent and one or more independent variables, and allows us to look at the fit of the model as well as at the significance of the relationships (between dependent and independent variables) that we are modeling. However, the underlying principles of binomial logistic regression, and its statistical calculation, are quite different to ordinary linear regression. While ordinary regression uses ordinary least squares to find a best fitting line, and comes up with coefficients that predict the change in the dependent variable for one unit change in the independent variable, logistic regression estimates the probability of an event occurring (e.g. the probability of a pupil continuing in education post 16). What we want to predict from a knowledge of relevant independent variables is not a precise numerical value of a dependent variable, but rather the probability (p) that it is 1 (event occurring) rather than 0 (event not occurring). This means that, while in linear regression, the relationship between the dependent and the independent variables is linear, this assumption is not made in logistic regression. Instead, the logistic regression function is used.

5.2 Description of Variables:

The variables employed in any regression model can be classified into the Left Hand Side (LHS) variables and Right Hand Side (RHS) variables. In our case, the following variables have been used in the regression model:

S.No	Variable Name	RHS/LHS	Continuous/Discrete	Description
1	Servedhhs	LHS	Discrete	An index of ICT availability, assuming a value of 1 if one of more ICT components are present and a value of 0 if no ICT component is present
2	Gender	RHS	Discrete	The dummy variable for the gender of the respondent, assuming a value of 0 for females and 1 for males
3	edu_med	RHS	Discrete	A dummy variable for medium level of educational attainment, assuming a value of 1 for mid-level education and 0 for any other level of education
4	edu_high	RHS	Discrete	A dummy variable for high level of educational attainment, assuming a value of 1 for high level education and 0 for any other level of education
5	Age	RHS	Continuous	Age of respondent in years
6	Urban_rural	RHS	Discrete	A dummy for the location of the respondent, assuming a value of 0 for rural areas and 1 for urban areas
7	computer	LHS	Discrete	An index of computer availability, assuming a value of 1 if a computer is present and a value of 0 if no computer is present
8	internet	LHS	Discrete	An index of internet availability, assuming a value of 1 if internet is present and a value of 0 if no internet is present
9	income_med	RHS	Discrete	A dummy variable for medium level of income, assuming a value of 1 for mid-level income and 0 for any other level of income
10	income_high	RHS	Discrete	A dummy variable for high level of income, assuming a value of 1 for high level income and 0 for any other level of income

5.3 Regression Analysis for ICT Usage (Household Module)

Logit Regression for ICT Availability:

```
Iteration 0:   log likelihood = -1555.0192
Iteration 1:   log likelihood = -1289.0721
Iteration 2:   log likelihood = -1264.8644
Iteration 3:   log likelihood = -1264.5932
Iteration 4:   log likelihood = -1264.5928
Iteration 5:   log likelihood = -1264.5928

Logistic regression                             Number of obs   =       3000
                                                LR chi2(7)      =     580.85
                                                Prob > chi2     =     0.0000
Log likelihood = -1264.5928                     Pseudo R2       =     0.1868
```

Servedhhs	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Gender	1.356751	.1061362	12.78	0.000	1.148728	1.564774
edu_med	.9379156	.1189486	7.89	0.000	.7047806	1.171051
edu_high	1.495406	.2146246	6.97	0.000	1.07475	1.916063
Age	-.0297104	.004816	-6.17	0.000	-.0391495	-.0202713
Urban_rural	.1969193	.1146052	1.72	0.086	-.0277028	.4215413
income_med	.1961111	.1335486	1.47	0.142	-.0656394	.4578617
income_high	1.067565	.1204864	8.86	0.000	.8314155	1.303714
_cons	.6542558	.1991322	3.29	0.001	.2639639	1.044548

Regression Analysis:

The results of the logit regression on the variable Servedhhs is depicted in the table above. For this regression, standard demographic characteristics (listed on the left side of the table) were utilized. The first parameter to consider is the Pseudo R^2 which shows that the range of demographic variables explains about 18.7% of the variability in the dependent variable. This suggests a relatively good fit of the logit model and this value of Pseudo R^2 is generally considered acceptable.

The variable Gender (Coef: 1.36, p=0) shows a positive and significant effect on the probability of dependent variable Servedhhs. It shows that the males are more likely to have at least one ICT component as compared to females.

The variable edu_med (Coef: 0.94, p=0) shows a positive and significant effect on the probability of dependent variable Servedhhs. However the effect of edu_high (Coef: 1.49, p=0) has much more influence on the probability of dependent variable Servedhhs. This shows that the marginal effect of education from a shift from medium to higher levels of education has a much more pronounced impact on the probability of availability of ICT components.

The variable Age (Coef:-.03, p=0) has a negative and significant impact on probability of ICT availability. As the age increases, a person is less likely to employ ICT components.

The variable Urban-rural (Coef: 0.19, p=0.086) has a positive and insignificant impact on probability of ICT availability. This suggests that the coefficient is statistically equivalent to 0 at 95% confidence interval.

The variable income_med (Coef:0.196, p=0.14) has a positive and insignificant impact on probability of ICT availability. This again implies that the coefficient is statistically equivalent to 0 at 95% confidence interval. However, the variable income_high (Coef:1.07, p=0) has a positive and significant impact on probability of ICT availability. This suggests that income mobility from the medium strata to the high strata, increases the probability of having at least one ICT component and this increase in probability is statistically significant.

5.4 Marginal Effects After Logit:

```
Marginal effects after logit
      y  = Pr(Servedhhs) (predict)
         =   .8450749
```

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
Gender*	.1864105	.01472	12.66	0.000	.157557	.215264	.538333
edu_med*	.11406	.01349	8.45	0.000	.087614	.140506	.373667
edu_high*	.1392805	.0133	10.47	0.000	.113218	.165343	.16
Age	-.0038898	.00063	-6.21	0.000	-.005118	-.002661	33.7763
Urban_~l*	.0251521	.01429	1.76	0.078	-.002856	.05316	.316667
income~d*	.0246503	.01614	1.53	0.127	-.006979	.056279	.199333
income~h*	.1496824	.01793	8.35	0.000	.11455	.184815	.584667

(*) dy/dx is for discrete change of dummy variable from 0 to 1

The marginal effects analysis, illustrated in the table above, shows the impact on the probability of ICT availability from a 1 unit increase in the dependent variable. The column named dy/dx computes these marginal impacts. Apart from Age, all other variables have a positive marginal impact on the probability of ICT availability. In aggregate terms, a representative household is 84.5% likely to employ at least one ICT component, which is shown by the parameter Pr(Servedhhs).

5.5 Probability of ICT Availability by Sample Household Characteristic

Marginal effects after logit
y = Pr(Servedhhs) (predict)
= .96176226

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
Gender*	.0955131	.01406	6.79	0.000	.067953	.123073	1
edu_med*	.0539652	.01017	5.31	0.000	.034041	.073889	1
edu_high*	.0368827	.00671	5.50	0.000	.023735	.050031	.16
Age	-.0010926	.00024	-4.50	0.000	-.001569	-.000616	33
Urban_~l*	.007938	.00466	1.70	0.089	-.001197	.017073	1
income~d*	.0079024	.00527	1.50	0.134	-.002436	.018241	1
income~h*	.0442048	.0075	5.90	0.000	.02951	.058899	.584667

(*) dy/dx is for discrete change of dummy variable from 0 to 1

As an extension of the marginal effects analysis, we have computed the probability of ICT availability for a respondent with a hypothetical set of characteristics. They are:

- Respondent is a male
- He has medium level of education
- He earns medium level of income
- He is aged 33
- He lives in an urban area

While these hypothetical set of characteristics don't exactly replicate the exact demographic characteristics, they provide a useful insight into the main determinants of ICT usage. For these hypothetical demographic characteristics, the probability of using at least one ICT component is 96%. This means that a respondent with the above mentioned characteristics is 96% likely to employ at least one ICT component, a significantly higher probability than the average ICT availability.

5.6 Predicted Gender-wise Logit Probabilities

logit: Predicted probabilities of positive outcome for Servedhhs

Gender	Prediction
0	0.7243
1	0.9108

	Gender	edu_med	edu_high	Age	Urban_rural	income_med	income_high
x=	.53833333	.37366667	.16	33.776333	.31666667	.19933333	.58466667

Next we consider the predicted value analysis for the variable Gender. It shows that the predicted probability of having at least one ICT component for a female is 72.4% while for a male this probability is 91%. There is an 18.6% greater chance of a male having at least one ICT component as compared to a female. In this analysis, all the remaining variables are construed at their mean values.

5.7 Predicted Education-wise Logit Probabilities

logit: Predicted probabilities of positive outcome for Servedhhs

edu_med	Prediction
0	0.7935
1	0.9075

	Gender	edu_med	edu_high	Age	Urban_rural	income_med	income_high
x=	.53833333	.37366667	.16	33.776333	.31666667	.19933333	.58466667

Continuing with the predicted value analysis for the education variable, there is a 79.3% probability of a person without a medium education level of availing at least one ICT component. On the other hand, a person with a medium education level has a 90.7% likelihood of availing at least one ICT component. . In this analysis, all the remaining variables are construed at their mean values.

5.8 'redicted Urban/Rural-wise Logit Probabilities

logit: Predicted probabilities of positive outcome for Servedhhs

Urban_rural	Prediction
0	0.8367
1	0.8619

	Gender	edu_med	edu_high	Age	Urban_rural	income_med	income_high
x=	.53833333	.37366667	.16	33.776333	.31666667	.19933333	.58466667

The predicted values for the location of the respondent depict an 83.6% probability in rural areas of owning an ICT component as compared to a probability of 86.2% for a respondent in the urban areas. This shows that a shift from rural to urban areas does not cause a significant shift in the likelihood of owning an ICT component. Again, all the remaining variables are construed at their mean values.

5.9 Predicted Income-wise Logit Probabilities

logit: Predicted probabilities of positive outcome for Servedhhs

income_high	Prediction
0	0.7450
1	0.8947

	Gender	edu_med	edu_high	Age	Urban_rural	income_med	income_high
x=	.53833333	.37366667	.16	33.776333	.31666667	.19933333	.58466667

The income wise predicted values show that the probability of owning an ICT component is significantly lower (74.5%) for respondents not in the high income categories. This compares to a probability of 89.5% for respondents earning a high level of income. Thus a shift to a high income strata increases the probability of owning an ICT component by 15%.. All the remaining variables are construed at their mean values.

5.10 Logit Regression for Internet Availability:

```
Iteration 0:   log likelihood = -848.46359
Iteration 1:   log likelihood = -763.98667
Iteration 2:   log likelihood = -626.93528
Iteration 3:   log likelihood = -620.18689
Iteration 4:   log likelihood = -620.02631
Iteration 5:   log likelihood = -620.02573
Iteration 6:   log likelihood = -620.02573

Logistic regression                             Number of obs     =       3000
                                                LR chi2(7)        =     456.88
                                                Prob > chi2       =     0.0000
Log likelihood = -620.02573                     Pseudo R2         =     0.2692
```

internet	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Gender	.3107472	.1583436	1.96	0.050	.0003994	.6210949
edu_med	1.218657	.2693418	4.52	0.000	.6907566	1.746557
edu_high	2.796386	.2645664	10.57	0.000	2.277845	3.314926
Age	-.03005	.0081913	-3.67	0.000	-.0461047	-.0139953
Urban_rural	1.247051	.1570092	7.94	0.000	.9393191	1.554784
income_med	-1.594186	.4321359	-3.69	0.000	-2.441157	-.7472157
income_high	.2418407	.2102636	1.15	0.250	-.1702684	.6539499
_cons	-3.711663	.400505	-9.27	0.000	-4.496639	-2.926688

The results of the logit regression on the variable internet are depicted in the table above. For this regression, standard demographic characteristics (listed on the left side of the table) were utilized. The parameter Pseudo R^2 which shows that the range of demographic variables explain about 26.9% of the variability in the dependent variable. This value of Pseudo R^2 is sufficient considering the complexity of the model involved.

The variable Gender (Coef: 0.31, p=0.05) shows a positive and significant (on the margin) effect on the probability of dependent variable internet. It shows that the males are more likely to have internet component as compared to females.

The variable edu_med (Coef: 1.22, p=0) shows a positive and significant effect on the probability of dependent variable internet. However the effect of edu_high (Coef: 2.8, p=0) has much more influence on the probability of dependent variable internet. This shows that the marginal effect of education from a shift from medium to higher levels of education has a much more pronounced impact on the probability of the availing the internet component.

The variable Age (Coef:-.03, p=0) has a negative and significant impact on probability of internet availability. As the age increases, a person is less likely to employ the internet component.

The variable Urban-rural (Coef: 1.24, p=0) has a positive and significant impact on probability of internet availability. This suggests that the coefficient is statistically different from 0 at 95% confidence interval.

The variable income_med (Coef:-1.6, p=0) has a negative and significant impact on probability of internet availability. This again implies that the coefficient is statistically different from 0 at 95% confidence interval.

However, the variable income_high (Coef:0.24, p=0.25) has a positive and insignificant impact on probability of internet availability. This suggests that income mobility from the medium strata to the high strata, may not increase the probability of having the internet component and this increase in probability is statistically insignificant.

5.11 Probability of Internet Availability by Sample Household Characteristic

Marginal effects after logit
y = Pr(internet) (predict)
= .05058329

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
Gender*	.0130031	.00841	1.55	0.122	-.003473	.029479	1
edu_med*	.035077	.01534	2.29	0.022	.005005	.065149	1
edu_high*	.3252446	.10284	3.16	0.002	.123684	.526806	.16
Age	-.0014431	.00067	-2.15	0.031	-.002756	-.00013	33
Urban_~l*	.0355046	.01486	2.39	0.017	.006389	.06462	1
income~d*	-.1572493	.03117	-5.04	0.000	-.218346	-.096152	1
income~h*	.0114222	.01182	0.97	0.334	-.011751	.034596	.584667

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Again we perform the extension of the marginal effects analysis but this time on probability of internet availability. We have computed the probability of internet availability for a respondent with a hypothetical set of characteristics. They are:

- Respondent is a male
- He has medium level of education
- He earns medium level of income
- He is aged 33
- He lives in an urban area

For these hypothetical demographic characteristics, the probability of using the internet component is 5%. This means that a respondent with the above mentioned characteristics is 5% likely to employ the internet component, a slightly lower probability than the average internet availability of around 8.2%.

5.12 Logit Regression for Computer Availability:

```
Iteration 0:   log likelihood = -1745.7845
Iteration 1:   log likelihood = -1685.8594
Iteration 2:   log likelihood = -1684.8955
Iteration 3:   log likelihood = -1684.8944
Iteration 4:   log likelihood = -1684.8944

Logistic regression                             Number of obs   =       3000
                                                LR chi2(7)      =     121.78
                                                Prob > chi2     =     0.0000
Log likelihood = -1684.8944                     Pseudo R2       =     0.0349
```

computer	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Gender	.4263484	.0877215	4.86	0.000	.2544173	.5982795
edu_med	.4919451	.0994008	4.95	0.000	.2971231	.6867672
edu_high	.4258572	.1310308	3.25	0.001	.1690415	.6826729
Age	.0011258	.0041308	0.27	0.785	-.0069703	.009222
Urban_rural	-.3877957	.0967564	-4.01	0.000	-.5774348	-.1981565
income_med	-.5444491	.1426847	-3.82	0.000	-.8241059	-.2647923
income_high	.1602439	.107724	1.49	0.137	-.0508912	.371379
_cons	-1.435864	.1831059	-7.84	0.000	-1.794745	-1.076983

The results of the logit regression on the variable computer are depicted in the table above. For this regression, standard demographic characteristics (listed on the left side of the table) were utilized. The parameter Pseudo R^2 which shows that the range of demographic variables explain about 3.5% of the variability in the dependent variable. This value of Pseudo R^2 is generally on the lower side but still may provide some useful insight into the determinants of computer availability.

The variable Gender (Coef: 0.43, p=0) shows a positive and significant effect on the probability of dependent variable computer. It shows that the males are more likely to have the computer component as compared to females.

The variable edu_med (Coef: 0.49, p=0) shows a positive and significant effect on the probability of dependent variable computer. However the effect of edu_high (Coef: 0.43, p=0) has a much more uniform influence on the probability of dependent variable computer. This shows that the marginal effect of education from a shift from medium to higher levels of education has a uniform impact on the probability of the availing the computer component.

The variable Age (Coef:-.001, p=0.785) has a positive and insignificant impact on probability of computer availability. As the age increases, a person is more likely to employ the computer component but this increase in probability is statistically equivalent to 0 at the 95% confidence interval.

The variable Urban-rural (Coef: -0.39, p=0) has a negative and significant impact on probability of computer availability. This suggests that the coefficient is statistically different from 0 at 95% confidence interval.

The variable income_med (Coef:-0.54, p=0) has a negative and significant impact on probability of computer availability. This again implies that the coefficient is statistically different from 0 at 95% confidence interval. However, the variable income_high (Coef: 0.16, p=0.13) has a positive and insignificant impact on probability of computer availability. This suggests that income mobility from the medium strata to the high strata may not increase the probability of having the computer component and this increase in probability is statistically insignificant.

5.13 Probability of Computer Availability by Sample Household Characteristic:

Marginal effects after logit
y = Pr(computer) (predict)
= .22255546

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
Gender*	.0650868	.01436	4.53	0.000	.036945	.093228	1
edu_med*	.0735954	.0158	4.66	0.000	.042637	.104554	1
edu_high*	.079478	.02701	2.94	0.003	.02654	.132416	.16
Age	.0001948	.00072	0.27	0.785	-.001207	.001597	33
Urban_~l*	-.0741491	.01847	-4.02	0.000	-.11034	-.037958	1
income~d*	-.1078422	.02649	-4.07	0.000	-.159754	-.055931	1
income~h*	.0275164	.01922	1.43	0.152	-.010156	.065189	.584667

(*) dy/dx is for discrete change of dummy variable from 0 to 1

We perform the extension of the marginal effects analysis but this time on probability of computer availability. We have computed the probability of computer availability for a respondent with a hypothetical set of characteristics. They are:

- Respondent is a male
- He has medium level of education
- He earns medium level of income
- He is aged 33
- He lives in an urban area

For these hypothetical demographic characteristics, the probability of using the computer component is 22.2%. This means that a respondent with the above mentioned characteristics is 22% likely to employ the computer component, a slightly lower probability than the average computer availability of around 26.9%.

METHODOLOGY

METHODOLOGY

Based on the study objectives would be following three main modes of collecting data for this study:

1. Desk research using existing data sources
2. Quantitative Household Survey and Survey of other ICT Users (Educational Institutions, Businesses/Enterprises, Private and Government organizations etc.)
3. Qualitative Research (In-depth Interviews with key stakeholders).

For the Quantitative segment, we will conduct three surveys:

1- Household Survey of Adults in Pakistan (living in urban and rural areas of four provinces).

2- Survey of Educational Institutions (public as well as private across the country)

3- Survey of Enterprises

Below is the detailed methodology for each of these surveys:

I- HOUSEHOLD SURVEY OF ADULTS IN PAKISTAN

i.i (a) Universe

Pakistan's Population is around 180 million. Pakistan is heavily rural (67%); however, urbanization has been rising from 18% in 1951 after its independence to 33% in the latest census (1998). Pakistan has a federal structure with four provinces: Punjab, Sindh, KPK and Balochistan. The federal capital Islamabad is situated in Punjab and hence for segmentation purposes its population can be treated in Punjab.

Punjab is by far the largest population segment (55%) followed by Sindh (25%), KPK (15%) and Balochistan (5%).

All four provinces of Pakistan and the Capital Territory are included in the sampled population.

Approximately 4% of total population residing in special administrative or tribal units is excluded due to the inability to carry out standard random sampling/probability procedures as well as due to logistical / law and order constraints.

The universe for this Sample is based on the Population Projection of 2012, estimated on the basis of the latest available Census of National Population (1998).

i.i (b) Description of Sample Frame

The latest national Census data projected to 2012 will be used as the universe for this sample. This data will be classified by villages as the primary unit in the rural areas and urban census circles in the urban areas. We will adopt the same classification system for our primary sampling units. Thus the urban/rural variable will be determined by sample design.

i.i (c) Number of Sampling Points

Approximately 10 interviews will be conducted in each sampling point. There will be approximately 300 sampling points in the sample.

i.i (d) Method Of Stratification

Using a two-stage stratified sampling methods we will select 300 Primary Sampling Units, comprising Villages and Urban Circles in all the four provinces. Approximately 10 interviews will be carried out in randomly selected households in each location, thus completing a total sample of approximately 3000 men and women belonging to a national cross section in terms of gender, age and other socio-economic characteristics. The two stratifications are: first; Province, of which there are 4; and Rural-Urban, that is 2. Thus there are Eight (4×2) sub-universes. We make random selection from each of the 8 sub-universes by using the Probability Proportionate to Size (PPS) method.

i.i (e) Distribution of sampling points by region and urban/rural Strata

The survey will be conducted throughout the country of Pakistan, across the various regions and provinces according to their population size. The survey will cover all four provinces of the country, including their villages, towns and cities.

The distribution among the four provinces of the country will be broadly proportional to the shares of respective provinces in the national population.

But considering the low population and thus relatively small share of Balochistan in the sample, it might be over-sampled to have a considerable sized sample at Provincial level. The national average will be calculated by weighting of the final data.

Moreover rural-urban distribution of the sample might be varied according to specific research objectives in consultation with the Client.

The sample locations will be mutually agreed between the Client and GP.

i.i (f) Method Of Selecting Sampling Units

a. Selection of Primary Sampling points (PSU's)

Selection of sampling points will be done through a two-stage stratified random selection procedure. The first stratum is the province and second stratum is the rural villages and urban census circles.

Each stratum will be allocated its share through the probability proportionate to size (PPS) method.

Sampling points may be substituted for reasons beyond control, including destruction/loss of habitat, current military conflict and inaccessibility due to destruction of transportation Infrastructure or weather; although, this rarely happens. Such substitutions are reported in the Methods Report.

b. Selection of Sample Points

GALLUP PAKISTAN maintains an elaborate database on the population Universe in Pakistan. It uses an updated computerized version of the latest Census (1998). The universe database lists all villages in the country by Province (4), Districts (106), Sub Districts/Tehsils (378), Patwar Circles (a basic revenue collection unit) (10,435) and Villages (43,669). The Urban population is organized in 5,339 Census Circles.

In Rural Areas:

The list of Mauzas in all four provinces forms the sampling frame for rural sample. GALLUP PAKISTAN has developed an easy to use computer programme to randomly select the assigned number of primary Sampling units (Villages) in the Rural areas through the probability proportionate to Size (PPS) method.

In Urban Areas:

GALLUP PAKISTAN uses the Census database (as explained above) and lists all urban areas by their primary unit which is the Census Circle. The population of each Census circle is also available in an updated fashion. When the sample is to be selected the urban areas are selected from the list through a random (PPS) procedure.

c. Selection of starting points and Households (SSU's) within each sampling point

The first household in each sampling point will be chosen through randomizing the block, street and household. After a successful interview the next third household will be approached following the "right hand" random method.

i.i (g) Method Of Allocating Interviews to PSU's and SSU's

In each PSU 10 interviews will be conducted. Interview will be conducted after random selection of a respondent within a randomly selected household, as explained above.

After a successful interview every third household will be approached following the "right hand random" method.

i.i (h) Selection Procedure for Respondents

The respondent (male/female adult (18+) will be chosen randomly using a Kish gird from within the household.

The Secondary Sampling Unit or the respondent in the household will be chosen randomly from among all male adults or all female adults, as be case might be, in the chosen households. The method of Kish grid will be used for randomizing the target respondent within the household. All 18+, residents in a household are ordered by name in descending birth order. After listing household member in descending order, respondent will be selected by using a Kish Grid.

The procedure of two call-backs will be observed before substituting for the next randomly chosen household.

SNAPSHOT OF SAMPLE DISTRIBUTION

	Share in National Census Population	Share in Un-weighted Sample	Share in Weighted Sample
Gender			
Male	52%	55.7%	51.8%
Female	48%	44.3%	48.2%
Age			
18-29	42%	34.1%	34.0%
30-49	37%	54.8%	52.9%
50 +	21%	11.1%	13.1%
Geographic Code			
Urban	33%	30.4%	33.2%
Rural	67%	69.6%	66.8%
Province / City / Region			
Punjab	57%	25.0%	57.6%
Sindh	24%	25.0%	23.6%
Khyber Paktunkhawa	14%	25.0%	13.7%
Balochistan	5%	25.0%	5.1%

QUESTIONNAIRE FOR THE SURVEY CAN BE FOUND IN APPENDIX

II- SURVEY OF EDUCATIONAL INSTITUTIONS

We propose to do survey of educational institutions in order to gain data on usage of ICT by educational institutions in Pakistan.

Sample Size:

We proposed to survey 500 educational institutions across the country and in each institution interview 1 student and 1 teacher/administrator to have data on access and usage of ICT in educational institutes across the country. Thus we will have a survey of:

500 Educational Institutes
500 Students
500 Teachers and Administrators

Methodology

Sample Distribution:

We propose to have following quotas/ distribution for the sample of educational institutions:

a. Breakdown by Geography:

We propose to distribute in all four provinces, mainly large cities, some small cities and towns and small number of rural areas.

b. Breakdown by Education Level

We propose to divide sample into 20% schools of Primary-Middle, 40% of Secondary-Higher Secondary, 40% educational institutions of higher education including degree colleges and universities with graduate and post-graduate education.

c. Breakdown by Sector:

Within each level we propose an equal divide among Private and government run institutions.

d. Breakdown by Gender

We propose to get a mix of institutions such that both boys and girls studying in them are covered.

Sample Selection:

We propose to use list of schools, colleges, universities available from "Education Census Reports" to create a "Sampling Frame" and randomly select school or college or university. The schools might be selected using the random sampling locations selected for household survey as discussed previously. Within each institution, students and teachers will be randomly selected for interview. Moreover, some records might be obtained as well that might help in gaining information on some of the ICT Indicator.

QUESTIONNAIRE FOR THE SURVEY CAN BE FOUND IN APPENDIX

III- Survey of Enterprises in Pakistan

Sample Size:

Gallup would conduct survey of 500 Enterprises across Pakistan.

Sample Distribution:

A- Geography
Both urban/rural and all four provinces would be covered

B- Different types of Gallup would interview different types including
Size: (Small, Medium and Large)
Trade: (Services, Agricultural, Manufacturing)

QUESTIONNAIRE FOR THE SURVEY CAN BE FOUND IN APPENDIX

IV. Perceptual Survey for usage of ICT in Government Departments

The universe for this segment of survey work was key stakeholders across central government functionaries and the private sector. Sampling frame for this exercise has been maintained and consistently updated by Gallup. Consequently, the sample was randomly drawn such that each potential respondent represented a sampling unit.
A perceptual survey tool was employed to assimilate the best educated estimates of selected respondents for each of the devised indicators. The perceptual survey tool incorporated two parts, the first being educated perceptions regarding the usage of ICT in other government departments and the second part comprising educated perceptions regarding incidence of ICT in their own organization. The method of dispersion of survey instrument was predominantly by post.

V. Quality Assurance and Data Validation Exercise for Pakistan ICT Indicators Survey 2014

The National ICT R&D Fund Monitoring Committee highlighted certain issues concerning quality of the original survey. Gallup Pakistan, in view of addressing these concerns, formulated a Quality Assurance Report (QAR), incorporating several aspects of quality control for the survey conducted, including outlier analysis and duplication analysis. Gallup apprised the Monitoring Committee of these findings and both parties mutually decided to further augment the quality of the reported ICT Indicators by conducting a resurvey encompassing a subset sample of the original survey.

Consequently, a resurvey exercise was conducted for each of the three segments forming the ICT Indicators i.e. Households, Enterprises and Education Institutes segments. The field work for the resurvey exercise spanned a period from 21st May, 2014 to 26th May, 2014. For each of the three segments, 10% sample was drawn from the original sample in the following manner:

- For the Household segment, 10% of the PSUs were randomly drawn from the original sampled PSUs while the households within the PSUs were chosen randomly.
- For the Educational Institutes segment, 10% of the institutes themselves were chosen randomly from the full list of institutes surveyed in the original survey.
- For the Enterprises segment, 10% of the enterprises themselves were chosen randomly from the full list of enterprises surveyed in the original survey.

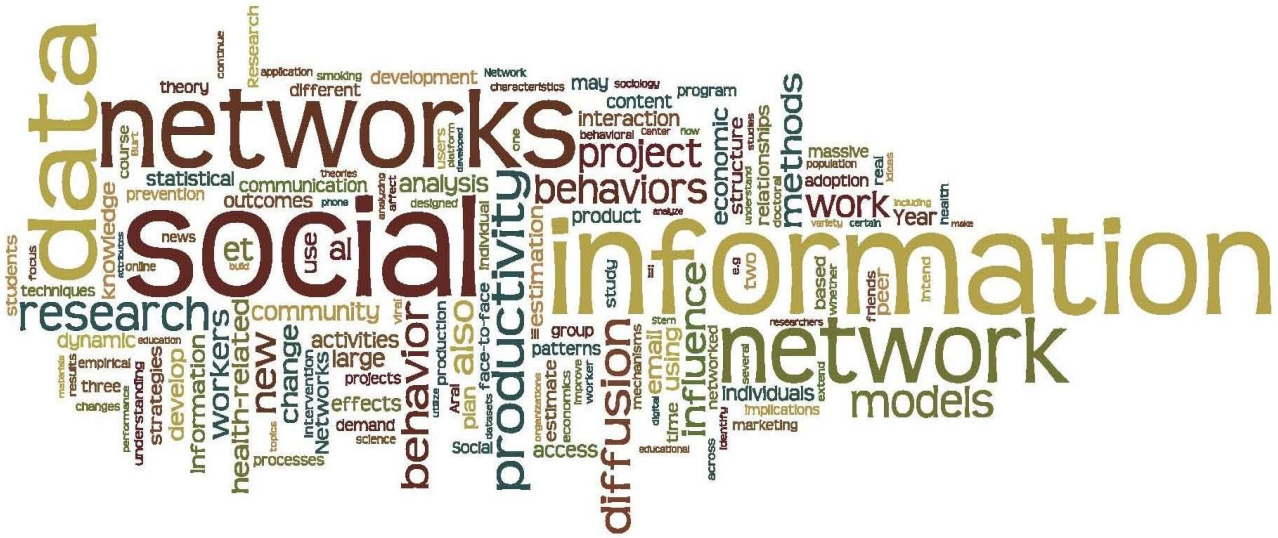
Additionally, for each segment, the survey instrument administered for the resurvey exercise remains unchanged. The ICT Monitoring Committee ensured effective monitoring of the resurvey exercise and the entire process was transparent
.
Based on the data received from the resurvey, Gallup Pakistan performed five tests to ascertain consistency of the original data in light of the resurvey data. These tests included:

i. Test of Significance
ii. NDR Analysis
iii. Regression Analysis
iv. Hypothesis Testing
v. Objectives vs. Outcomes analysis

The results of these tests were scientifically acceptable such that the average deviation between the resurvey and original survey data was only 7.6% which is well within the error margin in such resurvey exercises globally. Moreover, the test of significance also suggested an insignificant variation between the resurvey and the original survey data. All the tests mentioned above conform to international standards when investigating the integrity of data obtained from large surveys. The reader can refer to the bibliography to find a list of well reputed papers which detail the tests outlined above.

PAKISTAN ICT INDICATORS SURVEY – 2014

Volume II: Statistical Report



GALLUP
PAKISTAN
Affiliated with Gallup International
Pakistan's Foremost Social Research Lab

Table of Contents

Section 3: Enterprise based Indicators

Section 4: Production based Indicators

Section 5: Government based Indicators

INTRODUCTION

INTRODUCTION

Gallup Pakistan was commissioned by the National ICT R&D Fund to undertake a research study to update ITU ICT Indicators in Pakistan. Following a successful award of the project to Gallup, three modules of survey work were undertaken during December 2013:

Module 1:	HH Survey of n=3000 spread across Urban and Rural Pakistan, covering all four provinces of Pakistan.
Module 2:	Education Institutions Survey with n=523 institutions and n=518 students across the country.
Module 3:	Enterprise Survey with n=513 from Urban and Rural areas of Pakistan

The Report for this study comprises of two volumes:

Volume 1:	Descriptive of Analytical Report
Volume 2:	Statistical Report

This report is based on Volume 2 (Statistical report).

The Report comprises five sections with Tabular data for a total of 81indicators. In each of the five sections, Indicators covered are as follows:

Section 1:	HH based indicators	41
Section 2:	Education Institutions indicators	10
Section 3:	Enterprise Indicators	14
Section 4:	Production Indicators	9
Section 5:	Government Indicators	7

If there are any further queries regarding the tabular data, please do not hesitate to contact the undersigned.

Taimur Saeed
Project Lead from Gallup Pakistan

Section 1:

HOUSEHOLD BASED INDICATORS

Indicator # HH1: Total number of households in Pakistan

Table HH1: Total number of households in Pakistan	
	Year 2014
Total number of households in Pakistan	26,419,591
Source: Projection for 2014 using the Gallup Consumer Survey, 2013	

Indicator # HH2: Proportion of households with access to electricity

Table HH2: Proportion of households with access to electricity			
	1990	**2000**	**2010***
Households with access to Electricity	60%	80%	91%

Source: "Global Tracking Framework" issued jointly by the World Bank and the International Energy Agency

*This is the most recent figure available

Indicator # HH3: Proportion of households with a radio

Table HH3: Proportion of households with a radio

Q5. Do you or anyone in your household own a radio?

		Yes	No
All Pakistan		27%	73%
Gender	**Male**	32%	68%
	Female	21%	79%
Age of the Respondent	**Under 30**	28%	72%
	30 - 50	27%	73%
	51+	22%	78%
Education	**Low**	21%	79%
	Medium	32%	68%
	High	31%	69%
HH Income	**Low** (Quintile #1)	25%	75%
	Medium (Quintile #2)	17%	83%
	High (Quintile #3,4,5)	31%	69%
Location	**Urban**	23%	77%
	Rural	29%	71%
Province	**Punjab**	16%	84%
	Sindh	28%	72%
	KP	47%	53%
	Balochistan	37%	63%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH4: Proportion of households with a TV

Table HH4: Proportion of households with a TV

Q1. Do you or anyone at your home own a television?

		Yes	No
All Pakistan		80%	20%
Gender	**Male**	76%	24%
	Female	86%	14%
Age of the Respondent	**Under 30**	84%	16%
	30 - 50	79%	21%
	51+	72%	28%
Education	**Low**	71%	29%
	Medium	87%	13%
	High	92%	8%
HH Income	**Low** (Quintile #1)	66%	34%
	Medium (Quintile #2**)**	76%	24%
	High (Quintile #3,4,5)	85%	15%
Location	**Urban**	92%	8%
	Rural	75%	25%
Province	**Punjab**	83%	17%
	Sindh	76%	24%
	KP	87%	13%
	Balochistan	72%	28%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH5: Number of cable TV connections in Pakistan

Table HH5: Number of cable TV connections in Pakistan

Q.2 Do you have a cable connection at home?

	(2014[1])	(2010[2*])	(2008[2])
All Pakistan	11,317,583	9,787,450	7,224,553
Punjab	7,184,478	4,976,472	3,691,721
Sindh	3,856,790	4,222,472	3,022,452
KPK	226,080	495,624	423,214
Baluchistan	178,417	315,945	237,179
Rural	4,155,163	2,617,216	2,592,709
Urban	6,934,109	6,907,231	4,482,109

Note:

1. Pakistan ICT Indicators Survey, 2014 (Household Survey Module).
2. Gallup Media Survey

*This is the second most recent figure available

Indicator # HH6: Total population watching Cable Television

Table HH6: Total population watching Cable Television

Q.2 Do you have a cable connection at home?

	(2014[1])	(2010[2*])	(2008[2])	(2004[2])
	Pop 10+	Pop 10+	Pop 10+	Pop 10+
All Pakistan	66,075,042	55,073,585	39,439,130	18,161,049
Punjab	41,087,509	28,759,937	19,298,161	8,093,424
Sindh	20,193,097	19,441,241	16,400,319	8,819,062
KPK	1,887,213	3,397,978	1,503,679	543,407
Baluchistan	2,550,274	3,200,154	1,957,929	754,728
Rural	31,968,651	20,825,202	12,683,844	4,288,292
Urban	34,154,173	34,313,414	26,811,607	14,491,277

Note:
1. Pakistan ICT Indicators Survey, 2014 (Household Survey Module)
2. Gallup Media Survey

*This is the second most recent figure available

Indicator # HH7: Total population watching Terrestrial Television

Table HH7: Total population watching Terrestrial Television

Q.3 To access television content what form of connection do you use?

	(2014[1])	(2010[2*])	(2008[2])	(2004[2])
	Pop 10+	Pop 10+	Pop 10+	Pop 10+
All Pakistan	37,918,219	45,174,083	47,344,339	42,489,813
Punjab	17,479,583	25,435,028	30,750,367	27,867,132
Sindh	5,262,625	6,150,568	5,702,625	7,038,511
KPK	13,462,109	12,602,848	9,031,343	6,463,101
Baluchistan	2,118,394	1,333,899	2,072,392	1,178,607
Rural	31,974,548	40,198,925	40,080,186	28,805,087
Urban	5,912,107	4,928,431	7,223,984	13,590,475

Note:
1. Pakistan ICT Indicators Survey, 2014 (Household Survey Module)
2. Gallup Media Survey

*This is the second most recent figure available

Indicator # HH8: Proportion of Households with telephone

Table HH8: Proportion of Households with telephone

Q35. Do you have a telephone, as in a fixed landline connection at your home?

		Yes	No
All Pakistan		19%	81%
Gender	**Male**	18%	82%
	Female	21%	79%
Age of the Respondent	**Under 30**	19%	81%
	30 - 50	20%	80%
	51+	15%	85%
Education	**Low**	13%	87%
	Medium	22%	78%
	High	30%	70%
HH Income	**Low** (Quintile #1)	5%	95%
	Medium (Quintile #2)	10%	90%
	High (Quintile #3,4,5)	24%	76%
Location	**Urban**	24%	76%
	Rural	17%	83%
Province	**Punjab**	10%	90%
	Sindh	7%	93%
	KP	57%	43%
	Balochistan	24%	76%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH9: Proportion of Fixed Telephone lines per 100 inhabitants

Table HH9: Proportion of Fixed Telephone lines per 100 inhabitants

Q.35 Do you have a telephone, as in a fixed landline connection at your home?

	2009[2]	2010[2]	2011[2*]	2014[1]
All Pakistan	4	4	3	3

Note:

1. Pakistan ICT Indicators Survey, 2014 (Household Survey Module)
2. World Bank Data, 2014: Telephone lines (per 100 people)

*This is the second most recent figure available

Indicator # HH10: Proportion of households with a computer

Table HH10: Proportion of households with a computer

Q8. Do you have a computer in your house? Regardless of whether that computer is used or not?

		Yes	No
All Pakistan		22%	78%
Gender	**Male**	24%	76%
	Female	19%	81%
Age of the Respondent	**Under 30**	26%	74%
	30 - 50	19%	81%
	51+	15%	85%
Education	**Low**	10%	90%
	Medium	26%	74%
	High	49%	51%
HH Income	**Low** (Quintile #1)	7%	93%
	Medium (Quintile #2)	13%	87%
	High (Quintile #3,4,5)	28%	72%
Location	**Urban**	32%	68%
	Rural	17%	82%
Province	**Punjab**	18%	83%
	Sindh	22%	78%
	KP	39%	61%
	Balochistan	20%	80%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH11: Primary uses of computers at home

Table HH11: Primary uses of computers at home

Q9. If you use a computer then for what purpose do you use it? (multiple response)

		To use the internet	To watch videos	For analytical purposes	To gather information	Don't use it	Others
All Pakistan		29%	55%	13%	29%	22%	2%
Gender	**Male**	30%	62%	16%	30%	12%	1%
	Female	28%	45%	9%	26%	37%	3%
Age of the Respondent	**Under 30**	38%	60%	12%	35%	12%	3%
	30 - 50	20%	51%	14%	20%	32%	2%
	51+	17%	31%	10%	31%	52%	0%
Education	**Low**	8%	47%	5%	10%	44%	0%
	Medium	22%	59%	10%	22%	25%	3%
	High	50%	54%	21%	49%	8%	3%
HH Income	**Low** (Quintile #1)	28%	66%	7%	38%	10%	0%
	Medium (Quintile #2)	9%	74%	5%	16%	18%	0%
	High (Quintile #3,4,5)	32%	55%	14%	32%	22%	2%
Location	**Urban**	42%	55%	12%	39%	16%	4%
	Rural	18%	55%	14%	20%	28%	1%
Province	**Punjab**	33%	55%	7%	31%	19%	0%
	Sindh	53%	61%	11%	45%	10%	7%
	KP	10%	48%	13%	7%	35%	0%
	Balochistan	23%	59%	30%	38%	23%	4%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 662 (Computer Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH12: Percentage share of branded and unbranded computers

Table HH12: Percentage share of branded and unbranded computers

Q10. If you have a computer at you home, is it branded or non-branded?

		Branded	Non-branded	Don't Know
All Pakistan		54%	37%	9%
Gender	**Male**	52%	42%	6%
	Female	57%	29%	14%
Age of the Respondent	**Under 30**	58%	38%	4%
	30 - 50	49%	36%	15%
	51+	59%	28%	13%
Education	**Low**	49%	28%	23%
	Medium	50%	43%	7%
	High	64%	33%	3%
HH Income	**Low** (Quintile #1)	76%	14%	10%
	Medium (Quintile #2)	63%	24%	13%
	High (Quintile #3,4,5)	54%	40%	6%
Location	**Urban**	59%	31%	9%
	Rural	50%	41%	9%
Province	**Punjab**	56%	33%	11%
	Sindh	60%	33%	7%
	KP	27%	60%	13%
	Balochistan	86%	12%	2%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 662 (Computer Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH13: Percentage share of new versus used computers

Table HH13: Percentage share of new versus used computers

Q11. If you have a computer then how long ago did you buy it?

		1 month ago	1-3 months ago	3-6 months ago	6 months to 1 year ago	More than one year ago
All Pakistan		3%	5%	13%	19%	60%
Gender	**Male**	2%	5%	14%	19%	60%
	Female	4%	4%	13%	18%	61%
Age of the Respondent	**Under 30**	2%	4%	11%	19%	64%
	30 - 50	4%	5%	17%	19%	55%
	51+	0%	3%	17%	18%	62%
Education	**Low**	5%	6%	20%	18%	51%
	Medium	3%	4%	13%	19%	61%
	High	1%	4%	11%	19%	65%
HH Income	**Low** (Quintile #1)	0%	3%	0%	38%	59%
	Medium (Quintile #2)	3%	5%	16%	22%	54%
	High (Quintile #3,4,5)	2%	3%	13%	18%	64%
Location	**Urban**	3%	3%	10%	20%	64%
	Rural	3%	6%	16%	18%	57%
Province	**Punjab**	2%	4%	6%	26%	62%
	Sindh	1%	2%	5%	17%	75%
	KP	6%	10%	23%	15%	46%
	Balochistan	0%	0%	26%	13%	61%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 662 (Computer Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Indicator # HH14: Share of Laptops/notebooks versus desktops

Table HH14: Share of Laptops/notebooks versus desktops

Q12. If you have a computer, then what kind of a computer is it?

		Laptop/Notebook	Desktop	Both a laptop and a desktop
All Pakistan		17%	74%	9%
Gender	**Male**	17%	77%	6%
	Female	18%	69%	13%
Age of the Respondent	**Under 30**	16%	74%	10%
	30 - 50	17%	75%	8%
	51+	24%	62%	14%
Education	**Low**	16%	78%	5%
	Medium	12%	80%	8%
	High	24%	64%	12%
HH Income	**Low** (Quintile #1)	6%	86%	7%
	Medium (Quintile #2)	8%	84%	8%
	High (Quintile #3,4,5)	16%	74%	11%
Location	**Urban**	15%	76%	8%
	Rural	18%	72%	10%
Province	**Punjab**	11%	73%	16%
	Sindh	16%	75%	8%
	KP	28%	66%	5%
	Balochistan	12%	88%	0%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 662 (Computer Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH15: Proportion of individuals who used a computer in the last 12 months

Table HH15: Proportion of individuals who used a computer in the last 12 months

Q16. Have you ever used computer in last 12 months (it can be anywhere)?

		Yes	No
All Pakistan		19%	81%
Gender	**Male**	23%	77%
	Female	14%	86%
Age of the Respondent	**Under 30**	26%	74%
	30 - 50	14%	86%
	51+	7%	93%
Education	**Low**	6%	94%
	Medium	22%	78%
	High	48%	52%
HH Income	**Low** (Quintile #1)	9%	91%
	Medium (Quintile #2)	12%	88%
	High (Quintile #3,4,5)	23%	77%
Location	**Urban**	30%	70%
	Rural	14%	86%
Province	**Punjab**	18%	82%
	Sindh	19%	81%
	KP	24%	76%
	Balochistan	15%	85%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH16a: Proportion of households with Internet access

Table HH16a: Proportion of households with Internet access

Q17. Do you have internet access at your home (regardless of whether it is used or not)?

		Yes	No
All Pakistan		8%	92%
Gender	**Male**	9%	91%
	Female	7%	93%
Age of the Respondent	**Under 30**	12%	88%
	30 - 50	5%	95%
	51+	5%	95%
Education	**Low**	1%	99%
	Medium	7%	93%
	High	31%	69%
HH Income	**Low** (Quintile #1)	2%	98%
	Medium (Quintile #2)	1%	99%
	High (Quintile #3,4,5)	12%	88%
Location	**Urban**	17%	83%
	Rural	4%	96%
Province	**Punjab**	8%	92%
	Sindh	14%	86%
	KP	4%	96%
	Balochistan	7%	93%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH16b: Percentage of the population using internet

Table HH16b: Percentage of the population using internet

Q21.Have you used the internet in the last 12 months?

		Internet Usage	Internet Non-Users
All Pakistan		**8%**	**92%**
Age of the Respondent	**Under 25**	19%	81%
	25 – 30	10%	90%
	31– 40	6%	94%
	41- 50	4%	96%
	51- 60	4%	96%
	60+	5%	95%
Location	**Urban**	18%	82%
	Rural	5%	95%
Province	**Punjab**	9%	91%
	Sindh	14%	86%
	KP	4%	96%
	Balochistan	8%	92%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # HH17: Proportion of individuals who used the Internet in the last 12 months

Table HH17: Proportion of individuals who used the Internet in the last 12 months

Q21. Have you used the internet in the last 12 months?

		Yes	No
All Pakistan		9%	91%
Gender	**Male**	12%	88%
	Female	6%	94%
Age of the Respondent	**Under 30**	14%	86%
	30 - 50	5%	95%
	51+	4%	96%
Education	**Low**	1%	99%
	Medium	8%	92%
	High	35%	65%
HH Income	**Low** (Quintile #1)	3%	97%
	Medium (Quintile #2)	2%	98%
	High (Quintile #3,4,5)	12%	88%
Location	**Urban**	18%	82%
	Rural	5%	95%
Province	**Punjab**	9%	91%
	Sindh	14%	86%
	KP	4%	96%
	Balochistan	8%	92%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH18(a) Number of internet users in Pakistan

Table HH18(a) Number of internet users in Pakistan		
Q21.Have you used the internet in the last 12 months?		
		Yes
All Pakistan		15,313,846
Gender	**Male**	9,313,319
	Female	6,000,527
	Total	15,313,846
Age of the Respondent	**Under 30**	10,188,395
	30 - 50	4,562,901
	51+	562,549
	Total	15,313,845
Education	**Low**	1,129,710
	Medium	4,832,648
	High	9,351,488
	Total	15,313,846
HH Income	**Low** (Quintile #1)	493,995
	Medium (Quintile #2)	493,995
	High (Quintile #3,4,5)	14,325,856
	Total	15,313,846
Location	**Urban**	10,063,384
	Rural	5,250,461
	Total	15,313,845
Province	**Punjab**	6,875,604
	Sindh	5,000,439
	KP	1,125,099
	Balochistan	2,312,703
	Total	15,313,845

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Indicator # HH18(b): Location of individual use of the Internet in the last 12 months

Table HH18(b): Location of individual use of the Internet in the last 12 months (Multiple Response)

Q22. If yes, then where do you use the internet?

		Home	Work	Place of education	Another person's home	In a public area	Cyber cafe	Through the mobile phone	Others
All Pakistan		78%	11%	11%	12%	2%	7%	12%	0%
Gender	**Male**	71%	15%	11%	9%	3%	9%	12%	1%
	Female	94%	1%	11%	17%	0%	2%	14%	0%
Age of the Respondent	**Under 30**	78%	8%	15%	10%	1%	7%	16%	0%
	30 - 50	77%	18%	3%	14%	3%	8%	4%	1%
	51+	88%	13%	0%	25%	13%	13%	0%	0%
Education	**Low**	81%	0%	6%	13%	0%	13%	25%	0%
	Medium	68%	7%	8%	10%	1%	7%	20%	1%
	High	83%	14%	13%	13%	2%	7%	7%	0%
HH Income	**Low** (Quintile #1)	50%	7%	0%	14%	7%	14%	36%	0%
	Medium (Quintile #2)	54%	23%	8%	31%	15%	15%	0%	0%
	High (Quintile #3,4,5)	81%	10%	13%	12%	0%	7%	11%	0%
Location	**Urban**	84%	13%	15%	13%	0%	6%	11%	0%
	Rural	68%	7%	5%	10%	5%	10%	15%	1%
Province	**Punjab**	66%	13%	11%	18%	2%	9%	11%	0%
	Sindh	88%	11%	14%	11%	0%	8%	17%	0%
	KP	89%	0%	21%	0%	5%	0%	0%	5%
	Balochistan	86%	7%	0%	0%	2%	5%	14%	0%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level.

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling).

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles).

Indicator # HH18(c.) City-wise and urban-rural distribution of internet users

Table HH18(c.) City-wise and urban-rural distribution of internet users

Q.21 Have you used the internet in the last 12 months? + City of respondent (demographic)

		Internet Users			Internet Users
All Pakistan			**All Pakistan**		8%
High to Low: Top Cities	**KARACHI**	35%	**Location Wise**	**Urban**	18%
	GUJRAT	20%		**Rural**	5%
	JACOBABAD	20%			
	NASIRABAD	20%			
	SAHIWAL	18%			
	HARIPUR	17%			
	RAHIM YAR KHAN	17%			
	TOBA TEK SINGH	17%			
	SHEIKHUPURA	16%			
	RAWALPINDI	16%			
	KASUR	15%			
	QUETTA	15%			
	LAHORE	14%			
	DADU	13%			
	GUJRANWALA	12%			
	SARGODHA	12%			
	CHAGAI	10%			
	CHAKWAL	10%			
	KILLA SAIFULLAH	10%			

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level.

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling).

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles).

Indicator # HH19: Internet activities undertaken by individuals in last 12 months

Table HH19: Internet activities undertaken by individuals in last 12 months

Q25. In the past 12 months, what was the main purpose of using internet? (multiple response)

		For downloading	For education purposes	For sending and receiving email	To gain information about goods and services	To gain information about health	To gain information about government institutions	To gain telephone access on the internet that is VOIP	Dealing with government organizations	Internet banking	To buy goods and services (online shopping)
All Pakistan		72%	67%	60%	53%	40%	35%	16%	12%	9%	6%
Gender	**Male**	77%	64%	63%	46%	36%	35%	8%	13%	7%	4%
	Female	60%	73%	54%	69%	50%	37%	36%	8%	14%	13%
Age of the Respondent	**Under 30**	74%	74%	58%	53%	41%	35%	17%	11%	10%	6%
	30 - 50	72%	49%	66%	52%	37%	38%	13%	13%	7%	8%
	51+	50%	63%	50%	50%	38%	13%	25%	13%	0%	0%
Education	**Low**	87%	40%	40%	53%	33%	13%	7%	0%	20%	0%
	Medium	79%	51%	50%	40%	29%	27%	14%	7%	5%	5%
	High	67%	78%	67%	60%	46%	42%	18%	15%	10%	8%
HH Income	**Low** (Quintile #1)	86%	57%	43%	29%	21%	36%	14%	14%	14%	0%
	Medium (Quintile #2)	62%	46%	77%	31%	23%	23%	8%	0%	0%	0%
	High (Quintile #3,4,5)	71%	69%	58%	54%	42%	37%	16%	11%	9%	7%
Location	**Urban**	70%	72%	62%	58%	45%	34%	14%	8%	8%	5%
	Rural	75%	58%	57%	44%	32%	38%	20%	18%	11%	8%
Province	**Punjab**	70%	52%	57%	50%	25%	34%	21%	12%	12%	10%
	Sindh	76%	80%	65%	51%	49%	35%	16%	7%	6%	4%
	KP	74%	63%	89%	58%	89%	47%	16%	47%	11%	11%
	Balochistan	70%	86%	48%	61%	41%	36%	2%	2%	5%	0%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)
Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level.
Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling).
Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles).

Indicator # HH20: Major purposes (at least four main purposes) of using the internet

Table HH20: Major purposes (at least four main purposes) of using the internet

Q25. In the past 12 months, what was the main purpose of using internet? (multiple responses)

		For downloading	For education purposes	For sending and receiving email	To gain information about goods and services
All Pakistan		72%	67%	60%	53%
Gender	**Male**	77%	64%	63%	46%
	Female	60%	73%	54%	69%
Age of the Respondent	**Under 30**	74%	74%	58%	53%
	30 - 50	72%	49%	66%	52%
	51+	50%	63%	50%	50%
Education	**Low**	87%	40%	40%	53%
	Medium	79%	51%	50%	40%
	High	67%	78%	67%	60%
HH Income	**Low** (Quintile #1)	86%	57%	43%	29%
	Medium (Quintile #2)	62%	46%	77%	31%
	High (Quintile #3,4,5)	71%	69%	58%	54%
Location	**Urban**	70%	72%	62%	58%
	Rural	75%	58%	57%	44%
Province	**Punjab**	70%	52%	57%	50%
	Sindh	76%	80%	65%	51%
	KP	74%	63%	89%	58%
	Balochistan	70%	86%	48%	61%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level.

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling).

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles).

Indicator # HH21: Proportion of households with access to the Internet by type of access

Table HH21: Proportion of households with access to the Internet by type of access

Q27. If you used the internet what is the source of your internet connection? (multiple responses)

		Dial up	DSL	Wireless local loop	GPRS such as using internet on your mobile phone	Cable net	Wimax	Evdo	Others
All Pakistan		1%	38%	10%	17%	31%	5%	22%	1%
Gender	**Male**	2%	33%	9%	18%	30%	2%	26%	1%
	Female	0%	49%	12%	16%	33%	12%	11%	1%
Age of the Respondent	**Under 30**	2%	38%	11%	20%	30%	6%	18%	1%
	30 - 50	0%	36%	5%	11%	32%	4%	30%	3%
	51+	0%	50%	13%	0%	25%	0%	38%	0%
Education	**Low**	0%	25%	19%	31%	13%	0%	31%	0%
	Medium	1%	30%	6%	21%	30%	4%	23%	0%
	High	2%	44%	11%	14%	33%	6%	20%	2%
HH Income	**Low** (Quintile #1)	7%	36%	0%	43%	29%	0%	29%	0%
	Medium (Quintile #2)	0%	54%	0%	8%	38%	8%	8%	0%
	High (Quintile #3,4,5)	1%	41%	10%	15%	29%	6%	24%	1%
Location	**Urban**	1%	40%	13%	11%	40%	8%	15%	2%
	Rural	2%	35%	5%	27%	15%	1%	32%	0%
Province	**Punjab**	2%	44%	5%	15%	21%	2%	30%	0%
	Sindh	2%	18%	23%	17%	58%	12%	13%	4%
	KP	0%	5%	0%	37%	26%	0%	47%	0%
	Balochistan	0%	73%	2%	16%	9%	2%	5%	0%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level.

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling).

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles).

Indicator# HH22: Frequency of individual use of the Internet in the last 12 months

Table HH22: Frequency of individual use of the Internet in the last 12 months

Q26. In the past 12 months, if you used the internet, how frequently did you use it?

		At least once a day	At least once a week	At least once a month
All Pakistan		43%	36%	21%
Gender	**Male**	45%	35%	20%
	Female	38%	37%	25%
Age of the Respondent	**Under 30**	52%	33%	16%
	30 - 50	22%	43%	35%
	51+	38%	38%	25%
Education	**Low**	31%	44%	25%
	Medium	37%	42%	21%
	High	48%	31%	21%
HH Income	**Low** (Quintile #1)	36%	36%	29%
	Medium (Quintile #2)	31%	31%	38%
	High (Quintile #3,4,5)	44%	36%	20%
Location	**Urban**	44%	34%	21%
	Rural	41%	38%	21%
Province	**Punjab**	45%	28%	27%
	Sindh	52%	25%	23%
	KP	32%	63%	5%
	Balochistan	27%	66%	7%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level.

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling).

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles).

Indicator # HH23: Percentage of narrowband/dialup internet users versus broadband

Table HH23: Percentage of narrowband/dialup internet users versus broadband

Q27. If you used the internet what is the type of your internet connection?

		Narrow Band	Broad Band
All Pakistan		12%	88%
Gender	**Male**	14%	86%
	Female	6%	94%
Age of the Respondent	**Under 30**	15%	85%
	30 - 50	6%	94%
	51+	0%	100%
Education	**Low**	21%	79%
	Medium	18%	82%
	High	8%	92%
HH Income	**Low** (Quintile #1)	42%	58%
	Medium (Quintile #2)	8%	92%
	High (Quintile #3,4,5)	9%	91%
Location	**Urban**	5%	95%
	Rural	23%	77%
Province	**Punjab**	11%	89%
	Sindh	7%	93%
	KP	33%	67%
	Balochistan	14%	86%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH24: Split of fixed line internet usage versus wireless internet use

Table HH24: Split of fixed line internet usage versus wireless internet use

Q27. If you used the internet what is the source of your internet connection?

		Fixed Line	Wireless
All Pakistan		69%	31%
Gender	**Male**	64%	36%
	Female	81%	19%
Age of the Respondent	**Under 30**	70%	30%
	30 - 50	67%	33%
	51+	71%	29%
Education	**Low**	43%	57%
	Medium	62%	38%
	High	77%	23%
HH Income	**Low** (Quintile #1)	45%	55%
	Medium (Quintile #2)	91%	9%
	High (Quintile #3,4,5)	70%	30%
Location	**Urban**	83%	17%
	Rural	49%	51%
Province	**Punjab**	65%	35%
	Sindh	80%	20%
	KP	24%	76%
	Balochistan	81%	19%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator# HH25: Split of fixed/static internet users versus mobile users

Table HH25: Split of fixed/static internet users versus mobile users

Q27. If you used the internet what is the source of your internet connection?

		Fixed/Static Users	Mobile users
All Pakistan		69%	31%
Gender	**Male**	64%	36%
	Female	81%	19%
Age of the Respondent	**Under 30**	70%	30%
	30 - 50	67%	33%
	51+	71%	29%
Education	**Low**	43%	57%
	Medium	62%	38%
	High	77%	23%
HH Income	**Low** (Quintile #1)	45%	55%
	Medium (Quintile #2)	91%	9%
	High (Quintile #3,4,5)	70%	30%
Location	**Urban**	83%	17%
	Rural	49%	51%
Province	**Punjab**	65%	35%
	Sindh	80%	20%
	KP	24%	76%
	Balochistan	81%	19%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH26: Split of internet users from mobile/cellular phones versus others

Table HH26: Split of internet users from mobile/cellular phones versus others

Q27. If you used the internet what is the source of your internet connection?

		Mobile/ Cellular users	All others
All Pakistan		11%	89%
Gender	**Male**	14%	86%
	Female	6%	94%
Age of the Respondent	**Under 30**	14%	86%
	30 - 50	6%	94%
	51+	0%	100%
Education	**Low**	21%	79%
	Medium	17%	83%
	High	7%	93%
HH Income	**Low** (Quintile #1)	38%	62%
	Medium (Quintile #2)	8%	92%
	High (Quintile #3,4,5)	8%	92%
Location	**Urban**	4%	96%
	Rural	23%	77%
Province	**Punjab**	10%	90%
	Sindh	7%	93%
	KP	33%	67%
	Balochistan	14%	86%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH27: Proportion of internet users with both, mobile and fixed line internet connections

Table HH27: Proportion of internet users with both, mobile and fixed line internet connections

Q27. If you used the internet what is the source of your internet connection?

		Both	One of them
All Pakistan		79%	21%
Gender	**Male**	78%	22%
	Female	81%	19%
Age of the Respondent	**Under 30**	83%	17%
	30 - 50	72%	28%
	51+	63%	37%
Education	**Low**	56%	44%
	Medium	78%	22%
	High	83%	17%
HH Income	**Low** (Quintile #1)	100%	0%
	Medium (Quintile #2)	100%	0%
	High (Quintile #3,4,5)	78%	22%
Location	**Urban**	81%	19%
	Rural	76%	24%
Province	**Punjab**	78%	22%
	Sindh	75%	25%
	KP	68%	32%
	Balochistan	95%	5%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH28: Fixed internet subscribers per 100 inhabitants

Table HH28: Fixed internet subscribers per 100 inhabitants

Q27. If you used the internet what is the source of your internet connection?

		Fixed Internet Subscribers per 100 inhabitants
All Pakistan		5.47
Location	**Urban**	12.42
	Rural	2.24
Province	**Punjab**	5.07
	Sindh	8.81
	KP	0.91
	Balochistan	6.6

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3000 ; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # HH29: Fixed Broadband internet subscribers per 100 inhabitants

Table HH29: Fixed Broadband internet subscribers per 100 inhabitants	
Q27. If you used the internet what is the source of your internet connection?	
	Fixed Broadband Internet Subscribers per 100 inhabitants
All Pakistan	5.26

Indicator # HH30: Mobile broadband subscriptions per 100 inhabitants

Table HH30: Mobile broadband subscriptions per 100 inhabitants	
Q27. If you used the internet what is the source of your internet connection?	
	2014
All Pakistan	0.30
Note: Pakistan ICT Indicators Survey, 2014 (Household Survey Module) Source: "Active mobile-broadband subscriptions per 100 inhabitants 2012", Dynamic Report, ITU ITC EYE, International Telecommunication Union.	

Indicator # HH31. Fixed broadband Internet access tariffs per month in US$, and as a percentage of monthly per capita income

Table HH31 Fixed broadband Internet access tariffs per month in US$, and as a percentage of monthly per capita income		
Q.20 If you do pay money to use the internet, then approximately how much money do you spend each month?		
All Pakistan		
	Broadband Internet Access Tariff in US$	$11.23
	As a Percentage of Monthly Per Capita Income	10.69%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 202 (Broadband Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # HH32: International internet bandwidth per inhabitant

Table HH32: International internet bandwidth per inhabitant			
	2004	**2006**	**2007***
International Internet Bandwidth (bits per second) per inhabitant	2.71	16.05	43.48

Source:

Trading Economics (World Bank Data, 2014)

*This is the most recent figure available

Indicator # HH33: Proportion of individuals who used a mobile cellular telephone in the last 12 months

Table HH33: Proportion of individuals who used a mobile cellular telephone in the last 12 months

Q40. Have you used the mobile phone in the last 12 months?

		Yes	No
All Pakistan		99%	1%
Gender	**Male**	99%	1%
	Female	100%	0%
Age of the Respondent	**Under 30**	99%	1%
	30 - 50	100%	0%
	51+	100%	0%
Education	**Low**	99%	1%
	Medium	100%	0%
	High	99%	1%
HH Income	**Low** (Quintile #1)	100%	0%
	Medium (Quintile #2)	100%	0%
	High (Quintile #3,4,5)	99%	1%
Location	**Urban**	99%	1%
	Rural	100%	0%
Province	**Punjab**	100%	0%
	Sindh	97%	3%
	KP	100%	0%
	Balochistan	100%	0%

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000 (Personal Mobile Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Education codes: Low: Illiterate, Primary School and Religious Education only. Medium: Middle and Secondary School (Up to 11 years of schooling). High: Higher Secondary, College /Higher Education/Professional (12 years or more of schooling)

Income codes: Low: Up to Rs. 10,000 (in 2014 this represented the lowest quintile). Medium: Rs. 10,001 to 15,000 (In 2014 this represented the 2nd Quintile). High: More then 15,000 (In 2014 this represented the 3rd, 4th and 5th Quintiles)

Indicator # HH34: Percentage of population covered by a mobile cellular telephone network

Table HH34: Percentage of population covered by a mobile cellular telephone network

	2011*
All Pakistan	92%

Note:

Source: PTA Annual Report 2011

*This is the most recent figure available

Indicator # HH35: Mobile cellular telephone subscription per 100 inhabitants

Table HH35: Mobile cellular telephone subscription per 100 inhabitants

	2009	2010	2011	2012*
All Pakistan	55	57	62	67

Note:

Source: World Bank Data, 2014: Mobile cellular telephone subscriptions per 100 inhabitants

*This is the most recent figure available

Indicator # HH36(a): Current growth rate of internet in Pakistan

Table HH36(a). Current growth rate of internet in Pakistan

	2014
All Pakistan	85.19%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # HH36(b). Internet usage in age cohorts

Table HH36(b). Internet usage in age cohorts

		Internet Users	Internet Non-Users
All Pakistan		**8%**	**92%**
Age of the Respondent	**Under 25**	19%	81%
	25 – 30	10%	90%
	31– 40	6%	94%
	41- 50	4%	96%
	51- 60	4%	96%
	60+	5%	95%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 3,000; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # HH37: **Mobile cellular telephone prepaid tariffs per month in US$, and as a percentage of monthly per capita income**

Mobilink, 2014, PKR								
	On Net	Off Net	Landline	Average	25 Calls and 30 SMS	Operator Share	Share of Tariff	Calls+SMS
Call (60 sec)	1.5	1.5	1.5	1.5	37.5	28.90%	10.8375	
SMS	0.75	0.75		0.75	22.5	28.90%	6.5025	17.34
Ufone, 2014, PKR								
	On Net	Off Net	Landline	Average	25 Calls and 30 SMS	Operator Share	Share of Tariff	Calls+SMS
Call (60 sec)	1.98	1.98	1.98	1.98	49.5	18.60%	9.207	
SMS	1.45	1.45		1.45	43.5	18.60%	8.091	17.298
Warid, 2014, PKR								
	On Net	Off Net	Landline	Average	25 Calls and 30 SMS	Operator Share	Share of Tariff	Calls+SMS
Call (60 sec)	1.3	2.35	1.85	1.833333	45.83	9.90%	4.5375	
SMS	1.5	1.5		1.5	45	9.90%	4.455	8.9925
Zong, 2014, PKR								
	On Net	Off Net	Landline	Average	25 Calls and 30 SMS	Operator Share	Share of Tariff	Calls+SMS
Call (60 sec)	1.6	1.6	1.6	1.6	40	16.40%	6.56	
SMS	1.3	1.3		1.3	39	16.40%	6.396	12.956
Telenor, 2014, PKR								
	On Net	Off Net	Landline	Average	25 Calls and 30 SMS	Operator Share	Share of Tariff	Calls+SMS
Call (60 sec)	1.8	1.8	1.8	1.8	45	26.10%	11.745	
SMS	1.5	1.5		1.5	45	26.10%	11.745	23.49
								PKR 80.08
							In US$	**$0.77**
As a percentage of monthly per capita income								**0.73%**

Indicator # HH38: **Percentage of localities with public Internet access centers (PIACs)**

Indicator	2010*
Percentage of Localities with PIACs	0%

Source: USF, 2010: Concept Paper Universal Telecenters (UTC) Project

*This is the most recent figure available

Section 2:

EDUCATION INSTITUTIONS BASED INDICATORS

Indicator # S1 Proportion of schools with a radio used for educational purposes

Table S1 Proportion of schools with a radio used for educational purposes

Q28. Are Radios used to for educational purposes at your institute?

		Yes	No
All Pakistan		1%	99%
Gender of Respondent	**Male**	1%	99%
	Female	1%	99%
D2. Age of respondent	**Under 30**	2%	98%
	30 - 50	1%	99%
	51+	0%	100%
	No response	0%	100%
Q1. What is the status of your educational institute?	**Primary**	0%	100%
	Middle	0%	100%
	High School	1%	99%
	Intermediate	0%	100%
	Degree College	0%	100%
	University	33%	67%
	Others	0%	100%
Q2. Is your institute Public or Private?	**Public**	1%	99%
	Private	1%	99%
Q6. What is your association with this institute?	**Teacher**	2%	98%
	Head Teacher	1%	99%
	Admin	1%	99%
	Both Teacher and Admin	0%	100%
	Registrar	33%	67%
Location	**Urban**	2%	98%
	Rural	0%	100%
Province	**Punjab**	2%	98%
	Sindh	1%	99%
	KP	0%	100%
	Balochistan	0%	100%

Note:

Pakistan ICT Indicators Survey, 2014 (Education Institutes Survey Module)

Methodology: Sample Size: 523; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 11 - Feb 02, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # S2 Proportion of schools with a television used for educational purposes

Table S2 Proportion of schools with a television used for educational purposes

Q29. Are Televisions used for educational purposes at your institute?

		Yes	No
All Pakistan		2%	98%
Gender of Respondent	**Male**	2%	98%
	Female	1%	99%
D2. Age of respondent	**Under 30**	2%	98%
	30 - 50	1%	99%
	51+	7%	93%
	No response	0%	100%
Q1. What is the status of your educational institute?	**Primary**	1%	99%
	Middle	0%	100%
	High School	4%	96%
	Intermediate	0%	100%
	Degree College	0%	100%
	University	42%	58%
	Others	0%	100%
Q2. Is your institute Public or Private?	**Public**	2%	98%
	Private	3%	97%
Q6. What is your association with this institute?	**Teacher**	2%	98%
	Head Teacher	2%	98%
	Admin	2%	98%
	Both Teacher and Admin	1%	99%
	Registrar	33%	67%
Location	**Urban**	3%	97%
	Rural	1%	99%
Province	**Punjab**	3%	97%
	Sindh	1%	99%
	KP	1%	99%
	Balochistan	0%	100%

Note:

Pakistan ICT Indicators Survey, 2014 (Education Institutes Survey Module)

Methodology: Sample Size: 523; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 11 - Feb 02, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # S3 Proportion of schools with a telephone communication facility

Table S3 Proportion of schools with a telephone communication facility

Q41. Is there a fixed line telephone connection at your institute?

		Yes	No
All Pakistan		42%	58%
Gender of Respondent	**Male**	44%	56%
	Female	39%	61%
D2. Age of respondent	**Under 30**	24%	76%
	30 - 50	45%	55%
	51+	40%	60%
	No response	50%	50%
Q1. What is the status of your educational institute?	**Primary**	28%	72%
	Middle	46%	54%
	High School	73%	27%
	Intermediate	70%	30%
	Degree College	100%	0%
	University	100%	0%
	Others	100%	0%
Q2. Is your institute Public or Private?	**Public**	38%	62%
	Private	55%	45%
Q6. What is your association with this institute?	**Teacher**	45%	55%
	Head Teacher	30%	70%
	Admin	63%	37%
	Both Teacher and Admin	29%	71%
	Registrar	67%	33%
Location	**Urban**	53%	47%
	Rural	29%	71%
Province	**Punjab**	39%	61%
	Sindh	31%	69%
	KP	71%	29%
	Balochistan	23%	77%

Note:

Pakistan ICT Indicators Survey, 2014 (Education Institutes Survey Module)

Methodology: Sample Size: 523; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 11 - Feb 02, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # S4 Proportion of schools with Internet access by type of access

Table S4 Proportion of schools with Internet access by type of access (Multiple Response)

Q35. What type of internet connection is there at your institute?

		Dial up	DSL	Wireless local loop	GPRS (such as using internet on your mobile phone)	Cable net	Wimax	Evdo
All Pakistan		14%	51%	20%	2%	10%	10%	20%
Gender of Respondent	**Male**	18%	44%	26%	3%	10%	13%	21%
	Female	0%	75%	0%	0%	8%	0%	17%
D2. Age of respondent	**Under 30**	0%	75%	50%	0%	25%	0%	0%
	30 - 50	10%	56%	13%	3%	10%	10%	10%
	51+	43%	14%	43%	0%	0%	14%	71%
	No response	0%	0%	0%	0%	0%	0%	100%
Q1. What is the status of your educational institute?	**Primary**	0%	25%	25%	0%	50%	0%	0%
	Middle	25%	50%	0%	0%	0%	25%	0%
	High School	9%	43%	13%	0%	0%	9%	30%
	Intermediate	0%	50%	0%	0%	0%	50%	0%
	Degree College	0%	80%	20%	0%	0%	0%	0%
	University	25%	67%	33%	8%	25%	8%	25%
	Others	100%	0%	100%	0%	0%	0%	0%
Q2. Is your institute Public or Private?	**Public**	13%	50%	22%	3%	9%	13%	19%
	Private	16%	53%	16%	0%	11%	5%	21%
Q6. What is your association with this institute?	**Teacher**	20%	47%	27%	7%	0%	20%	7%
	Head Teacher	0%	25%	8%	0%	17%	8%	42%
	Admin	24%	71%	24%	0%	18%	0%	18%
	Both Teacher and Admin	0%	50%	17%	0%	0%	17%	17%
	Registrar	0%	100%	0%	0%	0%	0%	0%
Location	**Urban**	12%	49%	24%	2%	12%	7%	22%
	Rural	20%	60%	0%	0%	0%	20%	10%
Province	**Punjab**	17%	55%	10%	0%	7%	7%	21%
	Sindh	0%	25%	38%	13%	38%	0%	13%
	KP	13%	38%	38%	0%	0%	38%	13%
	Balochistan	0%	100%	20%	0%	0%	0%	20%

Note:
Pakistan ICT Indicators Survey, 2014 (Education Institutes Survey Module)
Methodology: Sample Size: 51 (Allowed to use internet); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 11 - Feb 02, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # S5 Proportion of learners who have access to the Internet at school

Table S5 Proportion of learners who have access to the Internet at school

Q33. Are the students and staff at your institute allowed to use internet?

		Yes	No
All Pakistan		10%	90%
Gender of Respondent	**Male**	11%	89%
	Female	7%	93%
D2. Age of respondent	**Under 30**	7%	93%
	30 - 50	9%	91%
	51+	16%	84%
	No response	25%	75%
Q1. What is the status of your educational institute?	**Primary**	1%	99%
	Middle	4%	96%
	High School	29%	71%
	Intermediate	20%	80%
	Degree College	71%	29%
	University	100%	0%
	Others	33%	67%
Q2. Is your institute Public or Private?	**Public**	8%	92%
	Private	13%	87%
Q6. What is your association with this institute?	**Teacher**	11%	89%
	Head Teacher	7%	93%
	Admin	13%	87%
	Both Teacher and Admin	8%	92%
	Registrar	33%	67%
Location	**Urban**	14%	86%
	Rural	4%	96%
Province	**Punjab**	12%	88%
	Sindh	6%	94%
	KP	10%	90%
	Balochistan	17%	83%

Note:

Pakistan ICT Indicators Survey, 2014 (Education Institutes Survey Module)

Methodology: Sample Size: 523; Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 11 - Feb 02, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # S6 Learners-to-computer ratio in schools with computer-assisted instruction

Table S6 Learners-to-computer ratio in schools with computer-assisted instruction

Q4. How many students are currently studying at your institute?

		Learners-to-computer access ratio
		Mean
All Pakistan		19.93
Gender	**Male**	17.61
	Female	24.81
D2. Age of respondent	**Under 30**	10.48
	30 - 50	20.74
	51+	17.90
	No Response	78.33
Q1. What is the status of your educational institute?	**Primary**	17.67
	Middle	14.83
	High School	27.06
	Intermediate	5.15
	Degree College	31.46
	University	22.72
	Others	5.13
Q2. Is your institute Public or Private?	**Public**	20.18
	Private	19.63
Q6. What is your association with this institute?	**Teacher**	28.29
	Head Teacher	25.34
	Admin	14.99
	Both Teacher and Admin	7.60
	Registrar	18.33
Location	**Urban**	23.45
	Rural	10.29
Province	**Punjab**	13.18
	Sindh	47.06
	KP	15.20
	Balochistan	8.48

Note:

Pakistan ICT Indicators Survey, 2014 (Education Institutes Survey Module)

Methodology: Sample Size: 202 (Having computer in institute); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 11 - Feb 02, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # S7 Proportion of ICT qualified teachers in school

Table S7 Proportion of ICT qualified teachers in schools

Q22. Does your institute have ICT qualified teachers?

		Yes	No
All Pakistan		75%	25%
Gender of Respondent	**Male**	72%	28%
	Female	82%	18%
D2. Age of respondent	**Under 30**	68%	32%
	30 - 50	76%	24%
	51+	68%	32%
	No response	100%	0%
Q1. What is the status of your educational institute?	**Primary**	51%	49%
	Middle	82%	18%
	High School	86%	14%
	Intermediate	70%	30%
	Degree College	86%	14%
	University	100%	0%
	Others	67%	33%
Q2. Is your institute Public or Private?	**Public**	69%	31%
	Private	82%	18%
Q6. What is your association with this institute?	**Teacher**	64%	36%
	Head Teacher	76%	24%
	Admin	81%	19%
	Both Teacher and Admin	74%	26%
	Registrar	100%	0%
Location	**Urban**	76%	24%
	Rural	70%	30%
Province	**Punjab**	72%	28%
	Sindh	67%	33%
	KP	85%	15%
	Balochistan	88%	12%

Note:

Pakistan ICT Indicators Survey, 2014 (Education Institutes Survey Module)

Methodology: Sample Size: 202 (Having computer in institute); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 11 - Feb 02, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator# S8: Percentage of students who use Internet at schools, colleges, Universities and do not use Internet at home

Table S8: Percentage of students who use Internet at schools, colleges, Universities and do not use Internet at home

Q18. If you use internet at your institute then do you use internet at your home as well?

	Column N %
Yes	55%
No	**45%**

Note:
Pakistan ICT Indicators Survey, 2014 (Household Survey Module)
Methodology: Sample Size: 31 (Internet Users at Educational Institute); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 11 - Feb 02, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # S9. Split of users between students and the general population

Table S9. Split of users between students and general population?

		% share of students in total internet usage
All Pakistan		8%
	Student	28%
	All others	72%
	Total	100%

Note:

Pakistan ICT Indicators Survey, 2014 (Household Survey Module)

Methodology: Sample Size: 274 (Internet Users); Coverage: National/Rural and Urban/All four provinces; Mode: Face to face; Survey dates: Jan 10 - Jan 29, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # S10: Proportion of Schools with Electricity

Education Level		% of Schools with Electricity
	All Pakistan	
Pre-Primary	Public	48
	Private	98
Primary	Public	36
	Private	82
Middle Elementary	Public	79
	Private	98
Secondary	Public	90
	Private	99
Higher Secondary	Public	96
	Private	99

Section 3:

ENTERPRISE BASED INDICATORS

Indicator # E1: Proportion of businesses using computers

Table E1: Proportion of businesses using computers

Q4. Was a computer used in your establishment in the past 12 months?

		Yes	No	Don't know
All Pakistan		77%	22%	1%
What is the nature of work of this enterprise?	**Manufacturing**	73%	26%	1%
	Trade	74%	26%	0%
	Services	83%	16%	1%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	58%	41%	1%
	Medium (51-100)	89%	11%	0%
	Large (100+)	93%	7%	0%
Province	**Punjab**	85%	15%	0%
	Sindh	86%	14%	0%
	KP	59%	36%	5%
	Balochistan	44%	56%	0%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level

Indicator # E2: Primary uses of computers in offices

Table E2: Primary uses of computers in offices

Q11.For what purpose do you generally use a computer?

		All office work is done on computers	Only for checking official emails	To use the cashier facility
All Pakistan		76%	11%	13%
What is the nature of work of this enterprise?	**Manufacturing**	74%	15%	11%
	Trade	63%	11%	26%
	Services	82%	8%	10%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	80%	6%	14%
	Medium (51-100)	73%	16%	11%
	Large (100+)	76%	11%	13%
Firm's legal status	**Shareholding company with shares trade in the stock market**	88%	13%	0%
	Shareholding company with non-traded shares	95%	5%	0%
	Sole proprietorship	69%	15%	16%
	Partnership	81%	4%	15%
	Limited partnership	84%	9%	7%
	All others	83%	0%	17%
Province	**Punjab**	73%	17%	10%
	Sindh	89%	4%	7%
	KP	82%	4%	14%
	Balochistan	23%	4%	73%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 403 (Computer Users); Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E3: Proportion of businesses using the Internet

Table E3: Proportion of businesses using the Internet

Q14. In the past 12 months did you use the internet for your business?

		Yes	No
All Pakistan		63%	37%
What is the nature of work of this enterprise?	**Manufacturing**	60%	40%
	Trade	55%	45%
	Services	68%	32%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	44%	56%
	Medium (51-100)	69%	31%
	Large (100+)	83%	17%
Firm's legal status	**Shareholding company with shares trade in the stock market**	94%	6%
	Shareholding company with non-traded shares	86%	14%
	Sole proprietorship	55%	45%
	Partnership	54%	46%
	Limited partnership	90%	10%
	All others	83%	17%
Province	**Punjab**	78%	22%
	Sindh	71%	29%
	KP	28%	72%
	Balochistan	12%	88%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E4: Proportion of persons employed routinely using the internet

Table E4: Proportion of persons employed routinely using the internet

Q17. In the last 12 months how many employees at your organization used the internet while working?

		Less than 25%	Between 25% and 50%	Between 50% and 75%	Between 75% and 100%
All Pakistan		46%	30%	13%	11%
What is the nature of work of this enterprise?	**Manufacturing**	53%	32%	11%	4%
	Trade	38%	41%	9%	12%
	Services	42%	26%	16%	16%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	58%	16%	16%	10%
	Medium (51-100)	49%	29%	13%	9%
	Large (100+)	36%	42%	10%	12%
Firm's legal status	**Shareholding company with shares trade in the stock market**	27%	33%	27%	13%
	Shareholding company with non-traded shares	37%	26%	21%	16%
	Sole proprietorship	49%	32%	10%	9%
	Partnership	45%	25%	18%	12%
	Limited partnership	48%	32%	11%	9%
	All others	60%	20%	0%	20%
Province	**Punjab**	39%	35%	12%	14%
	Sindh	54%	22%	18%	6%
	KP	62%	33%	5%	0%
	Balochistan	83%	0%	0%	17%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 327 (Internet Users); Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E5: Proportion of business with a web presence

Table E5: Proportion of businesses with a web presence

Q21. From the first of this month, does your establishment have a web presence (this includes a website or a Facebook page)?

		Yes	No	Don't know
All Pakistan		49%	46%	5%
What is the nature of work of this enterprise?	**Manufacturing**	45%	50%	5%
	Trade	50%	47%	3%
	Services	54%	41%	5%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	32%	64%	4%
	Medium (51-100)	51%	43%	6%
	Large (100+)	72%	24%	4%
Province	**Punjab**	61%	36%	3%
	Sindh	59%	34%	7%
	KP	19%	73%	8%
	Balochistan	10%	88%	2%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level

The methodology is consistent with World Bank's enterprise survey.

Use of computers has been understood in a broader sense. Also the use may not necessarily have happened physically within the confines of the establishment.

Indicator # E6: Proportion of businesses receiving orders over the Internet

Table E6: Proportion of businesses receiving orders over the Internet

Q16. In the past 12 months for what purpose was the internet used at your establishment?

Receiving orders for goods and services

		Yes	No
All Pakistan		26%	74%
S1. What is the nature of work of this enterprise?	**Manufacturing**	33%	67%
	Trade	32%	68%
	Services	17%	83%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	17%	83%
	Medium (51-100)	30%	70%
	Large (100+)	35%	65%
Q1. What is this firm's current legal status?	**Shareholding company with shares trade in the stock market**	56%	44%
	Shareholding company with non-traded shares	27%	73%
	Sole proprietorship	27%	73%
	Partnership	13%	87%
	Limited partnership	31%	69%
	All others	50%	50%
Province	**Punjab**	30%	70%
	Sindh	36%	64%
	KP	11%	89%
	Balochistan	2%	98%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E7: Proportion of businesses placing orders over the internet

Table IE7: Proportion of businesses placing orders over the internet

Q16. In the past 12 months for what purpose was the internet used at your establishment?

Sending orders for goods and services

		Yes	No
All Pakistan		35%	65%
S1. What is the nature of work of this enterprise?	**Manufacturing**	43%	57%
	Trade	40%	60%
	Services	24%	76%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	21%	79%
	Medium (51-100)	39%	61%
	Large (100+)	49%	51%
Q1. What is this firm's current legal status?	**Shareholding company with shares trade in the stock market**	63%	37%
	Shareholding company with non-traded shares	50%	50%
	Sole proprietorship	31%	69%
	Partnership	23%	77%
	Limited partnership	51%	49%
	All others	50%	50%
Province	**Punjab**	42%	58%
	Sindh	43%	57%
	KP	16%	84%
	Balochistan	2%	98%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E8: Internet-usage activities in Pakistani enterprises

Table IE8: Internet-usage activities in Pakistani enterprises

Q16. In the past 12 months for what purpose was the internet used at your establishment? (multiple response)

		Sending and receiving emails	Getting information about goods and services	Getting information from government/public organizations	Performing internet banking or accessing other financial services	Dealing with government organizations/public authorities
All Pakistan		54%	37%	8%	16%	5%
S1. What is the nature of work of this enterprise?	**Manufacturing**	52%	41%	8%	13%	4%
	Trade	54%	44%	6%	26%	4%
	Services	56%	31%	8%	17%	6%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	59%	34%	9%	22%	6%
	Medium (51-100)	52%	39%	9%	12%	3%
	Large (100+)	52%	37%	6%	16%	5%
Q1. What is this firm's current legal status?	**Shareholding company with shares trade in the stock market**	63%	38%	13%	21%	8%
	Shareholding company with non-traded shares	56%	26%	7%	17%	10%
	Sole proprietorship	50%	41%	8%	17%	4%
	Partnership	55%	33%	11%	15%	9%
	Limited partnership	59%	33%	5%	14%	1%
	All others	63%	25%	0%	25%	0%
Province	**Punjab**	50%	39%	8%	17%	4%
	Sindh	63%	34%	8%	18%	7%
	KP	51%	39%	0%	3%	0%
	Balochistan	42%	0%	10%	10%	0%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 327 (Internet Users); Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E9: Proportion of businesses using the Internet by type of access

Table E9: Proportion of businesses using the internet by type of access

Q23. In the past 12 months, what was the source of internet connection at your establishment? (multiple response)

		Dialup	Wireless local loop	DSL	GPRS	Cable Net	Wimax	Evdo
All Pakistan		6%	8%	69%	6%	12%	31%	2%
S1. What is the nature of work of this enterprise?	**Manufacturing**	6%	10%	66%	5%	12%	33%	1%
	Trade	0%	3%	74%	18%	15%	21%	3%
	Services	7%	8%	72%	3%	12%	32%	3%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	5%	4%	61%	9%	14%	33%	2%
	Medium (51-100)	5%	6%	77%	4%	14%	25%	2%
	Large (100+)	6%	14%	69%	5%	9%	35%	2%
Q1. What is this firm's current legal status?	**Shareholding company with shares trade in the stock market**	7%	33%	73%	7%	7%	33%	7%
	Shareholding company with non-traded shares	26%	26%	37%	5%	5%	58%	0%
	Sole proprietorship	2%	5%	70%	5%	12%	25%	2%
	Partnership	8%	6%	76%	6%	10%	36%	2%
	Limited partnership	6%	9%	72%	6%	16%	36%	3%
	All others	20%	0%	60%	20%	20%	20%	0%
Province	**Punjab**	3%	1%	86%	1%	2%	22%	2%
	Sindh	3%	15%	48%	16%	33%	46%	4%
	KP	43%	48%	14%	0%	5%	57%	0%
	Balochistan	0%	0%	100%	0%	17%	0%	0%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 327 (Internet Users); Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E10: Proportion of businesses with an intranet

Table E10: Proportion of businesses with an intranet

Q27. Considering the last months, does your establishment use an intranet?

		Yes	No	Don't know
All Pakistan		26%	71%	3%
What is the nature of work of this enterprise?	**Manufacturing**	27%	71%	2%
	Trade	13%	84%	3%
	Services	30%	68%	2%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	9%	87%	4%
	Medium (51-100)	32%	66%	2%
	Large (100+)	44%	55%	1%
Firm's legal status	**Shareholding company with shares trade in the stock market**	56%	44%	0%
	Shareholding company with non-traded shares	36%	64%	0%
	Sole proprietorship	18%	79%	3%
	Partnership	19%	80%	1%
	Limited partnership	61%	38%	1%
	All others	17%	83%	0%
Province	**Punjab**	30%	68%	2%
	Sindh	39%	59%	2%
	KP	3%	93%	4%
	Balochistan	4%	94%	2%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E11: Proportion of businesses with an extranet

Table E11: Proportion of businesses with an extranet

Q30. Considering the first of this month please tell us does your establishment use an extranet?

		Yes	No	Don't know
All Pakistan		15%	77%	8%
What is the nature of work of this enterprise?	**Manufacturing**	15%	76%	9%
	Trade	8%	76%	16%
	Services	16%	78%	6%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	6%	82%	12%
	Medium (51-100)	15%	81%	4%
	Large (100+)	26%	66%	8%
Province	**Punjab**	18%	76%	6%
	Sindh	20%	66%	14%
	KP	1%	96%	3%
	Balochistan	4%	86%	10%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E12: Proportion of businesses with a local area network (LAN)

Table E12: Proportion of businesses with a local area network (LAN)

Q29. Keeping in mind the past months, does your establishment use local area networking LAN?

		Yes	No
All Pakistan		24%	76%
What is the nature of work of this enterprise?	**Manufacturing**	25%	75%
	Trade	15%	85%
	Services	26%	74%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	8%	92%
	Medium (51-100)	28%	72%
	Large (100+)	43%	57%
Province	**Punjab**	28%	72%
	Sindh	35%	65%
	KP	4%	96%
	Balochistan	4%	96%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Indicator # E13: Proportion of persons employed routinely using computers

Table E13: Proportion of persons employed routinely using computers

Q12. How many personnel in your establishment generally used a computer at their job in the last months?

		One	Two to five	More than five	Don't know
All Pakistan		10%	37%	49%	4%
What is the nature of work of this enterprise?	**Manufacturing**	11%	37%	46%	6%
	Trade	17%	52%	26%	4%
	Services	7%	35%	57%	2%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	19%	48%	31%	2%
	Medium (51-100)	9%	34%	51%	5%
	Large (100+)	3%	31%	62%	4%
Firm's legal status	**Shareholding company with shares trade in the stock market**	13%	6%	69%	13%
	Shareholding company with non-traded shares	0%	24%	57%	19%
	Sole proprietorship	10%	47%	42%	0%
	Partnership	18%	36%	38%	8%
	Limited partnership	3%	20%	74%	3%
	All others	17%	50%	33%	0%
Province	**Punjab**	7%	39%	54%	0%
	Sindh	7%	35%	56%	2%
	KP	18%	32%	23%	27%
	Balochistan	41%	41%	18%	0%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Table E14: Proportion of businesses using the internet by type of activity

Q16. In the past 12 months for what purpose was the internet used at your establishment? (multiple response)

		Sending and receiving emails	Getting information about goods and services	Getting information from government/public organizations	Performing internet banking or accessing other financial services	Dealing with government organizations/public authorities
		Row %	**Row %**	**Row %**	**Row %**	**Row %**
All Pakistan		54%	37%	8%	16%	5%
S1. What is the nature of work of this enterprise?	**Manufacturing**	52%	41%	8%	13%	4%
	Trade	54%	44%	6%	26%	4%
	Services	56%	31%	8%	17%	6%
S2. What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	59%	34%	9%	22%	6%
	Medium (51-100)	52%	39%	9%	12%	3%
	Large (100+)	52%	37%	6%	16%	5%
Province	**Punjab**	50%	39%	8%	17%	4%
	Sindh	63%	34%	8%	18%	7%
	KP	51%	39%	0%	3%	0%
	Balochistan	42%	0%	10%	10%	0%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Section 4:

PRODUCTION BASED INDICATORS

Indicator #M1: Proportion of Total Business Sector Workforce Involved in ICT Sector

Total 1: business sector workforce involved in the ICT sector		
		Number
Total ICT Workforce		**659,250**
Communication Technology	**Telecommunication**	37,250
	Media	200,000
Information Technology	**Software/BOP/Hardware**	422,000

Table 2: **Total Business Sector Workforce**	
	Size *
All Pakistan	32500000

(KPMG-Investment in Pakistan, 2013)
PASHA-IT Industry Report, 2008
PSEB-Industry Overview
*This is the most recent figure available

Indicator # M2: **ICT Sector Share Of Gross Value Added**

Table M2: ICT Sector Share Of Gross Value Added				
Share of ICT Sector in Gross Value Added				
Year	2005	2006	2007	2008*
% Share in Gross Value Added	3.87	4.17	4.36	4.37

Trading Economics, 2014-Information and communication technology expenditure (% of GDP) in Pakistan

*This is the most recent figure available

Indicator # M3: **ICT goods imports as a percentage of total imports**

Table M3: ICT goods imports as a percentage of total imports

	2009	2010	2011*
Afghanistan	0.3%	0.4%	
China	21.9%	20.4%	18.0%
India	7.8%	6.3%	6.0%
Malaysia	30.1%	29.8%	25.6%
Nepal	5.1%	7.2%	5.3%
Pakistan	**3.1%**	**3.3%**	**3.6%**
Sri Lanka	3.2%	2.9%	3.5%

World Bank, 2014- ICT goods imports (% of total goods imports)

*This is the most recent figure available

Indicator # M4: **ICT goods exports as a percentage of total exports**

Table M4: ICT goods exports as a percentage of total exports

	2010	2011	2012*
China	29.1%	26.8%	27.1%
India	2.0%	2.2%	2.0%
Malaysia	34.0%	29.4 %	27.9%
Pakistan	0.2%	0.2 %	0.2%
Sri Lanka	0.5%	0.4 %	0.5%

World Bank, 2014- ICT goods exports (% of total goods exports)

*This is the most recent figure available

Indicator # M5: **Proportion of learners enrolled at the post-secondary level in ICT-related fields**

Table M5: ICT Proportion of learners enrolled at the post-secondary level in ICT-related fields	
Post Secondary Level	
Higher Secondary	1,400,000
College	630,000
University	1,600,000
Total	**3,630,000**

Pakistan Economic Survey, 2012
KPMG-Investment in Pakistan, 2013

INDICATOR # M6: **What are the segments, such as homes, multinationals, local businesses or government agencies in which these computers are being sold and what is the percentage share of each segment?**

Table M6: What are the segments, such as homes, multinationals, local businesses or government agencies in which these computers are being sold and what is the percentage share of each segment?	
Indicator	**Figure**
% of Enterprises where computer present	77%
Total Enterprises in Pakistan	3,250,000
Total Computers used in Enterprises	**2,502,500**
% of Households where computer present	22%
Total Households in Pakistan	28,213,166
Total Computers in Households	**6,206,897**
% of Government Employees using a computer	65.42%
Total Government Employees in Pakistan	650,000
Total Computers used in Government	**425,208**
Total Computers in Country	**9,134,605**
% Share of Computer Sales in Enterprises	**27.40%**
% Share of Computer Sales in Households	**67.95%**
% Share of Computer Sales in Government	**4.65%**

INDICATOR # M7: **What is the overall size of the computer market in US$?**

Table M7: What is the overall size of the computer market in US$?	
Size of the computer market in US$	
	Size in US$, 2013*
All Pakistan	334 million

(KPMG-Investment in Pakistan, 2013)

*This is the most recent figure available

INDICATOR # M8: **What is the current growth rate?**

Table M8: What is the current growth rate?	
Current Growth Rate	
	Growth Rate, 2013*
All Pakistan	8%

(KPMG-Investment in Pakistan, 2013)

*This is the most recent figure available

Indicator # M9: **What is the percentage of users who use internet at office (or work place) and do not use internet at home?**

Table M9: What is the percentage of users who use internet at office (or work place) and do not use internet at home?

		If used the internet at work, then did you use the internet at home?	
		Yes	**No**
All Pakistan		75%	25%
What is the nature of work of this enterprise?	**Manufacturing**	72%	28%
	Trade	62%	38%
	Services	81%	19%
What is the size of this enterprise (according to number of employees)?	**Small (11-50)**	73%	27%
	Medium (51-100)	76%	24%
	Large (100+)	76%	24%
Firm's legal status	**Shareholding company with shares trade in the stock market**	87%	13%
	Shareholding company with non-traded shares	84%	16%
	Sole proprietorship	72%	28%
	Partnership	84%	16%
	Limited partnership	74%	26%
	All others	40%	60%
Province	**Punjab**	77%	23%
	Sindh	71%	29%
	KP	86%	14%
	Balochistan	50%	50%

Note:

Pakistan ICT Indicators Survey, 2014 (Enterprises Survey Module)

Methodology: Sample Size: 521; Coverage: Urban/All four provinces; Mode: Face to face; Survey dates: Jan 13 - Feb 11, 2014. Estimated error margin: +3-5% at 95% confidence level.

Section 5:

GOVERNMENT BASED INDICATORS

Indicator # G1: **Proportion of persons employed in central government organizations routinely using computers**

Table G1: Proportion of persons employed in central government organizations routinely using computers	
Q1. What would be your educated estimate regarding proportion of persons employed in central government organizations routinely using computers?	
	2014
Proportion of persons employed in central government organizations routinely using computers	57.95%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

Indicator # G2: **Proportion of persons employed in central government organizations routinely using the Internet**

Table G2: Proportion of persons employed in central government organizations routinely using the internet	
Q2. What would be your educated estimate regarding proportion of persons employed in central government organizations routinely using internet?	
	2014
Proportion of persons employed in central government organizations routinely using the internet	60.22%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

Indicator # G3: **Proportion of central government organizations with a Local Area Network (LAN)**

Table G3: Proportion of central government organizations with a Local Area Network (LAN)	
Q3. What would be your educated estimate regarding Proportion of central government organizations with a local area network (LAN)	
	2014
Proportion of central government organizations with a local area network (LAN)	59.36%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

Indicator # G4: **Proportion of central government organizations with an intranet**

Table G4: Proportion of central government organizations with an intranet	
Q4. What would be your educated estimate regarding Proportion of central government organizations with an intranet	
	2014
Proportion of central government organizations with an intranet	43.52%
Source: Perceptual Survey on ICT in Government of Pakistan, 2014	

Indicator # G5: **Proportion of central government organizations with Internet access, by type of access**

Table G5: Proportion of central government organizations with Internet access, by type of access	
Q5. What would be your educated estimate regarding proportion of central government organizations with Internet access, by type of access?	
	2014
Proportion of (internet using) central government organizations with Dialup connection	3.95%
Proportion of (internet using) central government organizations with DSL	70.67%
Proportion of (internet using) central government organizations with GPRS	5.72%
Proportion of (internet using) central government organizations with Cable Net	14.18%
Other types of access	5.48%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

Indicator # G6: **Proportion of central government organizations with a web presence**

Table G6: Proportion of central government organizations with a web presence	
Q4. What would be your educated estimate regarding proportion of central government organizations with a web presence	
	2014
Proportion of central government organizations with a web presence	74.55%

Source: Perceptual Survey on ICT in Government of Pakistan, 2014

Indicator # G7: **Selected Internet-based services available to citizens, by level of sophistication of service**

Table G7: Selected Internet-based services available to citizens, by level of sophistication of service	
Selected Internet-based services available to citizens	**Level of sophistication**
Hajj Applications	Online processing of hajj applications and status tracking for arrangements for applicants
E-Enablement of Senate & National Assembly of Pakistan	Upgrading of existing network, hardware and applications so as to make available the proceedings of the National Assembly to the parliamentarians at their work places as well as to disseminate information on proceedings of the House to the citizens.
E-services at Securities and Exchange Commission of Pakistan (SECP)	Online document submission to SECP especially pertaining to registration of a company
Automation of Estate Office	Ensuring transparency and just process of allotments to concerned citizens and transfer of governmental projects
Development of Urdu Lexicon	Machine translation & text to speech software for Urdu language
Online Legal Services	Online access to statutory case laws at district bar associations
Automation of Patent Office, Karachi	Development of customized applications for automating the internal business processes of Patent Office, Karachi Under Cabinet Division. In addition to this, the Patent Office Web Site will be redesigned for online services for customers and stakeholders.
Automated Remuneration System	Salary disbursement through ATMs
Technical know-how	IT support to provinces and AJK
E-Filing of Tax Returns	Electronic filing of tax returns for FBR

Source: E Government Directorate, GoP, 2014.

APPENDICES

Appendices

Appendix 1

MAPPING SHEET

Main Pillar	Indicator	Reference to the Report: Indicator #
Cable TV	Total number of households in Pakistan	HH1
Cable TV	Households with access to electricity	HH2
Cable TV	Number of Cable TV connections in Pakistan	HH5
Cable TV	Population watching Cable TV	HH6
Cable TV	Population watching terrestrial and satellite TV	HH7
Computer Market	What are primary uses of computers in offices?	E2
Computer Market	What are primary uses of computers at home?	HH11
Computer Market	What is the percentage share of branded and unbranded computers	HH12
Computer Market	What is the percentage share of new versus used computers	HH13
Computer Market	What is the share of laptops/notebooks versus desktops?	HH14
Computer Market	What are the segments, such as homes, multinationals, local businesses or government agencies in which these computers are being sold and what is the percentage share of each segment?	M6
Computer Market	What is the overall size of the computer market in US$? (Computer market is defined as laptops/PCs/Servers/Notebooks/etc. as well as networking equipment and storage, which are to be reported against separately.	M7
Computer Market	What is the current growth rate?	M8
Core Indicators on ICT (Producing Sector)	Proportion of total business sector workforce involved in the ICT sector	M1
Core Indicators on ICT (Producing Sector)	ICT sector share of gross value added	M2
ICT access and use by enterprises	Proportion of businesses using computers	E1
ICT access and use by enterprises	Proportion of businesses with an intranet	E10
ICT access and use by enterprises	Proportion of businesses with an extranet	E11
ICT access and use by enterprises	Proportion of businesses with a local area network (LAN)	E12
ICT access and use by enterprises	Proportion of persons employed routinely using computers	E13
ICT access and use by enterprises	Proportion of businesses using the Internet by type of activity	E14
ICT access and use by enterprises	Proportion of businesses using the Internet	E3
ICT access and use by enterprises	Proportion of persons employed routinely using the Internet	E4
ICT access and use by enterprises	Proportion of businesses with a web presence	E5
ICT access and use by enterprises	Proportion of businesses receiving orders over the Internet	E6
ICT access and use by enterprises	Proportion of businesses placing orders over the Internet	E7
ICT access and use by enterprises	Proportion of businesses using the Internet by type of access	E9
ICT access and use by households and individuals	Proportion of households with a computer	HH10
ICT access and use by households and individuals	Proportion of individuals who used a computer in the last 12 months	HH15
ICT access and use by households and individuals	Proportion of households with Internet access	HH16a
ICT access and use by households and individuals	Proportion of individuals who used the Internet in the last 12 months	HH17
ICT access and use by households and individuals	Location of individual use of the Internet in the last 12 months	HH18b
ICT access and use by households and individuals	Internet activities undertaken by individuals in the last 12 months	HH19
ICT access and use by households and individuals	Proportion of households with access to the Internet by type of access	HH21

ICT access and use by households and individuals	Frequency of individual use of the Internet in the last 12 months	HH22
ICT access and use by households and individuals	Proportion of households with a radio	HH3
ICT access and use by households and individuals	Proportion of households with a TV	HH4
ICT access and use by households and individuals	Proportion of households with telephone	HH8
ICT access and use by households and individuals	Proportion of individuals who used a mobile cellular telephone in the last 12 months	HH33
ICT in education	Proportion of learners enrolled at the post-secondary level in ICT-related fields	M5
ICT in education	Proportion of schools with a radio used for educational purposes	S1
ICT in education	Proportion of schools with electricity	S10
ICT in education	Proportion of schools with a television used for educational purposes	S2
ICT in education	Proportion of schools with a telephone communication facility	S3
ICT in education	Proportion of schools with Internet access by type of access	S4
ICT in education	Proportion of learners who have access to the Internet at school	S5
ICT in education	Learners-to-computer ratio in schools with computer-assisted instruction	S6
ICT in education	Proportion of ICT-qualified teachers in schools	S7
ICT in government	Proportion of persons employed in central government organizations routinely using computers	G1
ICT in government	Proportion of persons employed in central government organizations routinely using the Internet	G2
ICT in government	Proportion of central government organizations with a Local Area Network (LAN)	G3
ICT in government	Proportion of central government organizations with an intranet	G4
ICT in government	Proportion of central government organizations with Internet access, by type of access	G5
ICT in government	Proportion of central government organizations with a web presence	G6
ICT in government	Selected Internet-based services available to citizens, by level of sophistication of service	G7
ICT infrastructure and access	Fixed Internet subscribers per 100 inhabitants	HH28
ICT infrastructure and access	Fixed broadband Internet subscribers per 100 inhabitants	HH29
ICT infrastructure and access	Mobile broadband subscriptions per 100 inhabitants	HH30
ICT infrastructure and access	Fixed broadband Internet access tariffs per month in US$, and as a percentage of monthly per capita income	HH31
ICT infrastructure and access	International Internet bandwidth per inhabitant (bits/second/inhabitant)	HH32
ICT infrastructure and access	Percentage of the population covered by a mobile cellular telephone network	HH34
ICT infrastructure and access	Mobile cellular telephone subscriptions per 100 inhabitants	HH35
ICT infrastructure and access	Mobile cellular telephone prepaid tariffs per month in US$, and as a percentage of monthly per capita income	HH37
ICT infrastructure and access	Percentage of localities with public Internet access centers (PIACs)	HH38
ICT infrastructure and access	Fixed telephone lines per 100 inhabitants	HH9
ICT sector and trade in ICT goods	ICT goods imports as a percentage of total imports	M3
ICT sector and trade in ICT goods	ICT goods exports as a percentage of total exports	M4
Internet	What percentage of the population is using Internet?	HH16b
Internet	What is the numbers of Internet users in Pakistan?	HH18a
Internet	What is the city-wise (major 10 cities at least) and rural distribution of Internet users in Pakistan?	HH18c

Internet	What are the major purposes (at least four main purposes) of using Internet?	HH20
Internet	What is the percentage of narrow band/dialup Internet users versus broadband?	HH23
Internet	What is the split of fixed line Internet usage versus wireless?	HH24
Internet	What is the split of fixed/static Internet users versus mobile users (users on the move)?	HH25
Internet	What is the split of Internet users from mobile/cellular phones versus others (DSL, WiMax, EVDO, etc.?)	HH26
Internet	How many users have both, mobile as well as fixed line Internet connections?	HH27
Internet	What is the growth rate of Internet users?	HH36a
Internet	What percentage of age wise population uses Internet, below 20 years, 20-30 years, 30-40 years, 40-50 years, and 50+ years?	HH36b
Internet	What is the percentage of users who use Internet at office (or work place) and do not use Internet at homes?	M9
Internet	What is the percentage of students who use Internet at schools, colleges, Universities and do not use Internet at home?	S8
Internet	What is the split of users between students and other population?	S9

Appendix 2

1:

Pakistan ICT Indicators Survey, 2014- Household Survey Questionnaire

گھرانے کا سوالنامہ برائے ICT سروے
S-21326

ریجن: ---__---------- SP نمبر: ---_----__-------
رابطہ نمبر: ---------- انٹرویونمبر: -------_--------
تاریخ: -------__---------- وقت آغاز: -------_--------

السلام علیکم! میرا نام ---------- ہے اور میں ادارہ رائے عامہ پاکستان کا نمائندہ ہوں۔ ہمارا ادارہ تحقیق کا ادارہ ہے۔ اس وقت ہم ایک سروے کر رہے ہیں جس کا مقصد میڈیا کے بارے میں لوگوں کی عادت کا جائزہ لینا ہے۔ اگر آپ کچھ وقت دیں تو میں آپ کا بہت شکر گزار ہوں گا/ گی۔

S1. مجھے دراصل آپ کے گھر کے کسی ایک فرد سے انٹرویو کرنا ہے لیکن جس سے مجھے انٹرویو کرنا ہے اس کا نام قرعہ اندازی کے ذریعے منتخب کرنا ہوگا۔ اس لئے براہ کرم آپ مجھے اپنے گھر میں رہنے والے /والی ان تمام مرد (یا خواتین) کے نام عمر کی ترتیب سے بتائیں جس کی عمر **18** سال یا اس سے زیادہ ہو سب سے پہلے سب سے بڑی عمر کے فرد کا نام بتائیں۔ (باری باری نوٹ کریں)گھرانے میں وہ افراد شامل کریں جن کا کھانا پینا اکٹھا ہو اور ہفتہ میں کم ازکم پانچ روز انکے ساتھ رہتا ہو وقتی طور پر آئے ہوئے مہمان کو شامل نہ کریں۔

(نوٹ: گھرانے جہاں جوابدہندہ مرد ہوگا وہاں صرف مردوں کی فہرست تیار کریں اور جہاں جوابدہندہ خاتون ہوگی وہاں صرف خواتین کا نام تحریر کریں)

نمبر شمار	نام فرد	عمر سالوں میں
.1		
.2		
.3		
.4		
.5		

منتخب جوابدہندہ سے ملاقات ہوگئی ہاں [1] نہیں [2]
اگر نہیں تو ان سے ملاقات کا بہترین وقت کونسا ہے _____بجے صبح شام

(اگر تین مرتبہ کوشش کے باوجود منتخب جوابدہندہ سے رابطہ نہ ہوسکے تو منتخب جوابدہندہ کی عمر اور تعلیم پوچھ کر انٹرویوختم کردیں) پوری کوشش کریں کہ منتخب شدہ فرد سے انٹرویو ہوجائے۔ اگر پھر بھی منتخب شدہ شخص انٹرویو کے لیے رضامند نہیں ہوتا تو پھر انٹرویو ختم کردیں۔

کوشش کا نتیجہ (√کا نشان لگائیں)

کوشش نمبر	تاریخ	گھر پر نہیں	اس کے پاس وقت نہیں	انٹرویو دینا نہیں چاہتا	انٹرویو ہوگیا
1					
2					
3					

(دیے گئے خاکے کی مدد سے جوابدہندہ کا انتخاب کریں)

رابطہ نمبر	تعداد افراد جن کا نام فہرست میں ہے									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	2	1	3	1	4	1	5	1	6
2	1	1	2	2	2	3	2	4	2	5
3	1	2	3	1	3	2	3	3	3	4
4	1	1	1	4	4	1	4	2	4	3
5	1	2	2	3	5	6	5	1	5	2
6	1	1	3	2	1	5	6	8	6	1
7	1	2	1	1	2	4	7	7	7	10
8	1	1	2	4	3	3	1	6	8	9
9	1	2	3	3	4	2	2	5	9	8
10	1	1	1	2	5	1	3	4	1	7

مجھے دراصل آپ کے گھر کے کسی ایک فرد سے انٹرویو کرنا ہے لیکن جس سے مجھے انٹرویو کرنا ہے اس کا نام قرعہ اندازی کے ذریعے منتخب کرنا ہوگا۔ اس لئے براہ کرم آپ مجھے اپنے گھر میں رہنے والے /والی ان تمام مرد (یا خواتین) کے نام عمر کی ترتیب سے بتائیں جس کی عمر **18** سال یا اس سے زیادہ ہو سب سے پہلے سب سے بڑی عمر کے فرد کا نام بتائیں۔ (باری باری نوٹ کریں)

(**نوٹ: گھرانے جہاں جوابدہندہ مرد ہوگا وہاں صرف مردوں کی فہرست تیار کریں اور جہاں جوابدہندہ خاتون ہوگی وہاں صرف خواتین کا نام تحریر کریں)**

نمبر شمار	نام فرد	عمر سالوں میں
.1		
.2		
.3		
.4		
.5		

منتخب جوابدہندہ سے ملاقات ہوگئی ہاں [1] نہیں [2]
اگر نہیں تو ان سے ملاقات کا بہترین وقت کونسا ہے _____بجے صبح شام

(اگر تین مرتبہ کوشش کے باوجود منتخب جوابدہندہ سے رابطہ نہ ہوسکے تو منتخب جوابدہندہ کی عمر اور تعلیم پوچھ کر انٹرویو ختم کردیں) پوری کوشش کریں کہ منتخب شدہ فرد سے انٹرویو ہوجائے۔ اگر پھر بھی منتخب شدہ شخص انٹرویو کے لیے رضامند نہیں ہوتا تو پھر انٹرویو ختم کردیں۔

کوشش کا نتیجہ (√کا نشان لگائیں)

کوشش نمبر	تاریخ	گھر پر نہیں	اس کے پاس وقت نہیں	انٹرویو دینا نہیں چاہتا	انٹرویو ہوگیا
1					
2					
3					

نام منتخب جوابدہندہ _____
منتخب جوابدہندہ کی عمر _____منتخب جوابدہندہ کی تعلیم_____
اور آپ کا نام _____
گھر کا مکمل پتہ _____
گلی _____ محلہ _____
شہر _____ گاوں /ڈاکخانہ _____
انٹرویو نمبر _____

سیکشن 1: ٹیلی ویژن کا استعمال

Q1. کیا آپ یا آپ کے گھرانے میں کسی فرد کے پاس ٹیلی ویژن ہے؟

ہاں [1] **(Q2 پر جائیں)** نہیں [2] **(Q4 پر جائیں)**

Q2. کیا آپ کے گھر میں کیبل کا کنکشن موجود ہے؟

ہاں [1] نہیں

Q3. آپ ٹیلی ویژن کی نشریات حاصل کرنے کیلئے کونسا طریقہ استعمال کرتے ہیں؟ **(جوابات پڑھ کرسنائیں)**

کیبل [1] سیٹلائٹ [2] ٹریسٹریل **(اینٹینا)** [3]

Q4. آپ ہفتے میں اندازاً کتنے دن ٹی وی دیکھتے ہیں چاہے آپ کے گھر میں ٹی وی ہو یا نہ ہو؟

بہت ہی کم (یعنی مہینے میں 1 بار) [1]
کبھی کبھار یعنی ہفتے میں 1 دن سے بھی کم [2]
ہفتہ میں کم ازکم 1 دن [3]
ہفتے میں 1 سے 3 دن [4]
ہفتے میں 4 دن سے زیادہ (تقریباً روزانہ) [5]
ٹی وی نہیں دیکھتے [6]

سیکشن 2: ریڈیو کا استعمال

Q5. کیا آپ یا آپ کے گھرانے مٰیں کسی فرد کے پاس ریڈیو ہے ؟

ہاں [1] نہیں [2] **(Q8 پر جائیں)**

Q6. آپ **ریڈیو** (بشمول FM) **زیادہ تر** کس طرح سُنتے ہیں؟ **(جواب پڑھ کرسنائیں۔ صرف ایک جواب لیں)**

گھر میں ریڈیو پر [1] سفر کے دوران ریڈیو پر [2]
موبائل فون پر [3] انٹرنیٹ پر [4]
ریڈیو نہیں سنتے [5]
دیگر: _____

Q7. آپ ہفتے میں اندازاً کتنے دن **ریڈیو** (بشمول FM) سُنتے ہیں؟

بہت ہی کم (یعنی مہینے میں 1 بار) [1]
کبھی کبھار یعنی ہفتے میں 1 دن سے بھی کم [2]
ہفتہ میں کم ازکم 1 دن [3]
ہفتے میں 1 سے 3 دن [4]
ہفتے میں 4 دن سے زیادہ (تقریباً روزانہ) [5]
ریڈیونہیں سنتے [6]

سیکشن 3: کمپیوٹر کا استعمال

Q8. کیا آپکے گھرانےمیں کمپیوٹر ہےچاہے وہ کمپیوٹر استعمال ہو تا ہو یا نہ ہوتاہو؟

ہاں [1] **(Q9 پرجائیں)** نہیں [2] **(Q13 پوچھیں)**

Q9. اگر آپ کمپیوٹر کا استعمال کرتے ہیں تو کن کن مقاصد کے لیے استعمال کرتےہیں ؟ **(ایک سے زائد جوابات ممکن ہیں)**

انٹرنیٹ استعمال کرنے کیلئے [1] ویڈیو دیکھنے کیلئے [2]

Q11. اگر کمپیوٹر موجود ہے تو آپ نے یہ کمپیوٹرکتنا عرصہ پہلےخریدا تھا؟

1ماہ پہلے [1] 1-3 ماہ پہلے [2]
3-6ماہ پہلے [3] 6 ماہ سے 1 سال پہلے [4]
1سال سے زائد عرصہ [5]

Q12. اگر کمپیوٹر موجو د ہے تو یہ کس قسم کا ہے؟(جوابات پڑھ کر سنائیں)

لیپ ٹاپ [1] نوٹ بک [2]
ڈیسک ٹاپ [3] ڈیسک ٹاپ اور لیپ ٹاپ دونوں [4]

(Q13 تا Q15صرف اُن سے پوچھیں جنہوں نے Q8میں جواب 2دیا ہو)

Q13. اگر کمپیوٹر نہیں تو آپ مستقبل میں اسے خریدنے کا ارادہ رکھتے ہیں؟

ہاں [1] نہیں

Q14. اگر آپ کے پاس یا آپ کے گھرانے میں کمپیوٹر ہو تا تو اس کا کوئی فائدہ ہو تا؟

ہاں [1] نہیں

Q15. آپ کمپیوٹر حاصل کرنے کے لیےزیادہ سے زیادہ کیا قیمت دینے کو تیار ہیں؟

5,000تک [1] 10,000 – 5,001 [2]
15,000 – 10,001 [3] 15,000سے زائد [4]
جواب نہیں دیا [98]

(سب سے پوچھیں)

Q16. کیا آپ نے گذشتہ 12 ماہ میں کمپیوٹر استعمال کیا ہے ؟(**چاہے وہ کسی بھی جگہ کیا ہو)**

ہاں [1] نہیں

سیکشن 4: انٹرنیٹ کا استعمال

Q17. آپ کے گھرانے میں انٹرنیٹ کی سہولت دستیاب ہے؟ **(چاہے استعمال ہو یا نہ ہو)**

ہاں [1] **(Q18 پوچھیں)** نہیں [2] **(Q21 پر جائیں)**

Q18. اگر انٹرنیٹ دستیاب ہے تو یہ بتائیں کہ آپکے گھرانے نے انٹر نیٹ کتنا عرصہ پہلے استعمال کرنا شروع کیا تھا؟

1ماہ پہلے [1] 1-3 ماہ پہلے [2]
3-6ماہ پہلے [3] 6 ماہ سے 1 سال پہلے [4]
1سال سے زائد عرصہ [5]

Q19. کیا آپ انٹرنیٹ کی سہولت حاصل کرنے کےلیے کوئی رقم ادا کرتے ہیں؟

ہاں [1] نہیں

(صرف اُن سے پوچھیں جنہوں نے Q22میں کوڈ 2 جواب دیا ہو)

Q23. دفتر میں انٹرنیٹ استعمال کرتے ہیں تو کیا گھر پر بھی انٹرنیٹ استعمال کرتے ہیں؟

ہاں 1 نہیں 2

(صرف اُن سے پوچھیں جنہوں نے Q22میں کوڈ 3 جواب دیا ہو)

Q24. اگر تعلیمی ادارے میں انٹرنیٹ استعمال کرتے ہیں تو کیا گھر پر بھی انٹرنیٹ استعمال کرتے ہیں؟

ہاں 1 نہیں 2

Q25. آپ نے پچھلے 12 ماہ میں انٹرنیٹ کو کن سرگرمیوں کیلئے استعمال کیا؟ **(باری باری سب کیلئے پوچھیں انکے علاوہ ہوتو دیگر میں تحریر کریں)**

	(a-k)	ہاں	نہیں
a	اشیاء اور دیگر سہولیات کے بارے میں معلومات حاصل کرنے کےلیے	1	2
b	صحت کے بارے میں معلومات حاصل کرنے کے لیے	1	2
c	حکومتی اداروں سے معلومات حاصل کرنے کے لیے	1	2
d	حکومت سے کسی قسم کے کام کے لیے	1	2
e	ای میل بھیجنے یا حاصل کرنے کے لیے	1	2
f	انٹرنیٹ پر ٹیلی فون کی سہولت یعنی VOIP حاصل کرنےکےلیے	1	2
g	اشیاء اور دیگر سہولیات خریدنے کے لیے (آن لائن شاپنگ)	1	2
h	انٹرنیٹ پر بنکینگ کے لیے	1	2
i	تعلیم کے سلسلے میں	1	2
j	ڈاون لوٹنگ کرنے کے لیے	1	2
k	دیگر **(تحریر کریں)**:_____		

Q26. پچھلے 12 ماہ میں آپ نے انٹرنیٹ کس تسلسل سے استعمال کیا ہے ؟ **(چاہے کہیں سے بھی کیاہو)**

کم سے کم دن میں 1 بار 1
کم سے کم ہفتےمیں 1 بار 2
ہفتے میں 1 بار سے کم 3

Q27. اگر آپ نے انٹر نیٹ استعمال کیا ہےتو کس کس ذریعے سے استعمال کیا ہے؟

(ایک سے زائد جوابات ممکن ہیں جوابات پڑھ کر سنائیں)

1	Dial-Up
2	DSL
3	Wireless Local loop جیسا کہ VPtcl
4	GPRS جیسا کہ موبائل پر انٹرنیٹ استعمال کرنا
5	کیبل نیٹ
6	وائے میکس جیسا کہ وطین وائے میکس
7	PTCL Evo
8	معلوم نہیں
	دیگر (تحریر کریں): _____

Q28. کیا آپ نے درج ذیل سوشل نیٹ ورکنگ کی سائٹس استعمال کی ہیں؟ **(ایک سے زائد جواب ممکن ہے جوابات پڑھ کر سنائیں)** (ہر ایک کے لیےباری باری پوچھیں انکے علاوہ ہوتو دیگر میں تحریر کریں)

	a-f	ہاں	نہیں
a.	فیس بک (Facebook)	1	2
b.	ٹویٹر (Twitter)	1	2
c.	یو ٹیوب (YouTube)	1	2
d.	آرکٹ (Orkut)	1	2
e.	پنٹرسٹ Pintrest	1	2
f.	لنکڈ ان (LinkedIn)	1	2
	دیگر (تحریر کریں): _____		

Q29. کیا آپ نے انٹرنیٹ ویڈیو چیٹنگ کے لیے استعمال کیا ہے؟

ہاں 1 **(Q30پر جائیں)** نہیں 2 **(Q34 پر جائیں)**

Q30. براہ مہربانی ویڈیو چیٹنگ سروس کا نام بتائیں جو آپ نے استعمال کی؟ **(ایک سے زائد جواب ممکن ہے جوابات پڑھ کر سنائیں)**

Skype اسکائپ 1
Facebook Video Chat فیس بک ویڈیو چیٹ 2
Google Hangout گوگل ہینگ آوٹ 3
دیگر **(تحریرکر یں)**:_____

(Q31 سے Q33 ان سے پوچھیں جنھوں نے Q21 میں نہیں کوڈ 2 جواب دیا ہو)

Q31. اگر آپ انٹرنیٹ استعمال نہیں کر رہے تو کیا آپ کو مستقبل میں اسے استعمال کرنے کا ارادہ رکھتے ہیں؟

ہاں 1 نہیں 2

Q32. اگر آپ انٹرنیٹ استعمال کرتے تو اس سے آپ کو ئی فائدہ حاصل ہو تا؟

ہاں 1 نہیں 2

Q33. آپ انٹرنیٹ کو استعمال کرنے کے لیے ماہانہ زیادہ سے زیادہ کتنی قیمت دینے کے لیے تیار ہیں؟

500تک 1 1000 – 501 2
1500 – 1001 3 1500سے زائد 4
جواب نہیں دیا 98

(سب سے پوچھیں)

Q34. آپ کے خیال میں انٹرنیٹ پر ویڈیو سٹریمنگ ، ویب سائٹس ، عام عوام کو میسر ہونی چاہیے؟

ہاں 1 نہیں 2

سیکشن 5: ٹیلی فون کا استعمال

Q35. کیا آپ کے گھرانے کے پاس لینڈلائن ٹیلیفون موجود ہے؟
ہاں [1] **(سیکشن 6پرجائیں)** نہیں [2] **(Q36 پوچھیں)**

Q36. اگر آپ کے گھرانے کے پاس ٹیلی فون لائن نہیں ہے تو کیا آپ مستقبل میں اس کو حاصل کرنے کا ارادہ رکھتے ہیں ؟
ہاں [1] نہیں [2]

Q37. اگر آپ ٹیلی فون لائن استعمال کر تے تو اس سے آپ کو کوئی فائدہ حاصل ہو تا ؟
ہاں [1] نہیں [2]

Q38. آپ ٹیلی فون لائن حاصل کرنے کے لیے زیادہ سے زیادہ ماہانہ کتنی قیمت ادا کرنے کو تیار ہیں؟ **(لائن رینٹ اور استعمال کی قیمت)**
500تک [1] 501 – 1000 [2]
1001 – 1500 [3] 1500سے زائد [4]
جواب نہیں دیا [98]

سیکشن 6: موبائل فون کا استعمال

Q39. کیا آپ کے پاس اپنا ذاتی موبائل فون ہے؟
ہاں [1] **(Q40 پر جائیں)** نہیں [2] **(Q46 پر جائیں)**

Q40. کیا آپ نے پچھلے 12 ماہ میں موبائل فون استعمال کیا ہے؟
ہاں [1] **(Q42 پوچھیں)** نہیں [2] **(Q41, پر جائیں)**

Q41. اگر آپ موبائل فون استعمال کرتے تو کیا آپ کو اس کا کوئی فائدہ ہوتا؟
ہاں [1] نہیں [2]

Q42. آپ اپنے موبائل فون کو درجہ ذیل میں سے کن کن مقاصد کے لیے استعمال کرتے ہیں؟**کال کے لیے ، مس کال کے لیےیا پھر ایس ایم ایس بھیجنے کےلیے؟**

	a-c	ہاں	نہیں
a.	فون کال کرنے کے لیے	1	2
b.	مس کال دینے کے لیے	1	2
c.	ایس ایم ایس کرنے کے لیے	1	2

(اگر Q42cمیں ایس ایم ایس کیلئے ہاں کہا ہوتو پوچھیں)

Q43. آپ ایس ایم ایس عموماً کس زبان میں کرتے ہیں؟
انگریزی [1] اردو [2]
رومن اردو [3] اپنی مادری زبان انگریزی کے حرف میں
دیگر:-- ---------- [4]

(صرف اس صورت میں پوچھیں اگر Q40میں جواب 1دیا ہو)

Q44. آپ اپنے موبائل سے ذیل میں سے کون کون سی سہولیات کا استعمال اکثر کرتے ہیں، کبھی کبھار یا کبھی نہیں کرتےیا یہ سہولت نہیں؟ **(ہر ایک کے لیے علیحدہ علیحدہ پوچھیں) برائے انٹرویور: اگر جوابدہندہ ان کےعلاوہ موبائل میں موجود کسی اور سہولت یا خصوصیت کا استعمال کرتا ہو تو اسے دیگر میں لکھیں)**

	(1-13)	اکثر	کبھی کبھار	کبھی نہیں	سہولت نہیں
1	MMS (ملٹی میڈیا)	1	2	3	4
2	کیمرہ (تصویر کھینچنا)	1	2	3	4
3	تصویر بھیجنا	1	2	3	4
4	ٹارچ کا استعمال	1	2	3	4
5	انٹرنیٹ (GPRS)	1	2	3	4
6	ویڈیو بنانا	1	2	3	4
7	ریڈیو سُننا	1	2	3	4
8	ٹی وی پروگرام دیکھنا	1	2	3	4
9	گانے ڈاؤن لوڈ کرنا	1	2	3	4
10	ویڈیو ڈاؤن لوڈ کرنا	1	2	3	4
11	گیمز کھیلنا	1	2	3	4
12	فیس بک کا استعمال (مثلاً موبائل سے اپنے فیس بک اکاؤنٹ (Account)پر تصویریں upload کرنا	1	2	3	4
13	دیگر تحریر کریں: _____	1	2	3	4

Q45. آپ موبائل فون پر اندازاً ماہانہ کتنا خرچ کرتے ہیں؟
100تک [1] 101 – 200 [2]
300 – 201 [3] 301 – 500 [4]
501 – 1000 [5] 1000 سے زائد [6]

Q46. آپ کے گھرانے میں آپ کے علاوہ کتنے افراد کے پاس موبائل فون ہے؟**(اگر موبائل فون موجود ہے تو کتنے لوگوں کے پاس موجود ہے)**
18سال سے کم عمر کے افراد کی تعداد **(مرد /خواتین)**:_____
18سال سے زائدعمر کے افراد کی تعداد **(مرد /خواتین)**:_____

(Q47 اور Q48 ان سے پوچھیں جنھوں نے Q39 میں جواب نہیں کوڈ 2جواب دیا ہو)

Q47. اس وقت آپ موبائل فون استعمال نہیں کر رہے تو کیا آپ مستقبل میں موبائل فون استعمال کرنے کا ارادہ رکھتے ہیں؟
ہاں [1] نہیں [2]

Q48. آپ موبائل فون استعمال کرنے کے لیے ماہانہ زیادہ سے زیادہ کتنی قیمت دینے کو تیار ہیں ؟
500تک [1] 501 – 1000 [2]
1001 – 1500 [3] 1500سے زائد [4]

ضروری معلومات

D1. جوابدہندہ کی جنس؟
مرد [1] عورت [2]

D2. آپ کی عمر کتنی ہے؟ _____ سال
18 سے 24 سال [1] 25 سے 30 سال [2]
31 سے 40 سال [3] 41 سے 50 سال [4]
51 سے 60 سال [5] 60 سال سے زائد [6]

D3. آپ کے گھر میں بچوں بڑوں اور آپ سمیت ماشاءاللہ کل کتنے افراد ہیں جن کا کھانا ایک جگہ پکایا جاتا ہے؟
تعداد افراد :_____

D4. اور ماشاءاللہ ان میں سے کتنے برسرروزگار ہیں؟ یعنی آمدنی والا کوئی کام کرتے ہیں؟

تعداد برسرروزگار افراد : _____ _____

D5. آپکی تعلیم :_____ ___

(جو مکمل کر چکا ہے اگر سیکنڈ ائر کا طا لب علم ہے تو اسکی تعلیم میٹرک درج ہوگی اسی طرح اگر بی اے ، بی ایس اونر کررہا ہے تو اُسکی تعلیم F.A درج ہوگی)

D6. **(پیشہ کارڈ دکھائیں)** آپ کا پیشہ کیا ہے؟ **(مکمل تفصیل)**

پیشہ کا کوڈ : _____ _____

عہدہ / گریڈ : _____ _____

کاروبار کی صورت میں ملازمین کی تعداد اندازاً : _____ _____

D7. آپ کی مادری زبان کونسی ہے؟ _____

اردو	1	پنجابی	2
پشتو	3	سندھی	4
بلوچی	5	سرائیکی	6
دیگر:_____		جواب نہیں دیا	9

D8. آپ کا مذہب کیا ہے؟

مسلمان	1	عیسائی	2
ہندؤ / پارسی	3	دیگر:------ ----------	

D9. آپ کے گھرانے کے کُل ماہانہ اخراجات اندازاًکتنے ہیں؟ براہِ کرم اس میں تمام اخراجات مثلاًکھانے/پینے پر اخراجات، کپڑے وغیرہ پر اخراجات، بچوں کی تعلیم وغیرہ پر اخراجات، بجلی ، گیس، ٹیلیفون کے بل سب کو شامل کرکے بتائیں؟

رقم درج کریں

_____ _____ _____

جواب نہیں دیا 98 معلوم نہیں 99

D10. اور گھرانے کی کُل ماہانہ آمدنی اندازاً کتنی ہے؟ براہِ کرم اپنے گھرانے میں کمانے والے تمام افرادکی آمدنیوں کو ملا کر بتائیں؟

(ماہانہ آمدنی درج کریں)

_____ _____ _____

جواب نہیں دیا 98 معلوم نہیں 99

D11. کیا آپ شادی شدہ ہیں؟

ہاں 1 نہیں 2

D12. ہم اپنے سروے کے ذریعے یہ بھی معلوم کرتے ہیں کہ پاکستان کے لوگوں کا معیارِ زندگی کیسا ہے؟ یعنی کتنے فیصد لوگوں کے پاس مختلف گھریلو استعمال کی اشیاءموجود ہیں تو بتائیں کہ **(باری باری ہر چیز کے لیے پوچھیں)** کیا آپ کے گھر میں _____(نام چیز) موجود ہے؟

		ہے	نہیں		ہے	نہیں
a	موٹر سائیکل	1	2	L	سائیکل	1	2
b	ائیر کنڈیشنر	1	2	M	کار	1	2
c	کپڑے دھونےوالی مشین والےوالی مشین	1	2	N	اینر کولر	1	2
d	VCR/VCP	1	2	O	فریج / ریفریجریٹر	1	2
e	جنریٹر	1	2	P	کپڑے سینے والی مشین	1	2
f	مائیکروویواوون	1	2	Q	ٹیپ ریکارڈر	1	2
g	پلے اسٹیشن	1	2	R	ڈیپ فریزر	1	2
h	کریڈٹ کارڈ	1	2	S	واٹر فلٹر	1	2
i	بینک اکاؤنٹ	1	2	T	ڈی وی ڈی (DVD)	1	2
				U	UPS	1	2

D13. کیا آپ کے گھر میں بجلی ہے؟

ہاں 1 نہیں 2

D14. آپ کا نام؟ _____

D15. مکمل پتہ: _____

_____

D16. موبائل فون نمبر: _____

D17. وقت اختتام _____ بجکر _____ منٹ

D18 کیا آپ ہمارے ایک اور اسی طرح کے سروے میں جو کہ کچھ عرصہ بعد ہوگا حصہ لینا پسند کریں گے۔

ہاں 1 نہیں 2

آپ کے تعاون کا شکریہ ۔ ہو سکتا ہے آئندہ اسی طرح کے سروے کے سلسلے میں ہمارا نمائندہ آپ سے رابطہ کرے۔

انٹرویور کےلیئے

(درج ذیل معلومات اگلا انٹرویو شروع کرنے سے پہلے مکمل کریں!)

D19. مندرجہ ذیل میں سے کون سی عبارت آپ کے خیال میں جوابدہندہ کی سوالنامے کو سمجھنے میں آسانی یا مشکل کی عکاسی کرتی ہے؟

1 جوابدہندہ کو پورے سوالنامے میں کو ئی خاص دشواری نہیں ہو ئی

2 جوابدہندہ زیادہ تر سوالات آسانی سے سمجھ گیا

3 جوابدہندہ کچھ سوالات آسانی سے سمجھ پایا

4 جوابدہندہ کو تقریباً پورے سوالنامے کو سمجھنے میں دشواری ہو ئی

D20. یہ سوالنامہ کتنی کوششوں میں مکمل ہوا ؟

پہلی 1 دوسری 2 تیسری 3

(سب کے لیے)

D21. انٹرویو کس زبان میں ہوا؟

مکمل اردو زبان میں 1 زیادہ تر اردو زبان میں 2

میں تصدیق کرتا ہوں کہ میں نے یہ سوالنامہ گیلپ کی طرف سے ملنے والی ہدایات کے مطابق مکمل کیاہے

انٹرویور کانام _____

دستخط _____

انٹرویو ر کی جنس: مرد 1 عورت 2

انٹرویو کی مادری زبان _____

سپر وائزر کےلیئے

D22. انٹرویور کو چیک کیا گیا ؟

ہاں 1 نہیں 2

D23. چیک کرنے کے لئے کونسا طریقہ اختیار کیا گیا؟

1	انٹرویو کے دوران چیکنگ (براہ راست نگرانی)
2	انٹرویو کے بعد سپروائزر کی جوابدہندہ سے ملاقات
3	انٹرویو کے بعد سپروائزر کا سنٹرل آفس کی جوابدہندہ سےفون کے ذریعے چیکنگ
4	چیکنگ نہیں کی

D24. نتیجہ تصدیق_____

نام سپر وائزر :

D25. نام فیلڈ ایڈیٹر (نام آرسی صاحبان):

دستخط فیلڈ ایڈیٹر :

D26. انٹری کرنے والے کا کوڈ_____

D27. کوڈنگ کرنے والے کا کوڈ:

2:

Education Institutes Survey Questionnaire

سوالنامہ برائے ایجوکیشن سروے2013

طالبعلم کے لیے

S-21326

ریجن _____ سیمپل پوائنٹ نمبر _____

شہر /گاؤں _____ تحصیل _____

ضلع _____ شہری [1] دیہی [2]

انٹرویو نمبر_____ انٹرویو شروع کرنے کا وقت___بج کر __منٹ

السلام علیکم! میرا نام ـــــــــــ ہے اور میں ادارہ رائے عامہ پاکستان کا /کی نمائندہ ہوں۔ ہمارا ادارہ تحقیق کا ادارہ ہے۔ اس وقت ہم ایک سروے کررہے ہیں جس میں ہم زندگی کے مختلف پہلوؤں اور قومی امور سے متعلق سوالات کریں گے۔ اگر آپ کچھ وقت دیں تو میں بہت شکر گزار ہوں گا/ گی۔

(ہدایات برائے انٹرویور:۔ پرائمری سکول میں کلاس 3 یا اس سے ہائر طالب علم سےسوالنامے فل کریں)

سکیشن 1 : تعارف

Q1.آپ آجکل کس تعلیمی ادارے میں پڑھ رہے ہیں یعنی آپکے تعلیمی ادارے کا نام کیا ہے ؟

نام:_____

Q2.آپ کے ادارے میں کل کتنے اساتذہ پڑھاتے ہیں ؟

تعداد:_____

Q3. آپ آجکل کس درجے کی تعلیم حاصل کر رہے ہیں؟

پرائمری [1] **(Q4سےQ6 پوچھیں)** مڈل [2]

(Q4سےQ6 پوچھیں)

ہائی اسکول [3] **(Q4سےQ6 پوچھیں)** انٹرمیڈیٹ [4] **(Q4سےQ6 پوچھیں)**

ڈگری کالج [5] **(Q4سےQ6 پوچھیں)** یونیورسٹی [6] **(Q7سےQ8 پوچھیں)**

دیگر:_____

سکیشن 2 : پرائمری، مڈل ، ہائی اسکول، انٹرمیڈیٹ ،ڈگری کالج

Q4. آپ جہاں پڑھتے ہیں کیا وہاں کمپیوٹر سے تعلیم دی جا تی ہے؟

ہاں [1] نہیں [2]

Q5. کیا آپ کے ادارے میں Radio کے ذریعے تعلیم دی جا تی ہے؟

ہاں [1] **(اگر ہاں ہو تو کتنے Radioتعداد میں موجود ہیں)** تعداد: _____

نہیں [2]

Q6. کیا آپ کے ادارے میں TV کے ذریعے تعلیم دی جا تی ہے؟

ہاں [1] **(اگر ہاں ہو تو کتنےTVتعداد میں موجود ہیں)** تعداد: _____

نہیں [2]

سکیشن 3: صرف یونیورسٹی کے طالبعلموں کےلیے

Q7. کیا آپ کا ادارہ کسی بین الاقوامی جرنل کی subscription رکھتا ہے؟ **(اگر ہاں تو کن کن جرنلز کی)**

ہاں [1] نہیں [2]

جرنل1: _____

جرنل2: _____

جرنل3: _____

Q8. کیا اساتذہ اور طالبعلم کلاس شیڈول انٹر نیٹ پر دیکھ سکتے ہیں؟

ہاں [1] نہیں [2] پتہ نہیں [3]

سکیشن 4: کمپیوٹر کا استعمال (سب سے پوچھیں)

Q9. کیا آپ کے ادارے کے نتائج انٹرنیٹ پرمہیا کیئے جاتے ہیں؟

ہاں [1] نہیں [2]

Q10. کیا آپ کے ادارے میں کوئی کمپیوٹر لیب موجود ہے؟

ہاں [1] نہیں [2]

Q11. آپ کے ادارے میں کل کتنے کمپیوٹر موجود ہیں؟

کل تعداد_____

Q12. کیا آپ کے ادارے میں کمپیوٹر کی تعلیم دینے کے لیے اساتذہ موجود ہیں؟

ہاں [1] کمپیوٹرکےاساتذہ کی تعداد نوٹ کریں:____ __

نہیں [2]

Q13. آپ کے ادارے میں کمپیوٹر کن کن مقاصد کے لیے استعمال ہوتا ہے؟

(ایک سے زائد جوابات ممکن ہیں)

پڑھائی کے لیے استعمال ہو تا ہے [1]

صرف پریکٹیکل ورک کےلیے استعمال کرتا ہے [2]

اساتذہ اسے صرف اپنے لیے استعمال کر تے ہیں [3]

ایڈمن(Admin) کے استعمال کے لیے ہے [4]

کمپیوٹر نہیں ہیں [5]

دیگر **(تحریر کریں)**:_____

Q14. کیاآپ کے ادارے میں کمپیوٹر کے ساتھ پرنٹر کی سہولت موجود ہے؟

ہاں [1] نہیں [2]

Q15. کیاآپ کے ادارے میں باقاعدہ کمپیوٹر کی کلاسز ہو تی ہیں؟

ہاں [1] نہیں [2]

Q16. کیا آپ کے ادارے میں کمپیوٹر صرف کمپیوٹر کے Subject کے حوالے سے استعمال ہو تے ہیں یا آپ اس کو Computer کورس کے علاوہ بھی استعمال کر تے ہیں؟

صرفComputer Course کے لیے [1]

Computer کے Subject کے علاوہ بھی استعمال ہو تاہے [2]

کمپیوٹر نہیں ہیں [3]

سکیشن 5: انٹرنیٹ کا استعمال

Q17.آپ اپنے ادارے میں انٹرنیٹ استعمال کر تے ہیں؟

ہاں [1] نہیں [2] **(ضروری معلومات پر چلے جائیں)**

ادارے میں انٹرنیٹ کی سہولت موجود نہیں ہے [3] **(ضروری معلومات پر چلے جائیں)**

Q18.اگر ادارے میں انٹرنیٹ استعمال کرتے ہیں تو کیا گھر پر بھی انٹرنیٹ استعمال کرتے ہیں؟

ہاں [1] نہیں [2]

Q19. آپ کے ادارے میں انٹرنیٹ کی سہولت کتنے کمپیوٹرز پر ہے؟

25 فیصد یا اس سے کم [1] 25سے50 فیصد [2]

50سے75 فیصد [3] 75سے100فیصد [4]

Q20. آپ کے ادارے میں انٹرنیٹ کا استعمال کتنا زیادہ ہو تا ہے؟

بہت زیادہ [1] تھوڑا بہت [2]

بہت کم [3] بالکل نہیں [4]

Q21. آپ کے خیال میں آپ کو اپنے ادارے میں انٹرنیٹ کے استعمال سے کیا کیا سہولیات حاصل ہو تی ہیں ؟ **(ایک سے زائد جوابات ممکن ہیں)**

	(a-g)	
a	داخلوں کے حوالے سے معلومات ملتی ہیں	1
b	ادارے کے بارے میں معلومات ملتی ہیں	2
c	مضامین کے بارے میں معلومات حاصل کرنے کےلیے	3
d	اپنی ریسرچ کے حوالے سے	4
e	رزلٹ کے بارے میں معلومات حاصل کرنے لیے	5
f	بورڈ سے رجسٹریشن کروانے میں آسانی	6
g	Date Sheet کے حوالے سے	7

ضروری معلومات

D1. جوابدہندہ کی جنس **(بغیر پوچھے نوٹ کریں)**

مرد [1] عورت [2]

D2. آپکی عمر: _____

اگر جوابدہندہ اصل عمر بتانے سے انکار کرے تو انٹرویور اندازہ لگا کر عمر نوٹ کرے۔

D3. تمام وسائل سے آپ کے گھرانے کی کل ماہانہ آمدنی کتنی ہے، یعنی اس گھرانے کی ہر طرح سے کل آمدنی کیا ہے...؟

1000تک	[1]	1001 – 3000 تک	[2]
3001 – 5000 تک	[3]	5001 – 7000 تک	[4]
7001 – 10000 تک	[5]	10001 – 15000 تک	[6]
15001یا اس سے زائد	[7]	جواب دینے سے انکار	[98]
معلوم نہیں	[99]		

D4. کیا آپ ہمارے ایک اور سروے میں جو کہ کچھ عرصے بعد ہوگا ہمارے سوالوں کے جواب دیکر ہمارے ساتھ تعاون کریں گے ؟

ہاں [1] نہیں [2]

جواب دہندہ سے کہیں:

ہمارے ساتھ تعاون کرنے کا بہت بہت شکریہ۔ اگر آپ کچھ پوچھنا چاہتے ہیں تو ضرور پوچھیں ہوسکتا ہے کہ کچھ عرصے کے بعد میرے سپر وائزر میرے کام کی کوالٹی کو چیک کرنے کیلئے آپ سے رابطہ کریں ۔ اس مقصد کےلئے کیا میں آپ سے آپکا ٹیلی فون نمبر اور پتہ پوچھ سکتا ہوں۔

جوابدہندہ کا نام :_____

پتہ :_____ ____ ____

_____

موبائل فون نمبر :_____ _____ _

وقت اختتام انٹرویو :_____بجکر _____منٹ_____

تاریخ :_____ _____

انٹرویور کےلیئے

(درج ذیل معلومات اگلا انٹرویو شروع کرنے سے پہلے مکمل کریں!)

D19. مندرجہ ذیل میں سے کون سی عبارت آپ کے خیال میں جوابدہندہ کی سوالنامے کو سمجھنے میں آسانی یا مشکل کی عکاسی کرتی ہے؟

[1] جوابدہندہ کو پورے سوالنامے میں کو ئی خاص دشواری نہیں ہو ئی
[2] جوابدہندہ زیادہ تر سوالات آسانی سے سمجھ گیا
[3] جوابدہندہ کچھ سوالات آسانی سے سمجھ پایا
[4] جوابدہندہ کو تقریباً پورے سوالنامے کو سمجھنے میں دشواری ہو ئی

D20. یہ سوالنامہ کتنی کوششوں میں مکمل ہوا ؟

پہلی [1] دوسری [2] تیسری [3]

D21. انٹرویو کس زبان میں ہوا؟

مکمل اردو زبان میں [1] زیادہ تر اردو زبان میں [2]

میں تصدیق کرتا ہوں کہ میں نے یہ سوالنامہ گیلپ کی طرف سے ملنے والی ہدایات کے مطابق مکمل کیاہے

انٹرویور کانام _____

دستخط _____

انٹرویو ر کی جنس: مرد [1] عورت [2]

انٹرویور کی مادری زبان _____

سپر وائزر کےلیئے

D22. انٹرویور کو چیک کیا گیا ؟

ہاں [1] نہیں [2]

D23. چیک کرنے کے لئے کونسا طریقہ اختیار کیا گیا؟

[1] انٹرویو کے دوران چیکنگ (براہ راست نگرانی)
[2] انٹرویو کے بعد سپروائزر کی جوابدہندہ سے ملاقات
[3] انٹرویو کے بعد سپروائزر کا سنٹرل آفس کی جوابدہندہ سےفون کے ذریعے چیکنگ
[4] چیکنگ نہیں کی

D24. نتیجہ تصدیق_____

نام سپر وائزر :_____

D25. نام فیلڈ ایڈیٹر (نام آرسی صاحبان):_____

دستخط فیلڈ ایڈیٹر :_____

D26. انٹری کرنے والے کا کوڈ_____

D27. کوڈنگ کرنے والے کا کوڈ:_____

سوالنامہ برائے ایجوکیشن سروے2013

ایڈمن کے لیے

S-21326

ریجن _____ سیمپل پوائنٹ نمبر _____

شہر /گاؤں _____ تحصیل _____

ضلع _____ شہری 1 دیہی 2

انٹرویو نمبر _____ انٹرویو شروع کرنے کا وقت___بج کر __منٹ

السلام علیکم! میرا نام ـــــــ ہے اور میں ادارہ رائے عامہ پاکستان کا /کی نمائندہ ہوں۔ ہمارا ادارہ تحقیق کا ادارہ ہے۔ اس وقت ہم ایک سروے کررہے ہیں جس میں ہم زندگی کے مختلف پہلوؤں اور قومی امور سے متعلق سوالات کریں گے۔ اگر آپ کچھ وقت دیں تو میں بہت شکر گزار ہوں گا/ گی۔

	انٹرویور	سپروائزر
نام:		
دستخط:		
انٹرویو کی تاریخ:		

سیکشن 1 : تعارف

Q1. آپ کے تعلیمی ادارے کا درجہ کیا ہے؟

پرائمری 1 مڈل 2

ہائی اسکول 3 انٹرمیڈیٹ 4

ڈگری کالج 5 یونیورسٹی 6

دیگر:_____

Q2. آپ کاادارہ پبلک ہے یا پرائیویٹ؟

پبلک 1 پرائیویٹ 2

Q3. آپ کے ادارے کے طلباء :

لڑکیاں ہیں 1 لڑکے ہیں 2 دونوں ہیں 3

Q4. اندازے سے بتائیں کہ آپ کے ادارے میں کل کتنے طلباء زیر تعلیم ہیں ؟

تعداددرج کریں :_____

Q5. آپ کے ادارے میں کل کتنے اساتذہ موجود ہیں ؟

تعداددرج کریں :_____

Q6. آپ اس تعلیمی ادارے سے کس طرح وابستہ ہیں ؟

ٹیچر 1 ہیڈ ٹیچر 2

ایڈمن 3 ٹیچراور ایڈمن دونوں 4

رجسٹرار 5 دیگر(تحریرکریں):_____

سیکشن 2 : صرف یو نیورسٹی کے لیے

Q7. کیا آپ کا ادارہ کورس ریجسٹریشن کیلئےکمپیوٹر کا استعمال کر تا ہے؟

ہاں 1 نہیں 2 پتہ نہیں 3

Q8. کیا آپ کے ادارے کے طالبعلم اپنا تعلیمی ریکارڈ ویب سائٹ پر دیکھ سکتے ہیں؟

ہاں 1 نہیں 2

Q9. کیا آپ کا ادارہ طالبعلموں اور اساتذہ کے ساتھ رابطے میں رہنے کیلئے کسی پورٹل کا استعمال کرتاہے؟ ہاں 1 نہیں 2 پتہ نہیں 3

Q10. کیا آپ کا ادارہ کسی اندرونی نیٹ ورک کے ذریعے سے منسلک ہے؟

ہاں 1 نہیں 2 پتہ نہیں 3

Q11. کیا طالبعلم آپ کی یونیورسٹی پالیسی انٹرنیٹ کے ذریعے دیکھ سکتے ہیں؟

ہاں 1 نہیں 2 پتہ نہیں 3

Q12. کیا اساتذہ اور طالبعلم کلاس شیڈول انٹر نیٹ پر دیکھ سکتے ہیں؟

ہاں 1 نہیں 2 پتہ نہیں 3

Q13. کیا آپ کا ادارہ باقی تعلیمی اداروں کے ساتھ نیٹ ورک کے ذریعے منسلک ہے؟

ہاں 1 نہیں 2 پتہ نہیں 3

Q14. کیا آپ کے ادارے کے نتائج انٹرنیٹ میں مہیا کیئے جاتے ہیں؟

ہاں 1 نہیں 2

Q15. کیا آپ کے ادارے کاکو ئی آفیشل E-mail ایڈریس ہے؟

ہاں 1 (تحریرکریں): _____@_____ نہیں 2

Q16. آپ کے ادارے کی کو ئی Web-Site ہے؟

ہاں 1 (تحریرکریں): www._____ نہیں 2

سیکشن3 : کمپیو ٹر کا استعمال (سب سے پوچھیں)

Q17. کیا آپ کے ادارے میں کمپیوٹر موجود ہیں؟

ہاں 1 **(Q18پر جائیں)** نہیں 2 **(Q28پر جائیں)**

Q18. کیا آپ کے ادارے میں کمپیوٹر کی تعلیم دی جا تی ہے؟

ہاں 1 نہیں 2

Q19. آپ کے ادارے میں کل کتنے کمپیوٹر موجود ہیں،اور ان میں سے کتنے کمپیوٹر قابل استعمال ہیں؟

a. قابل استعمال کمپیوٹر _____

b. ناقابل استعمال کمپیوٹر _____

c. تعلیم کے لیے مختص کمپیوٹر کی تعداد_____

d. کل تعداد قابل /نا قابل استعمال کمپیوٹر _____

Q20. آپ کے ادارےمیں کل کتنے طالب علموں کو کمپیوٹر استعمال کر نے کی اجازت ہے؟

طالبعلموں کی تعداد **(تحریرکریں)**:_____

(صرف ان سے پوچھیں جو سکول کالج کا درجہ رکھتے ہوں)

Q21. آپ کے ادارے میں کمپیوٹر کس حد تک استعمال کیا جا تا ہے؟

	کلاس (a-f)	ہفتے میں ایک بار	ہفتے میں دو بار	ہفتے میں تین بار	روزانہ	کوئی استعمال نہیں
a	پہلی جماعت سے نیچے	☐	☐	☐	☐	☐
b	پہلی سے پانچویں جماعت تک	☐	☐	☐	☐	☐
c	چھٹی سے آٹھویں جماعت تک	☐	☐	☐	☐	☐
d	نویں سے دسویں جماعت تک	☐	☐	☐	☐	☐
e	گیارویں سے بارویں جماعت تک	☐	☐	☐	☐	☐
f	بارویں جماعت سے اوپر	☐	☐	☐	☐	☐

Q22. کیا آپ کے ادارے میں کمپیوٹر کوالیفائڈ ٹیچر موجود ہیں؟
ہاں 1 نہیں 2

Q23. کیا آپ کے ادارے میں کمپیوٹر لیب موجود ہیں؟
ہاں 1 **(تو تعداد لکھیں)**:_____
نہیں 2

Q24. آپ کے ادارے میں کمپیوٹر جدید ہیں یا پرانے؟
جدید ہیں 1 پرانے ہیں 2

Q25. کیا طالبعلموں اور دیگر اسٹاف کو کمپیوٹر استعمال کرنے کی اجازت ہو تی ہے؟
ہاں 1 نہیں 2

Q26. کیا آپ کے ادارے میں موجود کمپیوٹر آپ کے ادارے کی ضروریات پوری کر تے ہیں؟
ہاں ضروریات پوری کرتے ہیں 1
نہیں ضروریات پوری نہیں کر تے 2
بامشکل ضروریات پوری کر تے ہیں 3

Q27. کیاآپ کے ادارے میں کسی قسم کی نیٹ ورکنگ ہوئی ہے؟
ہاں 1 نہیں 2

(سب سے پوچھیں)

Q28. کیا آپ کے ادارے میں Radio کے ذریعے تعلیم دی جا تی ہے؟
ہاں 1 نہیں 2

Q29. کیا آپ کے ادارے میں TV کے ذریعے تعلیم دی جا تی ہے؟
ہاں 1 نہیں 2

(برائے انٹرویور: Q30 سے Q32 ان سے پوچھیں جنھوں Q17 میں نہیں کوڈ 2 جواب دیا ہو)

Q30. اگر کمپیوٹر میسر نہیں تو کیا آپ کا ادارہ مستقبل میں کمپیوٹر خریدنے کا ارادہ رکھتاہے؟
ہاں 1 نہیں 2

Q31. اگر آپ کے ادارے میں کمپیوٹر میسر ہو تے تو آپ کے ادارے کو اس کا فائدہ ہو تا ؟
ہاں 1 نہیں 2

Q32. آپ فی کمپیوٹر زیادہ سے زیادہ کتنی قیمت خر چ کرنے کو تیار ہیں کہ آپ کے ادارے کو کمپیوٹر کی سہولت دستیاب ہو جائے؟
5,000تک 1 5,001 – 10,000 تک 2
10,001 – 15,000 تک 3 15,000سے زائد 4

سیکشن4 : انٹرنیٹ کا استعمال

Q33. کیا آپ کے ادارے میں طالبعلموں یا اسٹاف کو انٹرنیٹ استعمال کرنے کی اجازت ہے؟
ہاں 1 طالب علموں کی تعدادنوٹ کریں: _____**(Q34پوچھیں)**
نہیں 2 **(Q38پوچھیں)**

Q34. آپ کے ادارے میں انٹرنیٹ کون کون استعمال کر تا ہے؟ **(ایک سے زائد جواب دے سکتے ہیں)**
اساتذہ 1 ایڈمن 2
اکاونٹنٹ آفس 3 پرنسپل 4
طالبعلم 5

Q35. آپ کے ادارے میں انٹرنیٹ کنکشن کس قسم کا ہے؟ **(ایک سے زائد جوابات دے سکتے ہیں)**
Dial-Up 1 DSL 2
Wirless Local loop جیسا کہ VPtcl 3
GPRS جیسا کہ موبائل پر انٹرنیٹ استعمال کرنا 4
کیبل نیٹ 5
وائے میکس جیسا کہ وطین وائے میکس 6
PTCL Evo 7 دیگر_____

Q36. انٹرنیٹ استعمال کرنے کے لیے آپ کونسا ماہانہ پیکج استعمال کر تے ہیں ؟

روپوں میں قیمت (تحریرکریں)_____ ___
نام (پیکج)_____ _____
حکومت مہیا کرتی ہے 1 پتہ نہیں /جواب نہیں دیا 99

Q37. آپ کے خیال میں آپ کے ادارے کو انٹرنیٹ کے استعمال سےمندرجہ ذیل میں سے کسی قسم کا فائدہ ہوتا ہے؟(برایک کیلئے باری باری پوچھیں)

	(a-e)	
a	داخلوں کے حوالے سے	1
b	ادارے کے بارے میں معلومات لوگوں تک پہنچانے کے حوالے سے	2
c	ادارے کے طالب علموں کو کورس/مضامین کے بارے میں معلومات پہنچانے کے حوالے سے	3
d	ادارے کے اساتذہ کو اپنی ریسرچ کے حوالے سے	4
e	دور دراز کے علاقوں میں رہنے والے لوگوں تک معلومات پہنچانے کے حوالے سے	5
	دیگر (تحریر کریں):_____ ___	

(برائے انٹرویور: Q38 سے Q40 ان سے پوچھیں جنھوں نے Q33 میں نہیں کوڈ 2 جواب دیا ہو)

Q38. اگر آپ کے ادارے میں انٹڑنیٹ کی سہولت دستیاب نہیں تو کیا آپ کا ادارہ مستقبل میں یہ سہولت حاصل کرنے کا ارادہ رکھتا ہے ؟
ہاں 1 نہیں 2

Q39. اگر آپ کے ادارے میں انٹرنیٹ دستیاب ہو تا تو کیا یہ آپ کے ادارے کے لیے فائدہ مند ہو تا ؟
ہاں 1 نہیں 2

Q40. آپ مہینے میں انٹرنیٹ حاصل کرنے کی زیادہ سے زیادہ کتنی قیمت ادا کرنے کو تیار ہیں؟
500سے کم 1 500 – 1000 2
1000 – 1500 3 1500سے زائد 4

سیکشن5 : مستقل ٹیلی فون لائن کا استعمال

Q41. کیا آپ کے ادارے میں مستقل ٹیلی فون لائن موجود ہے؟
ہاں 1 **(ضروری معلومات پر چلے جائیں)** نہیں 2 **(Q42پوچھیں)**
پتہ نہیں 3

Q42. اگر آپ کے ادارے میں مستقل ٹیلی فون لائن موجود نہیں کیا آپ کا ادارہ مستقبل میں اسے حاصل کرنے کا ادارہ رکھتا ہے؟
ہاں 1 نہیں 2

Q43. اگر آپ کا ادارہ مستقل ٹیلی فون لائن استعمال کر تا تو کیا آپ کے ادارے کو اس کا کوئی فائدہ ہو تا ؟
ہاں 1 نہیں 2

Q44. آپ ٹیلی فون لائن حاصل کرنے کی خاطر زیادہ سے زیادہ ماہانہ کتنی قیمت دینے کو تیار ہیں؟
500سے کم 1 500 – 1000 2

ضروری معلومات

D1.جوابدہندہ کی جنس **(بغیر پوچھے نوٹ کریں)**

مرد [1] عورت [2]

D2.آپکی عمر: _____

اگر جوابدہندہ اصل عمر بتانے سے انکار کرے تو انٹرویور اندازہ لگا کر عمر نوٹ کرے۔

D3.آپکی تعلیم :_____

D4. جوابدہندہ کتنے عرصے سے اس سکول میں ملازمت کر رہے ہیں؟

مہینے:_____ سال :_____

D5. آپ کے ادارے کی اوسطاً ماہانہ فیس اندازً کتنی ہے؟

ماہانہ فیس **(تحریرکریں)**:___ _____ کوئی فیس نہیں [1]

D6.کیا آپ ہمارے ایک اور سروے میں جو کہ کچھ عرصے بعد ہوگا ہمارے سوالوں کے جواب دیکر ہمارے ساتھ تعاون کریں گے ؟

ہاں [1] نہیں [2]

جواب دہندہ سے کہیں:

ہمارے ساتھ تعاون کرنے کا بہت بہت شکریہ۔ اگر آپ کچھ پوچھنا چاہتے ہیں تو ضرور پوچھیں ہوسکتا ہے کہ کچھ عرصے کے بعد میرے سپر وائزر میرے کام کی کوالٹی کو چیک کرنے کیلئے آپ سے رابطہ کریں ۔ اس مقصد کےلئے کیا میں آپ سے آپکا ٹیلی فون نمبر اور پتہ پوچھ سکتا ہوں۔

جوابدہندہ کا نام :_____

ادارے کا نام و مکمل پتہ : _____

_____

_____

موبائل فون نمبر :_____ _____ _

وقت اختتام انٹرویو :_____بجکر _____منٹ_____

تاریخ :_____ _____

انٹرویور کےلیئے

(درج ذیل معلومات اگلا انٹرویو شروع کرنے سے پہلے مکمل کریں!)

D19. مندرجہ ذیل میں سے کون سی عبارت آپ کے خیال میں جوابدہندہ کی سوالنامے کو سمجھنے میں آسانی یا مشکل کی عکاسی کرتی ہے؟

جوابدہندہ کو پورے سوالنامے میں کو ئی خاص دشواری نہیں ہو ئی [1]

جوابدہندہ زیادہ تر سوالات آسانی سے سمجھ گیا [2]

جوابدہندہ کچھ سوالات آسانی سے سمجھ پایا [3]

جوابدہندہ کو تقریباً پورے سوالنامے کو سمجھنے میں دشواری ہو ئی [4]

D20. یہ سوالنامہ کتنی کوششوں میں مکمل ہوا ؟

پہلی [1] دوسری [2] تیسری [3]

D21. انٹرویو کس زبان میں ہوا؟

مکمل اردو زبان میں [1] زیادہ تر اردو زبان میں [2]

میں تصدیق کرتا ہوں کہ میں نے یہ سوالنامہ گیلپ کی طرف سے ملنے والی ہدایات کے مطابق مکمل کیاہے

انٹرویور کانام _____

دستخط _____

انٹرویو ر کی جنس: مرد [1] عورت [2]

انٹرویور کی مادری زبان _____

سپر وائزر کےلیئے

D22. انٹرویور کو چیک کیا گیا ؟

ہاں [1] نہیں [2]

D23. چیک کرنے کے لئے کونسا طریقہ اختیار کیا گیا؟

انٹرویو کے دوران چیکنگ (براہ راست نگرانی) [1]

انٹرویو کے بعد سپروائزر کی جوابدہندہ سے ملاقات [2]

انٹرویو کے بعد سپروائزر کا سنٹرل آفس کی جوابدہندہ سےفون کے ذریعے چیکنگ [3]

چیکنگ نہیں کی [4]

D24. نتیجہ تصدیق_____

نام سپر وائزر : _____

D25. نام فیلڈ ایڈیٹر (نام آرسی صاحبان):_____

دستخط فیلڈ ایڈیٹر :_____

D26. انٹری کرنے والے کا کوڈ_____

D27. کوڈنگ کرنے والے کا کوڈ:_____

3:

Enterprises Survey Questionnaire

انٹرپرائز سوالنامہ

S-21326

ریجن _____ سیمپل پوائنٹ نمبر _____

شہر /گاؤں _____ تحصیل _____

ضلع _____ شہری [1] دیہی [2]

رابطہ نمبر _____ انٹرویو نمبر _____

انٹرویو شروع کرنے کا وقت_____بج کر _____منٹ

السلام علیکم! میرا نام ـــــــــ ہے اور میں ادارہ رائے عامہ پاکستان کا /کی نمائندہ ہوں۔ ہمارا ادارہ تحقیق کا ادارہ ہے۔ اس وقت ہم ایک سروے کررہے ہیں جس میں ہم زندگی کے مختلف پہلوؤں اور قومی امور سے متعلق سوالات کریں گے۔ اگر آپ کچھ وقت دیں تو میں بہت شکر گزار ہوں گا/ گی۔

S1. کام کی نوعیت نوعیت سے مراد مینوفیکچرنگ ٹریڈ (تجارت) یا سروسز ؟ **کوڈ کی گنجائش کے مطابق انٹرویو کریں۔**

مینو فیکچرنگ(Manufacturing) [1]
ٹریڈ (Trade) [2]
سروسز(Services) [3]

S2. کاروبار کا سائز یعنی ملازمین کی تعداد کے مطابق سمال ، میڈیم، لارج؟ **کوڈ کی گنجائش کے مطابق انٹرویو کریں۔**

تعداد ملازمین

سمال (Small) (11-50) [1]
میڈیم (Medium) (51-100) [2]
لارج (Large) (100+) [3]

سیکشن 1 تعارف

Q1. آپ کے ادارے کا قانونی درجہ کیا ہے؟

1	شئیر ہولڈنگ کمپنی جس کے شئیر اسٹاک مارکیٹ میں خریدے بیچے جاتے ہوں
2	شئیر ہولڈنگ کمپنی جس کے شئیر کی اسٹاک مارکیٹ میں تجارت نہ ہو
3	ذاتی ملکیت
4	پارٹنرشپ
5	لیمیٹڈ پارٹنر شپ
	دیگر تحریر کریں_____
6	پتہ نہیں

Q2. اس ادارے نے کام کس سال شروع کیا تھا؟

سن درج کریں:_ _____ معلوم نہیں [1]

Q3. کیا آپ کا ادارہ کاروباری امور کی خاطر موبائل فون کا استعمال کرتا ہے؟

ہاں [1] نہیں [2] معلوم نہیں [3]

سیکشن2 کمپیوٹر کا استعمال

Q4.کیا آپ کے کاروبار میں پچھلے 12 مہینے میں کمپیوٹر کا استعمال ہوا؟

ہاں [1] **(Q7 پرجائیں)** نہیں [2] **(Q5 پوچھیں)**
پتہ نہیں [3] **(سیکشن 3 پرجائیں)**

Q5.کمپیوٹر کی زیادہ سے زیادہ کیا قیمت ہو کہ آپ اسے استعمال کرنے پر آمادہ ہو نگے؟

5000 تک [1] 5001 سے 10,000 [2]
10,001سے15,000 [3] 15,000 سے زائد [4]

Q6. یہ بتائیں کہ اگر آپ کے ادارے میں کمپیوٹر استعمال ہوتا تو اس سے بہتری آسکتی ہے؟

ہاں [1] نہیں [2] معلوم نہیں [3]

(Q7تا Q13 تب پوچھیں اگرQ4میں ہاں کوڈ1دیا ہو)

Q7. جیساکہ آپ کاروباری /دفتری کام کے لیے کمپیوٹر استعمال کرتے ہیں تو اس کا کیا فائدہ ہو تا ہے؟ درج کریں:--- ---------- ---_

_____

Q8.آپ کے کاروبار/ادارہ میں کل کتنے کمپیوٹر استعمال ہوتے ہیں؟

ایک [1] **(Q9پر جائیں)** دو سے پانچ [2] **(Q11پر جائیں)**
پانچ سے زائد [3] **(Q11پر جائیں)**

Q9. اگر ایک کمپیوٹر استعمال ہو تا ہے تو کیا آ پ ان کی تعداد بڑھانے کا سوچ رہے ہیں؟

ہاں [1] **(Q11پر جائیں)** نہیں [2] **(Q10پر جائیں)**

Q10. اگر نہیں تو کیوں نہیں؟

بہت قیمتی ہے [1] ٹریننگ کی کمی ہے [2]
کاروباری امور میں ایک سے زائدکی ضرورت نہیں [3]

(سب سے پوچھیں)

Q11.آپ کمپیوٹر کا استعمال زیادہ تر کس مقصد کےلیے کرتے ہیں؟

تمام دفتری کام کمپیوٹر پر ہوتا ہے [1]
صرف دفتری – میل چیک کرنے کےلیے [2]
کیشئر کی سہولت استعمال کرنے کیلئے [3]
دیگر (تحریر کریں):------ ----------

Q12.پچھلے12 ماہ میں آپ کے ادارے کے کتنے ملازمین نے کام کے دوران عموماً کمپیوٹر استعمال کیا ؟

ایک [1] دو سے پانچ [2] پانچ سے زائد [3]
پتہ نہیں [4]

Q13.
کیا آپ اپنے سٹاف کو کمپیوٹر استعمال کرنے کی ٹریننگ فراہم کرتے ہیں؟ **(چاہے خود یا کسی اور کے ذریعے)**

ہاں [1] نہیں [2]

سیکشن 3 انٹرنیٹ کا استعمال

Q14.پچھلے 12 ماہ میں آپ نے اپنے دفتری کام کے سلسلے میں انٹرنیٹ استعمال کیا؟

ہاں [1] **(Q15پوچھیں)** نہیں [2] **(Q18پر جائیں)**

Q15. اگردفتر میں انٹرنیٹ استعمال کیا تو کیا گھر پر بھی انٹرنیٹ استعمال کرتے ہیں؟

ہاں [1] نہیں [2]

Q16. پچھلے 12 ماہ میں آپ کے کاروبار میں انٹرنیٹ کا استعمال کن کن مقاصد کے لیے ہوا ہے؟ **(ایک سے زائد جواب ممکن ہیں)**

ای میل بھیجنے یا حاصل کرنے کےلیے 1

مال /سہولیات کے بارے میں معلومات حاصل کرنے کےلیے 2

حکومتی ایجنسیوں کے بارے میں معلومات حاصل کرنے کے لیے 3

ریسرچ کے مقصد کےلیے 4

انٹرنیٹ پر بینکینگ یا دیگر سہولیات حاصل کرنے کےلیے 5

حکومتی ایجنسیوں کے ساتھ معاملات کے لیے 6

صارفین کو سہولت دینے کے لیے 7

اپنا مال آن لائن بھیجنے کےلیے 8

مال یا سہولیات کے آرڈر دینے کےلیے 9

مال یا سہولیات کے آرڈر لینے کےلیے 10

دیگر(تحریرکریں):_________ ____________________

Q17.پچھلے 12 ماہ میں آپ کے ادارے کے کتنے فیصد ملازمین نے کام کے دوران عموماً انٹرنیٹ استعمال کیا؟

25 فیصد سے کم 1 25سے50فیصد 2

50 سے 75فیصد 3 75سے100فیصد 4

(Q18 سے Q20 تب پوچھیں اگر Q14 میں کوڈ 2جواب دیا ہو)

Q18. آپ انٹرنیٹ استعمال نہیں کر رہے اگر آپ انٹرنیٹ استعمال کریں تو اسکی زیادہ سے زیادہ ماہانہ کیا خرچہ دینے کو تیار ہیں ؟

500 تک 1 501 سے 1000 2

1001سے1500 3 1500 سے زائد 4

Q19. جیسا کہاآپ انٹرنیٹ استعمال نہیں کر تے تو یہ بتائیں کہ اگر کاروبار میں انٹرنیٹ استعمال کر تے تو اس کا فائدہ ہوتا؟

ہاں 1 نہیں 2

Q20. جیسا کہ آپ ابھی انٹرنیٹ استعمال نہیں کر تے تو کیا آپ مستقبل میں اپنے کاروبار میں انٹرنیٹ استعمال کرنے کا ارادہ رکھتے ہیں؟

ہاں 1 نہیں 2

(سب سے پوچھیں)

Q21.اس مہینے کی پہلی تاریخ کے حوالے سے بتائیں کہ کیا آپ کا کاروبار انٹرنیٹ پر موجود تھا؟ (مثلاً: **ویب سائٹ یافیس بک پیج کے ذریعے**)

ہاں 1 **(Q23پر جائیں)** نہیں 2 **(Q22پر جائیں)**

پتہ نہیں 3 **(Q23پر جائیں)**

Q22. اگر آپ کا کاروبار انٹرنیٹ پر کسی بھی ذریعے سے موجو د نہیں ہے تو یہ بتائیں کہ آپ مستقبل قریب میں ایسا کرنے کا ارادہ رکھتے ہیں؟

Q23. پچھلے 12 ماہ کے دوران آپ نے اپنے کاروبار کیلئےانٹرنیٹ کن ذرائع سے استعمال کیا ہے ؟

Dialup 1 **(Q24پر جائیں)** DSL 2

Wireless/Local Loop جیسا کہ VPTCL 3

GPRS جیساکہ موبائل پر انٹرنیٹ استعمال کرنا 4

Cable Net (کیبل نیٹ) 5 Wimax جیساکہ وطین Wimax

PTCL Evo 6 7

دیگر (تحریر کریں):____-----ŏŏ____________________

(اگر Q23میں کوڈ 1 Dialupبتایا ہو تو پوچھیں)

Q24. اگر آپ Dialup انٹرنیٹ استعمال کر تے ہیں تو کیا آپ اس سے زیادہ تیز رفتار انٹرنیٹ مثلاً Broadband استعمال کرنے کا ارادہ رکھتے ہیں؟

ہاں 1 **(Q26پر جائیں)** نہیں 2 **(Q25پر جائیں)**

Q25. اگر ارادہ نہیں رکھتے تو کیوں نہیں؟

بہت قیمتی ہے 1 علاقہ میں ایسی سروس میسر نہیں 2

کاروباری امور میں ضرورت نہیں 3

(سب سے پوچھیں)

Q26.گذشتہ 12 ماہ کے حوالے سے بتائیں کہ کیا آپ نے اپنی جاب /کاروبار کے دوران کمپیوٹر استعمال کیا؟

ہاں 1 نہیں 2 معلوم نہیں 3

سیکشن 4 : انٹرانیٹ /LAN / ایکسٹر ا نیٹ کا استعمال

.

Q27اس مہینے کی پہلی تاریخ کے حوالے سے بتائیے کہ آپ کا کاروبار اس تاریخ میں انٹرانیٹ استعمال کر رہا تھا؟

ہاں 1 **(Q29پر جائیں)** نہیں 2 **(Q28پوچھیں)**

پتہ نہیں 3

Q28. جیسا کہ آپ نے بتایا آپ انٹرا نیٹ نہیں استعمال کر رہے تو یہ بتائیں کہ اگر آپ کے ادارے کے سارے کمپیوٹر کسی نیٹ ورک کے ذریعے منسلک ہو تے تو کیا اس کا کوئی فائدہ ہو تا؟

ہاں 1 نہیں 2 پتہ نہیں 3

Q29.اس مہینے کی پہلی تاریخ کے حوالے سے بتائیں کہ کیا آپکا کاروبار لوکل ایریا نیٹ ورکنگ **(LAN)** استعمال کر رہا تھا ؟

ہاں 1 نہیں 2

Q30.اس مہینے کی پہلی تاریخ کے حوالے سے بتائیں کہ کیا آپ کا کا روبار **(ایکسٹرانیٹ)** استعمال کر رہا تھا ؟

ہاں 1 نہیں 2 پتہ نہیں 3

سیکشن 5 : ٹیلی فون کا استعمال

Q31.کیا آپ کا ادارہ اپنے کام میں مستقل ٹیلی فون لائن کا استعمال کر تا ہے؟

ہاں 1 **(Q32پر جائیں)** نہیں 2 **(Q33،اورQ34 پر جائیں)**

معلوم نہیں 3

Q32. اگر ہاں تو کتنی ٹیلی فون لائن استعمال کر تے ہیں؟

تعداد درج کریں:--_____-----

Q33. اگر نہیں استعمال کر تے تو مستقبل قریب میں استعمال کرنے کا ارادہ رکھتے ہیں؟

ہاں [1] نہیں [2]

Q34. ٹیلی فون لائن کے ماہانہ اخراجات زیادہ سے زیادہ کتنے ہوں تو آپ ٹیلی فون لائن استعمال کرنے پر آمادہ ہو جائیں گے؟

500تک [1] 501سے 1000 [2]

1001سے1500 [3] 1500 سے زائد [4]

سیکشن 6 : پیسوں کی ترسیل

Q35.مندرجہ ذیل میں سے ہر عبارت کے بارے میں بتائیں کہ آپ اس کے لیے پیسوں کی ترسیل کا کونسا طریقہ استعمال کر تے ہیں؟**(ایک سے زائد جواب ممکن ہیں)**

	(ہر ایک کےلیے علیحدہ علیحدہ پوچھیں) 1-4	بینک اکاونٹ کے ذریعے	بیٹی کے ذریعے	موبائل منی ٹرانسفر کے ذریعے	پوسٹ آفس منی ٹرانسفر کے ذریعے
1	فروخت کیے گئے مال کی قیمت وصول کرنا	1	1	1	1
2	یوٹیلٹی بل ادا کرنا	2	2	2	2
3	خریدے گئے مال کی قیمت ادا کرنا	3	3	3	3
4	دیگر اخراجات	4	4	4	4

Q36.کیا گذشتہ 5 سالوں میں نئی ٹیکنالوجی اور کمپیوٹرز کے استعمال سے آپ کا کام کچھ دلچسپ ہو گیا ہے ، کم دلچسپ ہو گیا ، یا کوئی فرق نہیں پڑا؟

کچھ دلچسپ [1] کم دلچسپ [2]

ویسا ہی رہا [3] جواب دینے سے انکار [4]

پتہ نہیں [5]

Q37.کیا آپ نے کبھی الیکٹرونک بینکنگ کے حوالے سے انٹر نیٹ استعمال کیا ہے؟

ہاں [1] نہیں [2] پتہ نہیں [3]

ضروری معلومات

D1.جوابدہندہ کی جنس؟ مرد [1] عورت [2]

D2.کاروبار کی قسم **(سیکٹر)**

مینوفیکچرنگ(کوئی چیز بنانے کی فیکڑی / کارخانہ)جس میں زرعی کاروبار اور کان کنی بھی شامل ہیں۔ [1]

تجارت [2]

خدمات فراہم کرنے والی صنعت **(جن میں بجلی، تعمیرات، مواصلات اور فنانس کے حوالے سے**

D3. آپ کا ادارہ کس قسم کے کام سے منسلک ہے؟

کھانے کا [1] ٹیکسٹائل [2] چمڑا [3]

کاغذ [5] پیٹرولیم [6]

کیمیکل [7] پلاسٹک/ربڑ [8]

مشنری [9] الیکٹرونکس [10] آلات [11]

رٹیل [13] ہول سیل [14] آئی ٹی [15]

ہوٹل [16] دیگر تحریر کریں _____

D4.جوابدہندہ کا ادارے میں عہدہ:

کاروبار کے مالک [1]

چیف ایگزیکٹیو آفیسر (CEO) [2]

چیف فائنینشل آفیسر(CFO) [3]

سیلز اور مارکیٹنگ کے چیف [4]

کسی کاروبار کے منیجر [5]

کسی ڈویژن یا ڈیپارٹمنٹ کے منیجر [6]

بورڈ آف ڈائریکٹرز کے رُکن [7]

دیگرتحریر کریں:_____

جواب دینے سے انکار [9] معلوم نہیں [10]

D5.یاد کر کے بتائیں کہ پچھلے سال آپ کے کاروبار کی آمدن کتنی تھی ؟

آمدن تحریر کریں**(روپوں میں)**:__ _____

معلوم نہیں [99] جواب دینے سے انکا ر [98]

جوابدہندہ کا نام :_____

مکمل پتہ:_____

موبائل فون نمبر :_____ _____ _

وقت اختتام انٹرویو :_____بجکر _____منٹ_____

تاریخ :_____ _____

انٹرویور کےلیئے

(درج ذیل معلومات اگلا انٹرویو شروع کرنے سے پہلے مکمل کریں!)

D19. مندرجہ ذیل میں سے کون سی عبارت آپ کے خیال میں جوابدہندہ کی سوالنامے کو سمجھنے میں آسانی یا مشکل کی عکاسی کرتی ہے؟

جوابدہندہ کو پورے سوالنامے میں کو ئی خاص دشواری نہیں ہو ئی [1]

جوابدہندہ زیادہ تر سوالات آسانی سے سمجھ گیا [2]

جوابدہندہ کچھ سوالات آسانی سے سمجھ پایا [3]

جوابدہندہ کو تقریباً پورے سوالنامے کو سمجھنے میں دشواری ہو ئی [4]

D20. یہ سوالنامہ کتنی کوششوں میں مکمل ہوا ؟

پہلی [1] دوسری [2] تیسری [3]

میں تصدیق کرتا ہوں کہ میں نے یہ سوالنامہ گیلپ کی طرف سے ملنے والی ہدایات کے مطابق مکمل کیاہے

انٹرویور کانام _____

دستخط _____

انٹرویو ر کی جنس: مرد 1 عورت

2

انٹرویور کی مادری زبان _____

سپر وائزر کےلیئے

D22. انٹرویور کو چیک کیا گیا ؟

ہاں 1 نہیں 2

D23. چیک کرنے کے لئے کونسا طریقہ اختیار کیا گیا؟

انٹرویو کے دوران چیکنگ (براہ راست نگرانی) 1

انٹرویو کے بعد سپروائزر کی جوابدہندہ سے ملاقات 2

انٹرویو کے بعد سپروائزر کا سنٹرل آفس کی جوابدہندہ سےفون کے ذریعے چیکنگ 3

چیکنگ نہیں کی 4

D24. نتیجہ تصدیق_____

نام سپر وائزر :_____

D25. نام فیلڈ ایڈیٹر (نام آرسی صاحبان):_____

دستخط فیلڈ ایڈیٹر :_____

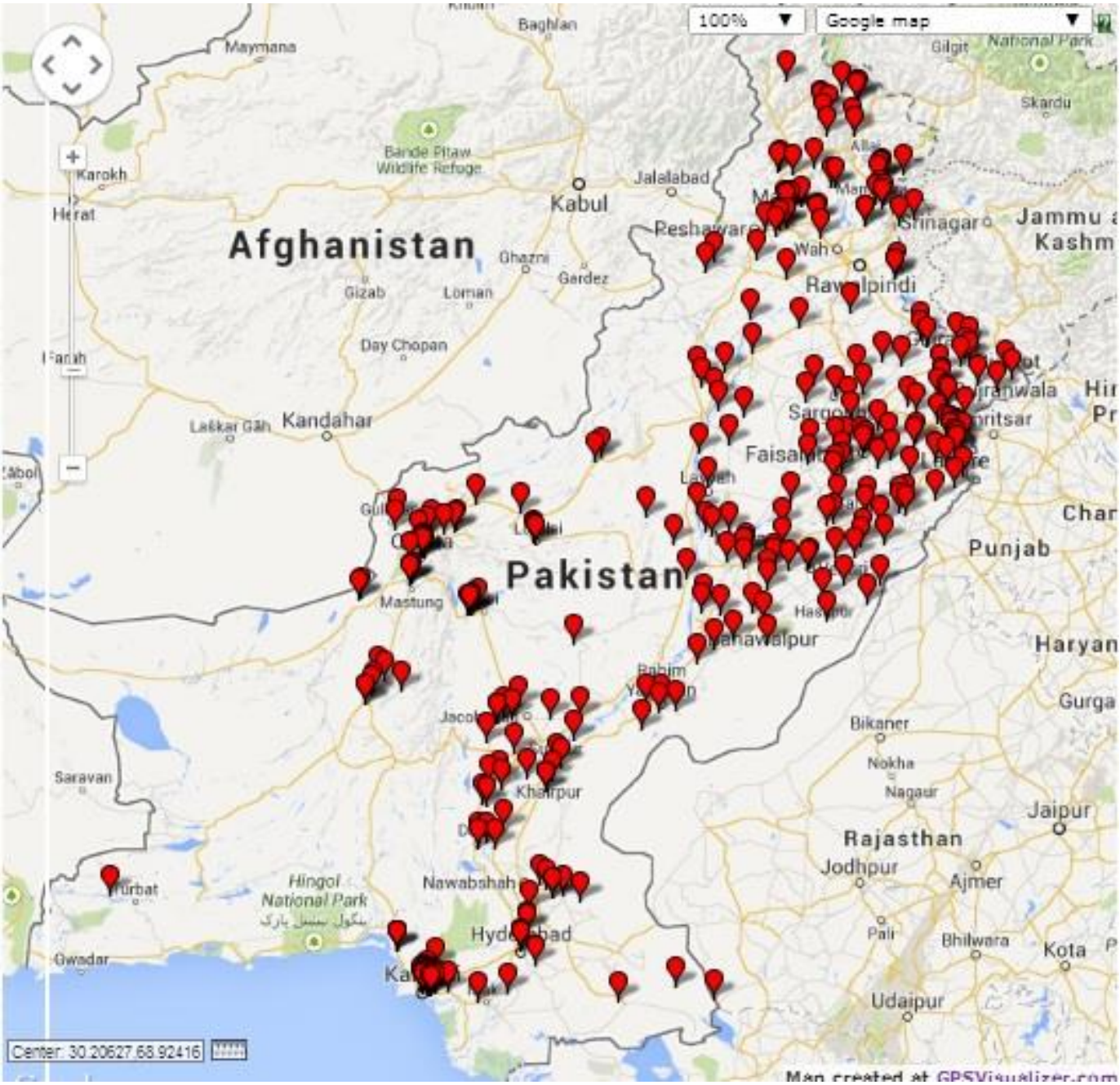
D26. انٹری کرنے والے کا کوڈ_____

D27. کوڈنگ کرنے والے کا کوڈ:_____

PAKISTAN ICT INDIATORS SURVEY, 2014

(Map of Survey Locations)

Pakistan ICT Indicators Survey – 2014
Household Survey of 3000 Respondents
Locations Surveyed – **GPS Tagged**



BIBLOGRAPHY

BIBLIOGRAPHY

Annual Report 2011: *Pakistan Telecommunication Authority*
Link: http://www.pta.gov.pk/annual-reports/pta_ann_rep_11.pdf

Bilbao-Osorio, Beñat, Soumitra Dutta, and Bruno Lanvin. *The Global Information Technology Report* 2013. *Rep. Geneva: World Economic Forum and INSEAD,* 2013. Print.

C.F. Turner and E. Martin, DeMaio, T.J. (1984). Social desirability and survey measurement: a review. In Surveying Subjective Phenomena, , eds. New York: Russell Sage, pp. 257ñ282.

Contributed by the Federal Communications Commission (FCC) of the United States, 2012. *http://www.broadband.gov/plan/*

Core ICT Indicators. Rep. N.p.: *United Nations Statistics Division*, 2007. Print.

Cruickshank, J. 2012. **Telehealth: What Can the NHS Learn from Experience at the US Veterans Health Administration? London**: 2020 health.org. Available at *http://www.2020health. org/2020health/Publication-2012/publications-2012/Telehealth. html.*

Curtis, S.L. (1995). Assessment of the Data Quality of Data Used for Direct Estimation of Infant and Child Mortality in DHS-II Surveys. Occasional Papers, No. 3. Calverton, Maryland: Macro International, Inc.

Czaja R., and J. Blair (1996). Designing Surveys: A Guide to Decisions and Procedures. Thousand Oaks, California: Pine Forge Press.

Daniel Kasprzyk, Mathematica Policy Research Washington, D.C Measurement Error In Household Surveys: Sources And Measurement.
Link: http://unstats.un.org/unsd/hhsurveys/pdf/chapter_9.pdf

D. Lynd (2007) The Education System in Pakistan:
Assessment of the National Education Census

Economic survey of Pakistan (2012)
Proportion of learners enrolled at the post-secondary level in ICT-related fields

Egypt ICT Indicators. *Egypt Indicators. Ministry of Communications and Information Technology,* 2011. Web.

Gallup International Social Media Study, 2013-14

Gallup-KPMG National Study on Critical Indicators of *Information Technology*, 2001

Gallup Pakistan (2013). Gallup Consumer Survey, 2013

Gantz, J. and D. Reinsel. 2011. **"Extracting Value from Chaos." IDC IVIEW,** June. Available at *http://www.emc.com/collateral/analyst reports/idc-extracting-value-from-chaos-ar.pdf*.

Gartner Group IT Glossary. "Big Data" definition: *http://www.gartner.com/it-glossary/big-data/*.

Global Tracking Framework: issued jointly by the *World Bank and the International Energy Agency*.

Bibliography

Link:http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/05/28/000112742_20130528084417/Rendered/INDEX/778890GTF0full0report.txt

KPMG (2013)
Investment in Pakistan, 2013

Mobile cellular subscriptions (per 100 people): *World Bank Development Indicators.*
Link: http://data.worldbank.org/indicator/IT.CEL.SETS.P2

National Center For Education Statistics : Measurement Error Studies at the National Center for Education Statistics.
Link: http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=97464

PASHA (2008)
IT Industry Report, 2008

Revisions And Additions To The Core List Of ICT Indicators: *United Nations Statistical Commission*, 2009. Print

Scott et al. 2005; *Chaudry et al.* 2006; *Shekelle and Goldzweig* 2009; *OECD* 2010a.

S. Curtis and F. Arnold (1994). An Evaluation of the Pakistan DHS Survey Based on the Reinterview Survey. Occasional Papers, No. 1. Calverton, Maryland: Macro International, Inc.

United Nations, 2005. Household Sample Surveys in Developing and Transition Countries, Chapter IX
Link: https://unstats.un.org/unsd/hhsurveys/pdf/Household_surveys.pdf

USF (2010) Concept Paper Universal Telecenters (UTC) Project

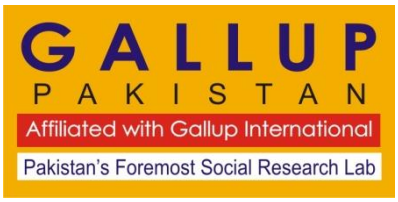
World Bank (2012) ICT Goods Import (% of total goods imports)

World Bank (2014)
Mobile cellular subscriptions (per 100 people)

World Bank (2014) Trading Economics, 2014.
International Internet bandwidth (bits per person) in Pakistan

World Bank (2014) Trading Economics, 2014.
Information and communication technology expenditure (% of GDP) in Pakistan

World Bank (2012) ICT Goods Exports (% of total goods imports)



Contact Details:

Islamabad: +92 51 2655630

Lahore: +92 42 35842419

Karachi: +92 21 4537569