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Feasibility of Community Radio for Educational and Grooming Purposes in Universities

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A thesis submitted to the
Department of Mechanical Engineering
in partial fulfillment of the requirements for the degree of
Master of Science in Engineering Management

Faculty of Engineering
Capital University of Science and Technology
Islamabad
June, 2017

DEDICATION

I have attained this achievement with the blessings of ALLAH Almighty. His countless blessings have bestowed me with this achievement. All are the prayers of my parents and I am successful today. I want to dedicate my work to my **Grand Parents**.

CAPITAL UNIVERSITY OF SCIENCE & TECHNOLOGY
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CERTIFICATE OF APPROVAL

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ACKNOWLEDGMENT

All praise to ALLAH Almighty, the most beneficent and the most merciful. Almighty ALLAH has blessed a man with intelligence, strength and courage. Believe on Him allows us to achieve every goal of life. He is best teacher and guider, knows everything in best manner. Without His grace and blessings I would not be able to fulfill this great thesis.

Secondly, I would like to thanks my supervisor Mr. Saad Ahmed for their utmost effort and precious time in completion of my thesis. I am thankful to my friends and other supportive teachers.

DECLARATION

I, hereby declare that this thesis neither as a whole nor as a part there of has been copied out from any source. It is further declared that I have developed this thesis and accompanied report entirely on the basis of our personal efforts made under the sincere guidance of my supervisor. No portion of the work presented in this report has been submitted in support of any other degree of qualification of this or other university or Institute of learning, if found I shall stand responsible.

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ABSTRACT

The present study aims to find student's perception and decision about the acceptance or rejection of Community Radio-Interactive Radio Instruction (CR-IRI) in universities of Pakistan. Main variable is defined to check the feasibility of CR-IRI in universities. Certain other variables affecting the student's intention to adopt or not to adopt CR-IRI as learning, teaching, grooming and as a skills formation tool were also observed: besides their relationship with the demographic variables like gender, age, qualification. A model was constructed through which hypothesis were developed. Data was gathered through survey questionnaire and SPSS was used to analyze. It was found that efficiency, accessibility, usability, adoption of CR-IRI as most interactive communication tool and lifelong learning were major governing factors towards feasibility of CR-IRI in universities. Age, gender and qualification were demographic variables that show secondary relationship with feasibility of CR-IRI. In the end suggestions were given along with the model for lifelong implementation and effectiveness of CR-IRI in other sectors of Pakistan.

TABLE OF CONTENTS

Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

CR   Community Radio

IRI   Interactive Radio Instruction

ICT   Information\ Interactive Communication Technology

CR-IRI   Community Radio- Interactive Radio Instruction

CM   Communication Medium

ICTAM   Information and Communication Technology Adoption Model

PEMRA   Pakistan Electronic Media Regulatory Authority

NBC   Nigeria Broadcasting Commission

NDMA   National Disaster Management Authority

CAI   Creative Associate International

COMPASS   Community Participation for Action in the Social Sector

AIOU   Alama Iqbal Open University

HEI   Higher Education Institute

EBP   Evidence- Based Practice

PSIPSE   Partnership to Strengthen Innovation and Practice in Secondary Education

DDA   Disability Discrimination Act

RRN   Radio Reading Network

SPSS   Statistical Package for Social Sciences

CHAPTER 1

INTRODUCTION

1. Overview

The present research is about the "Feasibility of Community Radio for Educational and Grooming Purposes in Universities". In relation to Community Radio (CR), the term 'community' refers to a collective or a group of people sharing common characters or interests. The main aim of community radio is to serves as a platform for exchange of ideas, knowledge transfer, and debates. People will be able to interact spiritually and physiologically with external environment and their surroundings. One may ask that why we haven't focused on other media communication system. There are many reasons for not doing so, few of which as follows. Radio is the most easily accessible mass medium of communication in use. Radio applications can easily be operated on each mobile phone in Pakistan. After studying past research in other countries community radio had provide a platform for interaction and awareness.

Adoption and feasibility of Interactive Radio Instruction (IRI) as a communication tool explains that how people act towards acceptance and rejection of a specific system. It is the combination of people's opinion, believes and their attitudes towards mean of communication. An important discussion here is about the technology that is selected to promote education. Community Radio adoption mainly focuses on the services provided to youth for educational and recreational purposes in universities of Pakistan.

This present research is related to Engineering Management. Radio is a technology. Its development of booth, frequency adjustments, arrangement of broadcasting setup is related to Engineering part. Feasibility, accessibility, usability of CR-IRI shows its relatedness with

Management point of view. The software SPSS which is used for data analysis and how to do research these were studied in Research Methodology course. In this research, our aim is to check the feasibility of community radio either it is used as a communication tool or not, and to find the potential application of community radio in universities of Pakistan.

1.1 Purpose of Research

In this new era where latest technologies are capturing the market and ruling the world, it's the duty of radio broadcast managers to create a trustworthy and reliable relationship with old and new regular listeners by bringing new ideas, act upon people demands, and work on; what the public wants to listen.

To upgrade the radio broadcast system, not only 'who will manage?' term is acted upon but also 'how will manage?' term got great attention. Multi-skilled employees are supervised by broadcast managers. This working has helped a lot in gathering the responsive and demanding listeners.

In spite of changing technologies there is still a great demand of radio broadcast. Technologies keep on changing to fulfill the purpose of radio. Community Radio serves as the cheapest source of information and communication. Young generations are taking radio set as a suffering, as they have TV's, multimedia phones and internet in their bedrooms. According to the old radio broadcast management model, there was one station for the whole area with limited transmission. But according to **"new management system"** even smart phones has the application of radio as well with multiple channels working at different frequencies. Students will get a platform to get review on lectures that were already delivered in class. Teachers will also get engaged, they have limited time in educational Institutes to provide extra guidance

regarding related topics. There will be a communication tool named "community radio" on which lectures times will be adjusted and each teacher will have access to broadcast their lectures in the assigned time slats.

1.2 Applications of Research

This research had a wide perspective regarding the right adoption of communication technology. Speaking to a Social Market Foundation seminar on Digital Radio in **September 2004,** the Chief Executive: **Stephen Carter** said;

> *"Ask many people how many radios they possess and often the first answer is 'two: one in the kitchen, the other in the bedroom.' If you ask them to think again the typical reply is 'Oh, well there are the car radios of course... and the one in the alarm clock... and the one in the Hi-fi, and in the bathroom and then there's the kids' ones;'. Does listening to it on the Internet count, or via the TV... or on the mobile? Nobody knows exactly how many radios there are in this country. For the industry and the public, that's a good thing; though it does have implications for the move towards a fully digital world in radio."*

Services provided by mass media communication companies in Pakistan are increasing day by day due to their high demand. Hence, research is based on the application and feasibility of community radio for educational purposes and also for the training of youth in other prospective of life like depression, anxiety, stress level, drug avoidance, carrier building, mental grooming etc. in Pakistan at universities level; so one can know the real purpose of their lives.

Another extended application of this research was the Interactive Communication Technology or Information Communication Technology (ICT) adoption [1] . It was considered as a tool to analyze that either community radio was acceptable by youth for educational and learning

purposes or not. Either CR-IRI is effectively and efficiently applicable in Pakistani universities or not. It would, to some extent, portrait a picture about feasibility of CR as a communication medium and helps the youth to utilize their capabilities in right direction.

1.3 Approach of Research

Chapter 2 contains literature review. In it the past case up-to 2016, regarding application and uses of community radio has been discussed. Draw backs and limitations has also mentioned. The major focus was on the use ability of community radio for different purposes in other countries all over the world surveyed by previous or other researchers to promote and implement the purpose and support of CR as a Communication Medium (CM) all over the world. By doing so, we got an idea that what were the already highlighted purposes for the adoption of CR as CM. It was not necessary that all these factors will be same for Pakistan as well. In order to determine that we had to see the efficiency, effectiveness and applications of CR adoption specifically for Pakistan and how students of universities acted towards this technology?

Chapter 3 contains description about research and research methodologies. It is about the formation of communication model of modernization named as "Information and Communication Technology Adoption Model (ICTAM)" and its acceptance model for the adoption of community radio in universities. Hypothesis deduced. Questionnaire designed and different statistical tools applied on sampled data.

Chapter 4 is based on analysis and results.

Chapter 5 consists of final conclusion, future recommendations and suggestion highlighted in this chapter.

1.4 Chapter Summary

This chapter had an overall introduction of research. Brief outline of (CR) is discussed. Detailed explanation about CR is included in Chapter 2. Purpose of research is also highlighted in this chapter.

CHAPTER 2

LITERATURE REVIEW

2. Community

Regarding community people gave multiple answers. Some said it is a cultural group where the people with same culture live together, some says it is a political entity and according to few it is a geographical entity. All these answers seem to be correct. But according to Philosopher John Dewey; *"Community is something that is developed through communication, through discussions, sharing cultural values, respecting religious believers and gathered to face challenges"* [2] . In our modern world, communication devices are more advance like internet, TV, smart phones etc. In front of all these remarkable achievements community radio is very small, irrelevant for the fast moving technologies and useless for huge projects working for globalization. That is actually not true.

Our globe is divided into many communities depending upon their communication. While utilizing technologies like watching TV or listening radio, make us a rehearsed knowledge consumer. People avoid face-to-face communication most of the times because of busy life, tight working schedule and long distances. For this purpose community radio is a central medium for delivering your voice to the concern people. Stronger the communication stronger will be the community and strongest will be the nation [2] [3].

2.1 Community Radio

Community radio is a vital role playing medium for communication. Geographical area is covered by it over which radio signals can be heard. However, problems are faced to develop so many community radio stations. People feel its need when they are living in such areas or

communities where there voice of freedom, voice of survival, voice of problems, voice of poorness and imbalance in power within community cannot reach to the government or responsible persons.

It provides access to the public forum to raise their voices for survival. It is a platform for those common people whose voices were left unheard because of communication gap [2].

According to one research there are more than **20,000 radio stations** are working in the world [3]. Since last two decades number of community radio stations increased very rapidly. The reason behind is that most of the countries are adopting democratic and decentralized culture. Community radio has played a very vital role in the development of many countries. Focusing on policies, for the development of communities it is necessary to promote local media, at least promoted at grass-root level. In this context community radio must get importance among the audience [3].

2.2 Radio Industry in Pakistan

Radio industry is divided into many different sectors like commercial radio like (Radio Pakistan), community radio includes Hospitals, Students educational FM stations, Traffic stations, Cultural stations, Hourly news stations, Music RJ stations, national and international wide range working radio firms [4]. These all firms are authorized and licensed by (Pakistan Electronic Media Regulatory Authority) PEMRA. **General Pervez Musharraf** had developed PEMRA in his government according to the Ordinance act of **1st March 2002**. The regulations of FM radio broadcasting companies are certified by Government Regulatory Authority of Pakistan. PEMRA is created according to the constitution running in Pakistan [5].

2.2.1 PERMA Standards for FM Radio

Radio management is done by obeying some rules and regulations.

Scope

FM radio firms facilitate broadcast system all over Pakistan with their allocated frequencies and transmitting regions.

Licenses are valid for **10 years** from the day of registry till the end day of year. Annually license should be renewed by depositing the fee. The license issuing process is completely dependent of **Bidding Method** [6]. The company with highest bidder rate is licensed. Assigned frequencies range from **88 MHz** to **108 MHz** which could easily cover up to **50km** [6].

2.2.2 Parameters of Community Radio

Few parameters about community radio are discussed below; [3]

Accessibility

Community radios provide access to public ideas, knowledge, problems, media etc. Provide a platform for those groups or individuals who do not have access previously. Purpose is to give voice to voiceless. For those people whose voices are not heard on other forums.

Audience Participation

Community radio encourages participants belonging to any geographical region. They are free to discuss and share ideas. Local people who want to promote community radios are also appreciated.

Non-Profit Organization

Community radio organization can be used for free of cost. But they get financial support from business venders, commercialization and fund raised by the government. Local people who voluntarily work for it also pay donations.

Community Radio owned by Community

Concept of community radio started with an idea that to run community radio stations, community of that area itself work for it. They have to take a complete charge of the working, maintenance, accessibility, obeying rules and regulations

2.2.3 Functions of Community Radio

Few important functions of CR are as follows; [3]

Community Radio as a Representative

Community Radio is identification for that particular community. It promotes local area's characters, cultures, languages, behaviors, mind sets, issues and much more. It gives knowledge about people that how they talk, think, and act upon for their past, present and future [6].

Openness to Participation

Community radio does on air the diversity of thoughts, voices and opinions for all sectors. Although it is not so easy because people have ethnic, religious, geographical and linguistic differences which causes harsh reactions and conflicts during transmissions.

Community Radio with Diversity of Content

Community radio pays great attention on the content selected for on-air transmission. Culture is the language for common people. There are **6700** languages all over the world. CR provides shelter for the diversity of cultures. Content selected should not be controversial or negatively targeted to any community.

Encourage Cognitive Conflicts and Democratic Process

Positive conflicts are encouraged. Conflicts play vital role in bringing new ideas, innovations and provide solutions to many problems. Democracy is spreading widely over the world. To promote it community radio is very efficient.

Brings Development and social changes

Community radio actively participates in the development of culture, social changes, victims, knowledge, rights etc [7].

- It provides access to all those people or groups who does not have the access before
- Self-expression opportunities are provided for communities
- It mobilizes the participants and informs them to focus on local or regional issues
- If community radio is compared to other type of commercial radios, its receiver end cost is higher
- People working in community radio stations are trained and skilled; their aim is to provide satisfactory transmission for the audience
- Different campaigns regarding health, culture, linguistic and social are conducted to promote these things

CR has played its wide range of contributions in the development of this world. Case studies are discussed below.

2.2.4 Uses of Community Radio

Worldwide community radios are playing their role for following purposes; [7]

- Education and livelihood development

- Source of information and communication

- Promotion of culture

- Source of entertainment and creativity

- Important tool for bringing social changes

- Help in development of poor's in rural areas

- Help in quick response to disasters, floods and earthquakes etc

- Shows good response for immediate broadcasting about climate changes

- Help to adopt alternative rout, when any road is block

- Plays vital role in political awareness

- Improve development process

- Source of Cultural harmony

To verify these usages of community radio working following case studies are describe below. It will help to strengthen the use of community radio and make the argument stronger.

2.3 Case Studies from Developing Countries

2.3.1 Community Radio "Serves To Resolve National Security Issues In West Africa: Nigeria".

Many African countries had already adopted community radio as a tool of voice. But in West Africa located country Nigeria; still lack behind. Due to increase in population and democratic environment in Nigeria, they started facing severe national security issues. Their existence was threatened as a united entity. Because of it Nigeria is facing huge crisis. The biggest problem of all was that the elite class and rulers of Nigeria were misusing the communication technologies for their own betterment. Peace of the country was completely destroyed. Crime rate, kidnapping, killing, murdering and robbery reached at its peak, people were very frustrated. No one heard their voices, their problems and their needs. Elite class remained busy in gathering resources for themselves. People strive to death, poverty and structural weakness of country all were the results of incompetent leadership [8].

"**Niger Delta Crises**" appeared after the civil war of **1967-1970**. Nigeria was categorized among **50 weak** states of the world. This was the biggest loss for the country. War started among Northern Nigeria (Muslim's majority area) and Southern Nigeria (Christian's majority area). Now country has to save them and fight for their survival. After lot of emphasize Community radio was selected as a medium to raise their voices and settlement of issues/conflicts. In starting Community radio faced lot of problems. Elite class has less interest in funding for community radio. They spend huge amount only for their publicity purposes. They tried a lot to manipulate and take control of community radio for their benefits, but did not succeed. People started working and funding voluntarily to promote community radio. Management programs and

committees were made. Many positives results were seen after using community radio as a tool for survival [9].

- **Food Security** programs started and many agricultural reforms were made [10] [11]

- One more focused problem was to remove conflicts and bring democracy, for this purpose **Conflict Management Strategies** were taught.

- Politicians and elite class **apologized** and taken an oath of serving the nation and work for the betterment of country [9]

 Nigeria Broadcasting Commission (NBC) was made to broadcast professionals like (scientists, politicians, teachers, entertainers) etc. [11] listeners had highly appreciated this effort. One of the aims of Community radio is to bring political awareness among people, so that they are able to know what was happening all over the world. Many radio stations developed for this purpose. Many political decisions for the betterment of community were on-aired. People gave their feedbacks and suggestions about those decisions. Democratic participation played very vital role. For this purpose theory demonstrated as; [12]
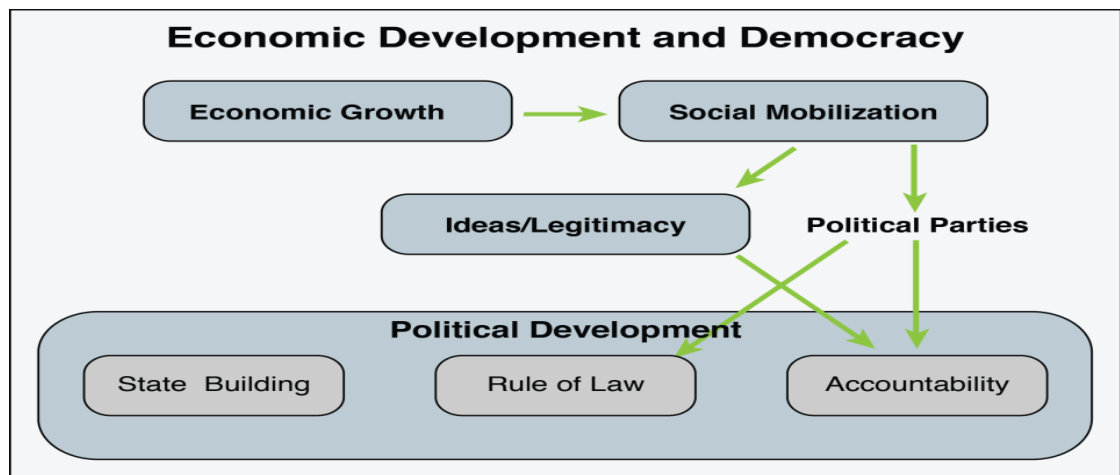
Figure 1 Economic Development and Democracy

2.3.2 Community Radio "Shows Good Response for Immediate Broadcasting about Climate Changes In Africa: Ghana".

There were **250 million** people living in Africa and **50%** of them were farmers by occupation. Climate play very vital role in their agriculture reforms. So, it is very important to have complete awareness regarding water pressure and climate changes. Africa was already moving through huge poverty crises [13]. In this situation climate changes completely destroy their fields and they face problems. Basic Problem was lack of communication. Many scientists had played their role to increase socio-ecological contact, but they fail to do so. Reason was lack of awareness. They found solution of this problem as "Community Radio". They started gathering funds for the development of community radio stations. They develop lots of radio stations in different small agricultural areas. Broadcast awareness programs. People got knowledge about three things via community radio broadcast are; [14]

- Develop understanding how to work in fields,

- Framing process of fields area and

- Climate changes [15]

Complexity got reduced. People became enough aware to safe their crops. At that year they received maximum yield of crops and poverty rate got reduced. Communication process started, people got attached with each other [16] [17].

2.3.3 Community Radio "As Exported Technology from U.S to East Africa: Tanzania and Rwandan".

These case studies describe the exporting process of technologies from U.S. and Europe to different states of East Africa. Two advanced projects were designed by U.S and Europe technologists to transfer knowledge.

- Oral Wiki [18]
- Community Radio Stations

Community Radio Stations

For the betterment of communication technologies project designed for Tanzania was **"Community radio stations"** and for Rwandan "Oral-wiki". But due to crisis both project stopped before complete implementation. But still the local community people did not lose hope. The main fault which was not controlled by technologist was **"Puzzling".** They started using these technologies for very massive areas, but these technologies were actually designed for local small communities. A **"Barn-raising group"** was started in Tanzania by the volunteers. Volunteers started audio recording process at "barn-rising" (Events that take part in building community radio stations). They emphasis on cooperate culture and interdependent communities. [19] [20]

2.3.4 Community Radio: "Used as a Weapon against Government Monopolies in Hashemite Kingdom of Jordan".

Amman, community media of Jordan was centralized only in this city. But **60%** of the Jordan's population was settled outside Amman (Capital of Jordan). Emergence of community radio in

Jordan was because of Government monopolies and one way stream of information. Multinational organizations raise funds (Financially and technically) to promote community radio in Jordan. Emergence of new technologies also played their role for the betterment of community radio.

An important law was made in Jordan named as **"Audio Visual Law"** [21]. This law was passed successfully and community radio got license to broadcast outside the capital as well as develop more community radios in neighboring cities. Huge audience appreciated this achievement and showed interest in this voice raising platform. Conflicts between government and community radio activists still exist. Amman community radio had **pay50% of license** fee to the government in order to broadcast news and political programs [22].

For the betterment of rural areas many programs started like (women rights, health, community related activities, culture) etc. This project of community radio had played their best effort to work for the betterment of those desert living people.

In **Feb 2014** community radio showed impressive boost in communication**. 100** above community radio stations activists seated and planned for the further betterment of community radio. Shared new ideas, thoughts and rising question, how to promote community radio in Jordan? Middle East and South Africa has faced great challenges as they were suffering from military illegal attacks of power. Government was in support of those military actions. In order to protect the survivor of people community radio had participated very actively and efficiently.

Swedish Government had supported a badge of **7 countries** that were, **Tunisia, Jordan, Yemen, Libya, Palestine, Egypt and Syria** in order to promote **internet based radio systems** [23].

2.3.5 Community Radio "Served Against the Poverty Crisis in Federal Democratic Republic: Ethiopia."

According to estimate, population of Ethiopia is **73.75 million**. Out of which **83.91%** people live in countryside areas. They were farmers by occupation and poverty ruled over them. Country was under **huge poverty crisis** like hunger, diseases, lack of food, lack of drinking water, lack of income, backwardness etc.

In order to get rid of those problems government of Ethiopia has decided to start a systematic communication channel which includes doctors, journals and agricultural gurus to guide the people and develop awareness among them. Mass media started such as radios, televisions transmissions etc. Although radio receivers and radio sets were very cheap but still more than two-third of the population was not an active listener. Because they do not have enough money to buy radio sets.

Their first aim was to bring harmony and unite people at cultural and linguistic equalities. It helped them to understand each other and resolve poverty issues mutually. They adopted strategy of **"Open-Broadcasting"** [24]**.** According to this strategy listener's provided with good quality, effective, real and helpful news system. News from local community as well as regional community would broadcast. Basic broadcast topics were as follows;

- Children care
- Political
- Agricultural
- Cultural and religious
- Health

- Strategies for betterment of life

- Life documentaries etc

But after few years "**public services broadcasting department"** of Ethiopia started misusing it for propaganda of issue instead of any developmental talk. But Government changed their strategy and took sever actions against those people. Since last seven years many parts of country had set up their own small community stations which worked with devotion for the betterment of their country. There were **8** large community radio broadcasting stations in Ethiopia [24].

2.3.6 Community Radio "As a Source of Information and Communication in Islamic Republic Pakistan: Quetta".

In last **twelve to fifteen years** we have witnessed a rapid development of community radio in Pakistan. The reasons behind this progress were;

- Globalization Force

- Privatization

- Liberalization

- Rising Market Economy

Advertising companies mainly were the source of funding for promotion of community radio in Pakistan. Community radio had played his role as a disaster security alarm for most of the countries. Quetta city is a mass land of multi languages and multi cultures. Community radio supported to promote listeners interaction with environment. Play key role in social and economical changes. Help in development and betterment of Quetta city [25].

There were **106 FM** Radio stations working all over the country. Out of which **four** main radio stations were situated in Quetta. Mainly topics of broadcasting were related to; [25]

- Education

- Health

- Civil Hygiene

- Local Trades

- Commerce

2.3.7 Community Radio "Help in Quick Response to Disasters i.e. Land Sliding in Hunza: Attabad".

FM 93 of Hunza has played its role in Attabad lake emergency. On **4th January, 2010** there was huge landslide. Massive rocks had blocked the lake created a barrier in water flow. That result in rise of water level and the biggest threat to **Sixty-Five thousand people.** During this crucial time communication system was needed that would help them to inform people. At that time **FM-93** of Hunza (Baltit) had played its role in crisis situation **NDMA** (National Disaster Management Authority) [26] send many rescue teams on time and saved many lives.

That area was backward and cut-off part of Pakistan, they do not have any communication sources. But they were regular listeners of Radio. So, it became easy for the Government to help them in hour of need [26] .

2.4 Community Radio "As a Tool for Serving Education"

Community Radio is serving for the betterment of educational system all over the world. Especially in developing countries in which rate of learning, awareness and innovation is

increased since last few years. Media promote education and for this purpose many communication devices are designed. According to literature reviewed working of Community radio in different countries can be seen as follows; [27]

- In Mexico community radio is used for Staff training purposes.

- For Civics Education in Botswana it is effectively used and got excellent learning results

- It is a source of providing instructions for primary classes in Paraguay.

- Teaching mathematics to young children in Thailand.

2.4.1 Study Campaign: Tanzania

Tanzania is one of the educationally emerging countries. In **1970** two campaigns were launched at a time one was radio education campaign and other was 1oth independence anniversary. At that time people had a platform to get educated named as community radio. People started utilizing this medium and they started get awareness about the happenings around the world. Level of learning and demand of community radio got increases. Now a days, still community radio promoting such educational campaigns. Literacy rate was remarkably raised during last few years [28].

2.4.2 Study Campaign: Africa

In **Uganda** an educational campaign was started for the students living in village areas. They have limited access to new technologies. Community radio served its best to promote education in such areas.

Nakaseke community radio played an important role. They gathered teachers from private and government schools and asked them to start a program named as **"The Radio Quiz Competition"** [29]**.** It helped the students of rural areas to promote education, opened new paths

[30] of learning and making their performance better. This program got live on every **Sunday**. Broadcasting system was controlled by 3 schools with 2 teachers in each session.

Winning schools got prices after each session. **62 primary schools** were attached to this campaign in Uganda. This program motivated many people to take part in it. It helped teachers to evaluate their teaching skills. Listening and reading capabilities of students got improved. It was declared as a best learning program [29].

2.4.3 Study Campaign: Connemara, Ireland

Community Radio Station built on **1ˢᵗ July 1995,** with two radio frequencies (**Fm 87.8 & 106.1**), run for **10 hours per day**. 6 hours live broadcasting and 4 hours repeat telecast of programs. It is one of the smallest radio stations working for educational purpose in Ireland with audience of **12,500 people**. Management of the radio station was under control of volunteer small staff and sponsors.CRS is designed for certifying higher level English students. It is still working efficiently. Annual short story competition **2016** named **"The West Wind Blows"** was held there. Winners were rewarded as well. Daily programs timings were highlighted on official website. Audio mp3 and mp4 files were also available on website [30].

2.4.4 Study Campaign: Asia & Africa

In past research we examine one of the traditional technologies of distance education, radio, and present educational and community radio usage in Asia and Africa. A campaign of **Peace Education** was started to change the mind sets, create cultural, religious, ethical, linguistic and political harmony among the people belonging to different states.

Thomas (2001) states that: *"In many areas of the world, radio is still the only medium through which educators can reach a mass audience, simultaneously and at relatively low cost"* [31].

Radio presentations packaged with visual and print materials; interactive elements were organized via listening groups and tutorial classes as well as radio cassettes used to minimize scheduling problems. Many years of experience in Asia embraced and shared in Africa; and lessons were learned from these innovative social initiatives in the developed nations also [32].

2.4.5 Study Campaign: Ethiopia

Government was very stressed because there was a huge communication gap between rural and urban areas. They raised funds and develop many community radios and distributed free radio sets among people. Build importance of community radio in their minds and taught them that community radio was one of the fastest network of conveying their problems and sharing new ideas. Campaign of **"Radio-Schools"** was started in which all the illiterate young's were divided into many listeners and speakers groups. They were taught how to manage radio communities in their areas. Participation of leaders and people got increased [33].

2.5 Supportive Mechanism

Interactive radio instruction (IRI) was first developed in **1970s** by 'Nicaraguan Radio Mathematics' project [34]**.** In developing countries after almost **30 years**, Interactive radio instruction (IRI), methodology developed to turn a normally one-way technology into a tool for active learning in and outside the classroom, continues to be an attractive educational strategy. This methodology is spread in many educational fields like Health, Mathematics, English, Spanish, Science, environmental education, children grooming and adult basic education.

IRI is serving as a tool to improve the quality of education. It has created equity in both **formal** and **informal education**. IRI methodology is also different in that it requires that learners stop and react to questions and exercises through verbal response to radio characters, group work,

physical and intellectual activities while the program is on the air. With the help of it lesson becomes an immediate hands-on and experiential guide, for both teacher and student. It also encourages Interaction within the learning environment between teacher and learners. They work together to conduct short experiments, perform activities, and solve problems using local resources and creative situations and stories [35].

For example, this was an explanation of the use of Interactive Radio Instruction (IRI) in Nigeria from **2004** to **2009**. During this period, Creative Associate International (CAI) implemented **five year basic education** component of the **"Community Participation for Action in the Social Sector" (COMPASS) project**. Funded by USAID, **three states** (Lagos, Kano and Nasarawa) were covered by COMPASS. The overall purpose of the education activity was to improve the teaching of literacy and mathematics of approximately **700,000** people enrolled in **1,400** schools [36].

Many parents keep their girls out of school because of girl's supposed inability to learn and conversely, their importance in the family, often resulted in school dropout and early marriage. Furthermore, ensured consistent quality of teaching and learning remain a challenge. Most important challenge was teacher education [37].

Interactive radio instruction (IRI) programs can provide cost-effective solution for quality educational services, especially to communities in remote and hard-to-access areas. But like for any other education service, the service quality has to be high to ensure the knowledge transfer to students and teachers [38]. It was also important to integrate local radio stations in the program activities to build a local knowledge base and to maintain the local interest in the educational

service especially in places where there might not be a formally paid teacher or proper school buildings [39].

An interactive show with many diverse voices and political opinions sends the message that people can be united in a community even when they have different opinions [40].

Joseph Warungu, Director Content Strategy, African Media Initiative; former BBC Africa Editor said;

"Radio cuts across class and economic status. You don't have to be literate to engage in interaction on radio. On radio you can speak back. Voice-to-voice is the most human thing, using the most basic communication tool that humans have. It is a no-brainer: combine radio with a cell phone and it is a very personal communication – and at the same time this communication can make a difference in society" [41].

2.5.1 Study Campaign: Thailand

Interactive Radio Instruction (IRI) was first implemented in Thailand in **1980.**Other countries like Indonesia, Pakistan, Bangladesh, and Nepal upraise their own IRI projects in 1990s. IRI project was also implemented in Latin America. Regarding IRI on a daily basis **20-30-minute** direct teaching and learning exercises were provided via radio to the classroom. Work around definite learning objectives at particular levels of mathematics, science, health, and languages, these lessons were planned to improve the quality of classroom teaching and to act as a regular, structured support to poorly trained classroom teachers in under-resourced schools [37].

 According to this article, "Extensive research around the world has shown that many IRI projects have had a positive impact on learning outcomes and on educational equity. And

with its economies of scale, it has proven to be a cost-effective strategy relative to other interventions."

2.5.2 Study Campaign: Congo

"World Radio Day is about celebrating radio, why we love it and why we need it today more than ever. It's a day to remember the unique power of radio, to touch lives and bring people together across every corner of the globe." **UNESCO** [42]**.**

United Nation **(UN)** announced to celebrate **"World Radio Day"** on **13th February**. They started a campaign to develop places for children who were the victims of war at that time. Along with Government they tried to re-build educational infrastructure by repairing and re-opening schools. They offered child-focused and teachers training programs. War-Children were also facilitated with the supplement programs for their mental grooming and recovery. For this purpose they have used community radio as a helping tool. One more campaign named as **"School in a box"** was also started to promote education [42].

2.5.3 Study Campaign: Pakistan

IRI technique was also utilized by **Allama Iqbal Open University (AIOU**). To communicate with the students who live in rural areas. They have limited resources available to attend the university. It was found that majority of students accepted it, that they use AIOU radio for getting lectures. They also appreciated that programs were informative and supportive [43].

 In this paper, it was recommended that for educational purposes Radio Pakistan and AIOU may produce programs which have their strong links/roots in the surroundings of the rural people. Radio schools like Interactive Radio instruction (IRI) may be used for effective

teaching and learning process in rural areas. Time of educational programs should be improved [43] [44].

Off Campus Learning

The Government of Pakistan has approved the law and makes it mandatory for all **Higher Education Institutes (HEI)** to have their radio stations. [45] For serving the purpose of distance learning Virtual University (VU) provided radio broadcast facility as well as Nation University of Modern Languages (NUML) and Fatima Jinnah University for Women were also implementing CR as a learning tool.

2.5.4 Study Campaign: Nigeria

ESBE/IMT (Institute of Management and Technology) "poly-air program" was introduced for educational purposes. It was established **25 years ago**. It was efficiently utilized for educational purposes in Enugu. This program aimed to help non-regular students to improve their academic pursuits through a medium named as radio. With positive outcomes audience got control on the areas of comprehension, speaking abilities, perceptions and maintenance capabilities [46].

2.6 Community Radio: Still Afar Social Changing Tool in Pakistan

In such country where poverty, illiteracy, ignorance and unemployment were ruling; social change became a priority need of time. As we have discussed above that how community radio is playing its role to normalize different aspects of life. Community radio showed its maximum participation for the betterment [47].

In **1920's** there were few literate people who bought newspaper and read. With the passage of time as the literacy rate increased, methods of communication also get developed. But with the digitalization of communication systems, we had seen clearly the decline in use of community radio. The biggest threat for the decline is continuation and encouragement of local cultures.

Pakistan was facing **"Digital Divide"** as rural and urban, accessible and inaccessible, rich and poor, old and youth etc. Most of the people want such a system that could be enough powerful to remove such discriminations [46].

According to one survey there were **3000** community radio stations in **Thailand**, **100** above in **Indonesia** etc. Pakistan was still lacking behind to promote community radio. Radios working in Pakistan only based on entertainment and such programs that do not support the listeners to gain some productive knowledge. Develop a passive impact on listeners also weaken the liberty and variety of information.

Community radio in Pakistan, still face licensing issue. 100 of the radio station are still not licensed. Some of licenses were issued to few educational institutes. There were illegal operators which is the biggest challenge for PEMRA. In NWFP there were **100 illegally** used community radio, who illegally broadcast religious seminars which promote religious conflicts. These radio stations were installed in Masajids and Madaris [46] [47].

2.7 Educational Crisis in Pakistan

Pakistan is a developing country and pay great attention to promote education. Based on critical review of literature we have deduced that the old education system is not that much effective. Students do not have any effective source to revise their lectures as well as no efficient system for teachers to deliver a pre-delivered lecture again. Due to poor implementations of rules and

communication gap among teacher and students cannot allow a change to occur. An assessment criterion depends upon the memory of students rather than their performance [48].

2.8 Gap Identification

From all the past researches we have found a common gap which was that how we are able to save the survivor of CR in future? Because of arrival of new technologies, CR was left far behind. In Pakistan we unable to find efficient functioning of CR for educational and training purposes of youth. Very fewer researches occur, that how CR-IRI can be used at higher educational level. So, our research base to check the feasibility of CR for serving youth in universities.

2.9 Problem Statement

"Feasibility study for identifying potential application of Community Radio (CR) - IRI to promote education in Pakistani universities and to find its relationship with factors like demands, needs and accessibility"

2.10 Research Questions

Following are few highlighted questions which are the foundation of our research.

RQ1. Is there a feasibility of media communication technology "community radio" to be served for educational purposes in Pakistani universities?

RQ2. How can we identify the factors/elements that were helpful in serving and utilization of CR not only for educational purposes but also for grooming, training and carrier building purposes in universities?

RQ3. How effective it will be to use IRI as educational tool in universities?

RQ4. Can we examine critically the demands and needs of people whether they want to have CR-IRI as an educational tool or not?

2.11 Chapter Summary

This chapter includes Community Radio (CR) introduction, radio industry in Pakistan, parameters, functions and uses of CR to develop the understanding about the communication tool selected for research. Then the applications of CR have been studied to check that how it served in different aspects and especially for the betterment of educational systems. Furthermore gap is identified, problem statement is defined and on the basis of it research questions are developed.

CHAPTER 3

RESEARCH METHODOLOGY

In this chapter, methods were explained that were supporting for evaluation of results.

3. Research

Research is considered as an Evidence-Based Practice (EBP), it is based on our practice that how effectively and efficiently services are provided, how appropriately work is done and either the outcomes positive or negative. Research can be an important way to collect accurate, precise, reliable and sound information about the situation and condition [49].

3.1 Research Methodology

For our researches we use tools, techniques and procedures which were developed by research methodologists to define, develop, improve and advance quantifiable aspects of our practice. It is also considered as a systematic way to solve the research problem.

In research methodology we not only talk about the research methods, but also judge the logic behind those methods. We use methods in the context of our research study and explain why we are using a particular method or technique and why we are not using others [49].

3.1.1 Types of Methodologies

- **Qualitative Measures:** Descriptive, Numbers not the primary focus, interpretive, ethnographic, and naturalistic.

- **Quantitative Measures:** N for numbers, Statistical, Quantifiable.

3.1.1.1 Qualitative Measures

Qualitative research seeks to understand a given research problem or topic from the perspectives of the local population it involves. It is especially effective in obtaining culturally specific information about the values, opinions, behaviors, and social contexts of particular populations [50]. To strengthen our research work we have used Case Study Method which is considered as efficient way of qualitative measures.

Case Study Research Method

Case study method enables a researcher to closely examine the data within a specific context. In most cases, a case study method selects a small geographical area or a very limited number of individuals as the subjects of study. Case studies, in their true essence, explore and investigate contemporary real-life phenomenon through detailed contextual analysis of a limited number of events or conditions, and their relationships [51].

Definition

"It is as an empirical inquiry that investigate a modern phenomenon within its real-life context; when the boundaries between facts and environment are not clearly plain; and in which multiple sources of evidence are used [52]".

Case study method, through interviews or journal entries, must be able to prove that, [53]

- It is the only feasible method to obtain implicit and explicit data from the subjects.

- It is appropriate to the research question

- It follows the set of measures with proper application

- The scientific conventions used in social sciences are strictly followed

- Case studies are linked to theoretical frameworks.

By following all these points of case study method, we have taken the support of many case studies and deduced useful information which full fill the demand and requirement of our research objective. In literature review chapter we have discussed many case studies that how community radio is playing its role and how it can be used for different prospective. These case studies have also helped us to identify the gap for our research.

3.1.1.2 Quantitative Measures

Quantitative research methods are research methods dealing with numbers and anything that is measurable in a systematic way of investigation of phenomena and their relationships [50].
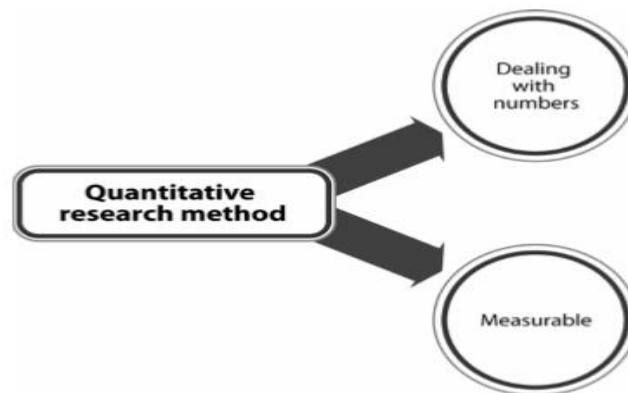
Figure 2 Quantitative Research Method [50]

This figure shows that Quantitative research method is categorized in to two sections. One is to deal with numbers and other is working on data that is measureable.

Theory used

Theory selected as a foundation of our hypothesis is **"Interactive/ Information Communication Technology (ICT) adoption".** In the field of ICT, quantitative methods often deal with results computation and system analysis using a scientific approach. The objective of the quantitative method is to develop and use model as well as theories related to the nature of an ICT phenomenon [54].

Interactive/ Information Communication Technology (ICT)

ICT is simultaneous or 'real time' exchange of information over a transmission medium (communication source) in order to deliver a message from one place to another [55]. It implies the technology that consists of electronic devices and associated human interactive materials that enable the user to employ them for a wide range of teaching- learning process in addition to personal use. The rapid growth in Information Communication and Technologies (ICT) have brought remarkable changes in the twenty-first century, as well as affected the demands of modern societies. ICT is becoming increasingly important in our daily lives and in our educational system. Therefore, there is a growing demand on educational institutions to use ICT to teach the skills and knowledge students need for the 21st century. Realizing the effect of ICT on the workplace and everyday life, today's educational institutions try to restructure their educational curriculum and classroom facilities, in order to bridge the existing technology gap in teaching and learning [56].

This theory is basically a communication model of modernization. Modernization here is concerned as a process of interactive technology where individuals moves from an old traditional way of life to a different, more technically developed and more rapidly and easily used way of life. [57]

$$Likelihood\ of\ Usage \propto \frac{Motivation}{Time+Effort}$$

Equation 1 Likelihood of Usage (1.1)

This equation shows that likelihood of usage is directly proportional with motivation i.e. higher will be the motivation greater will be the usage of CR-IRI as a tool of gaining required information. As well as usage has inverse relationship with time and effort , which means that if CR-IRI is proved to be a faster and easy source of learning, then number of users get increased.

Characteristics of ICT

ICT has following major characteristics [58]

- Speed

- Range

- Automatic

- Interactivity

- Capacity

3.2 Why ICT in Education?

In today's era due to rapidly growing rate of new technologies teachers consider the beneficial integration of ICT in classrooms.

ICT can be used as a tool for motivating students to learn in many different ways. It can be efficient and effective, also give learners an immediate access to source material. It can be dynamic and interactive source of information as well. [58] For research and to find results of the problem that is highlighted by us, we have chosen both qualitative and quantitative methods. On the basis of these methods we have develop our model, also defined variables of problem.
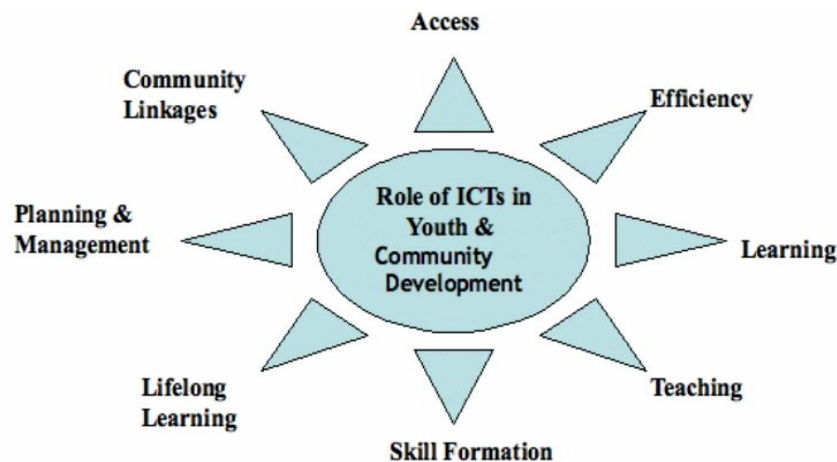
Figure 3 ICT Model for Educational Sector [59]

For research and to find results of the problem that is highlighted by us, we have chosen both qualitative and quantitative method. On the basis of these methods we have develop our model. Focusing on model of ICT we have also defined variables of problem.

3.3 Important Variables

In the light of above discussion we were ready to mention important variables to check the feasibility of Community Radio used for educational and learning purposes in universities of Pakistan.

1) Efficiency

- Faster

- Cheaper

- Fewer Steps

2) Most Interactive

3) Accessibility

4) Life Long Learning

- Skills Formation

5) Feasibility

6) Usability

7) Adoption

- Acceptance

Now we justify these variables and form our model for CR-IRI implementation.

3.4 Operationalization of Variables

Now we discuss the variables on the basis of which our hypothesis is developed.

3.4.1 Efficiency

It is a degree to which a person believes that adopting of information and communication system would be free of effort. According to past researches, the early adopters set an example for the others to follow suit, allowing development to trickle down to the rest of the society. The slow ones continue to lag behind and these represent a majority of the population in developing countries.

When studying the adoption of other communication systems in Pakistan we concluded that, the people living in Pakistan do not give importance to technological system of being easy to use. The source which was used for communication purposes does not matter for the society. In fact the external factors decide the truth of ease of use. Mostly studies have showed that, communication systems which are easier to use and less complicated are generally more adopted by users. It is proved from past studies and researchers that awareness and knowledge has a major and positive relationship with users' intentions to adopt communication systems such as community radio [60].

In our case, for training and grooming of youth we have described efficiency check of CR-IRI as an important variable. Purpose of defining this variable is to verify that according to youth whether CR is considered as faster and cheaper source of gaining awareness or not.

3.4.2 Accessibility, Social Influence & Lifelong learning

The persuasion step occurs when the individual has a positive or negative attitude towards the technology. Persuasion can be considered as a combination of social influence, attitudes, norms,

motives or behaviors, based on events, incidents, ideas and other persons. Technology that is easily accessible would have positive response towards lifelong learning.

Social influence is considered as an important element of acceptance and rejection of the communication technology which is associated with the term "image" with subjective norms. Accessibility of technology play very vital role by helping the individual user to believe that he or she will have a platform for knowledge and use another communication system from the inspiration or influence of family, friends and society. Besides society, mass media like news paper, social media, and electronic media is also capable of influencing the youth to adopt community radio as a tool of learning [60] [61].

 Consider the example of transmitter radio, when it was introduce in Pakistan few people bought radio sets but soon it get acquire by many people, more and more people bought radio sets for getting aware of happenings around them, and even many people not know the importance of this communication tool at that time. Social influence has developed their interest for using radio as a communication tool in Pakistan.

Perception and influence from important friends and social connections is critical finder for adopting community radio [61]. According to our area of research, it is consider very important to know either CR-IRI is accessible to the youth in their universities and if this facility will be provided to them, it will have lifelong learning and grooming impact or not.

3.4.3 Feasibility & Usability

Feasibility plays an important role to check the audience demand. If we consider planning & management part of ICT model then it is important to know that, what is the feasibility rate of our technology to be used and adopted by the youth? So we have defined two more variables to

check that how much is it feasible for the youth/ students to have CR-IRI in their universities and will be useable in productive manner.

3.4.4 Decision of Adoption

Individuals continue to search for evaluation information and messages through the decision stage. On which one has to make decision either to accept the new system or to reject the new system. If an innovation has a '**partial-trial basis'**, it is usually adopted more quickly, since most individuals first want to try system in their own situation and then come to an adoption decision [62].

Although this stage is one of the most critical for understanding technology and system adoption, but ones it is decided by the society to adopt or to reject is easier for trial and implementation. Personal innovativeness and appropriate decision making are among the important variables that influence the intension of people of Pakistan to decide what they actually want. Past studies support that personal decision making and evaluation has strong impact on awareness and perceived ease of use [62] [60]. This is our last defined variable, which clarify the audience demand, what they actually want to listen through their university radio stations.

3.5 Research Model with Hypothesis
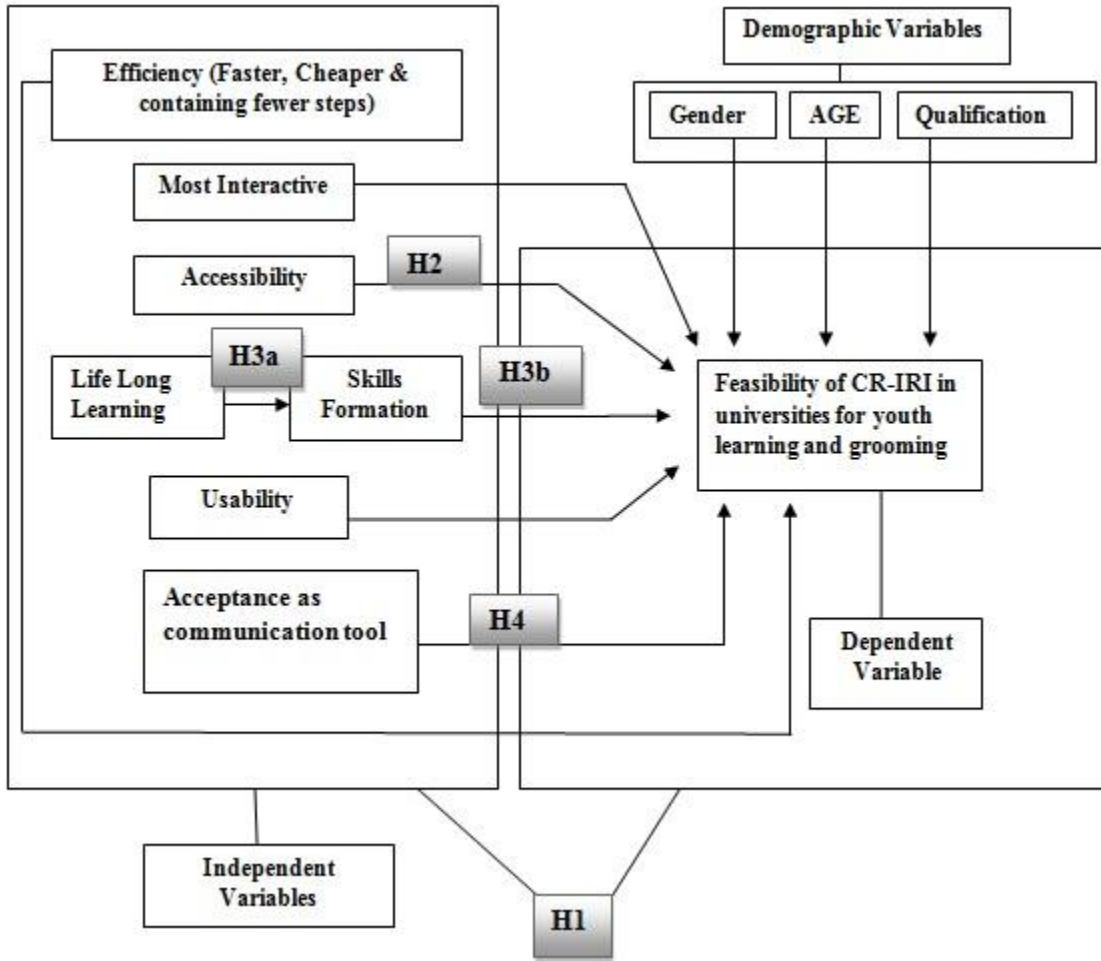
Figure 4 Research Model with Hypothesis

HI	Independent Variables (Efficiency, Most Interactive source of guidance and Usability as communication tool) are related to Feasibility of CR-IRI in universities for youth learning and grooming.
H2	Feasibility of CR-IRI for youth learning and grooming in higher education sector depends upon easy access for students.
H3a	Lifelong learning supports skills formation in students.
H3b	Formation of skills in students (Youth) establishes a relationship with Feasibility of CR-IRI in universities for learning and grooming.
H4	Acceptance as communication tool is related to the Feasibility of CR-IRI in universities for youth learning and grooming.

3.6 Data Assembly

In Appendix-1 you can see the questionnaire designed by me. Data assembled via questionnaire in hardcopies (printed form). Questionnaire is distributed in educational institutes (Universities). The target respondents are Students. There is no definite limit of age, education, gender and city to fill this questionnaire. Main focus is our youth. The aim of our research is to find the feasibility of CR used for the betterment of youth of Pakistan.

Some researchers adopt an online surveys method and think that online questionnaires filling process is easy. But it has some disadvantages like

- These types of online surveys have **limited scope**, because not all the people have internet access all the time.
- Other people do not know what our research objective is, they are unable to understand the questions they are asked to answer.

Advantages of **Printed Questionnaires**

- Audiences easily fill it, because you are able to convey and demonstrate face to face what actually the purpose of your research is [60].
- It is quick and easy way to quantify the sampled data.
- Printed form is an evidence form of document, one can show it as a proof that I have done this much work
- Researchers believe that quantitative data can be easily used to create new theories and easy way to test the existing hypothesis.

Following are few disadvantages [61]

- It is considered as bit expensive way of data gathering.

- As we have huge amount of data, sometimes there might be a chances of errors.

To fulfill our need Questionnaire is designed. Questionnaire of the survey consists of 3 sections. Section 1 contains the personal and organizational attributes of the professional. Section 2 contains questions linked to create awareness about FM97.6 working in CUST. Section 3 is to check the access of CR for university students, how much is it feasible for them to use it as communication tool and it's usability in fields of education, carrier building and other aspects of grooming. The questionnaire was adapted from different resources [63] [64] [65] [66] [67].

Note: *Sample size is related to university students.*

3.7 Brief Description of Questionnaire

- **Awareness Check**

This section highlights information about democratic variables like gender, age, education, major of degree and other general information of audience.

- **CUST FM Section**

This section contains three questions which aim to provide information about FM broadcasting system working in Capital University of Science and Technology (CUST). This section is made to generate knowledge among university students about CUST FM.

- **Efficiency Check**

Section of efficiency check contains four questions (see appendix-1). These questions deal with speed, cost and availability of CR-IRI with fewer steps for educational purposes in universities. These questions were asked to check that our targeted audiences agree with the efficiency of CR-IRI or not. One question is related to cost efficiency, one question is related to evaluate speed and other two questions deal with the ease of access check of CR-IRI. The results of the questions showed the number of students who agree the efficiency check, some audience not sure whether it is really efficient or not and other audience not intended to have it.

- **Most Interactive**

In above section (3.4.2) I tell the effect of Social Influence on the adoption of CR-IRI in Pakistani universities. For check two questions were selected. These questions deal with interactive radio instruction (IRI) which specifically deals with the broadcasting for educational learning and grooming purposes.

- **Accessibility**

Accessibility is an important variable which is highlighted and contain only one question because it seems to be enough for asking the youth or university students that whether they have the facility of CR-IRI available in their universities or not.

- **Lifelong Learning**

The basic purpose of our research is not just to ensure the feasibility of CR-IRI for short run, but our aim is to execute it as a lifelong learning tool. For this purpose it is important to know

what our audiences think i.e. either it is implemented for long run or not acceptable by them. This section contains three questions.

- **Feasibility &Usability**

Both are considered as supportive variables. To verify it two questions are defined. They support in acceptance of CR-IRI for the university students. The designed question clearly reflects what researcher wants to asked? Thus no confusion was created in form of extra questions. Audience influence will decide the effectiveness of CR-IRI.

- **Adoption**

This section contains two questions which were seems enough to check whether the targeted audience want to accept CR-IRI as a learning tool in their universities or not. (See appendix 1).

3.8 Chapter Summary

In this chapter both research methods are used i.e. qualitative and quantitative. Qualitative part of research is case-study method which is used by doing extensive case-study review in chapter 2. Then for implementation of quantitative method ICT model is selected as reference model on the basis of which we have constructed our model and developed hypothesis through it. To proof those hypothesis independent, dependent and demographic variables are defined. This chapter also includes data assembly (questionnaire type) and detail description about questionnaire.

CHAPTER 4

DATA ANALYSIS AND RESULTS

4. Data Analyzing

4.1 Reliability Test

After collecting sampled data via questionnaire survey next step is to analyze the data. First step of analyzing is to check whether our data is reliable or not. For this purpose we have use Cronbach's alpha (α).

4.1.1 Cronbach's Alpha (α)

To explain Cronbach's alpha, we must first create a research situation in which we wish to assess the degree of internal consistency among a set of indicators (questionnaire items). Let me clarify it with an example.

Assume that the target group for our study is university students. For example for efficiency check of CR-IRI we have designed 4 questions, each question has five points **Likert Scale** which is

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Now I want to know whether my all questions reliably measure the same variable (Efficiency Check) for this here I used Cronbach's Alpha Test. The sample result is as follows;

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.736	.801	20

Table 1 Sample Reliability Test Result (Cronbach's alpha) in SPSS

In this table our concerned value is of Cronbach's Alpha. If the value of it is greater or equal to **0.7** then it represents that our data from questionnaire is reliable. In this example, value of **(α) = 0.736** which means a higher reliability i.e. higher the value of Cronbach's Alpha of questions higher will be the reliability

Cronbach's Alpha is known as **Internal Consistency** estimate of reliability of test scores. According to below mentioned table following rules should be used with cautions.

Cronbach's Alpha (α)	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Table 2 Relationship of Cronbach's Alpha with Internal Consistency

4.2 Correlation Test

To verify the hypothesis deduce via defined variables and also to find how controlling variables controls the remaining dependent and independent variables a techniques is used named as Correlation Test. It is an important step to find the relationship between two ordinal and ordinal-nominal variables. Explaining terminologies used in result analysis;

Magnitude of Correlation (Effect Size)

It is a number that lies between **-1 and +1** which measures the **Strength** and **Direction** of the linear relationship between two variables. It tells the statistical significance of two variables.

P-value

It is a correlation- coefficient which is the probability of getting values of the test statistics as extreme as or more extreme than that observed by chance alone, if the null hypothesis H_0 is true. Its values lie between **0 and 1.**

Significance Level

It is a fixed probability of wrongly rejecting the null hypothesis H_0, if it is in fact true. Usually set to **0.01 (1%) or 0.05 (5%).**

4.2.1 Ordinal-Ordinal Correlation

Spearman's Rho is considered as a best selection to find a correlation between two ordinal variables. Applying Spearman's Rho theoretically, it's a very difficult and lengthy process. But with the help of SPSS it can easily be done in fewer steps.

To explain it we will consider an example. Suppose we want to find correlation between two ordinal variables i.e. cost (efficiency check) and speed (efficiency check). Analyze it in SPSS, result obtained as;

Correlations

			Most Interactive	Adoption
Spearman's rho	**Most Interactive**	**Correlation Coefficient**	1.000	.174[*]
		Sig. (2-tailed)	.	.040
		N	140	140
	Adoption	**Correlation Coefficient**	.174[*]	1.000
		Sig. (2-tailed)	.040	.
		N	140	140

*. Correlation is significant at the 0.05 level (2-tailed).

Table 3 Sample Results of Ordinal-Ordinal Correlation in SPSS

4.2.2 Ordinal-Nominal Correlation

Pearson Chi-Square Test is use to find the correlation between a nominal and an ordinal variable. This test is done to check either strong or weak or no relationship occurs between the two variables. To deal with this (Ordinal-Nominal) relationship, null hypothesis is developed and every relationship is judge on the basis of acceptance and rejection of null hypothesis. This test is used with the sample size (N>50). Example of sample Chi-Square test result is as follows.

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.138[a]	4	.038
N of Valid Cases	150		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.43.

Table 4 Sample Result of Pearson Chi-Square Test in SPSS

4.3 Results

Results were shown which we get after processing of questionnaire.

4.3.1 Reliability Test Results

Reliability test was made to check that all the designed questions of questionnaire represent the same desired factor. Value of Cronbach's Alpha verifies that our result is up to the mark or not. If its value is exactly or nearly equal to 0.7; mans that our result is up to the mark. Following results we obtained after performing Reliability test.

Reliability Statistics

Cronbach's Alpha	N of Items
.674	4

Item Statistics

	Mean	Std. Deviation	N
Cost Efficiency	3.25	1.142	150
Speed Efficiency	3.49	1.035	150
IRI as Supplement of Written Material (Efficiency check)	3.25	1.036	150
Most Interactive	3.55	.916	150

Reliability Statistics

Cronbach's Alpha	N of Items
.731	3

Item Statistics

	Mean	Std. Deviation	N
Source of Guidance	3.54	1.066	150
Accessibility	2.86	1.135	150
Life Long Learning	3.44	1.096	150

Reliability Statistics

Cronbach's Alpha	N of Items
.700	3

Item Statistics

	Mean	Std. Deviation	N
Implementation of IRI in Universities	3.44	.938	150
Impact of IRI	3.66	1.073	150
Feasibility	3.39	1.067	150

Reliability Statistics

Cronbach's Alpha	N of Items
.723	3

Item Statistics

	Mean	Std. Deviation	N
Usability	3.37	1.108	150
Adoption	3.55	1.127	150
Need of Audience	3.65	1.050	150

Table 5 Reliability Test of Variables

Along with important results evaluated by using Cronbach's Alpha, SPSS showed the mean and standard deviation too along with the reliability test. So, we thought it necessary to be shown along with reliability test results.

Now considering the variables, the results were nearly and approximately equal to 0.7. The reason of having these type of results was that during the questionnaire designing phase it was mentioned that the questions should be brief and to the point, so that the targeted audience may not read in a different way to each question and not get confused. All the questions are interlinked to one another. The overall value of Cronbach's Alpha was up to the mark which makes our data reliable.

4.3.2 Questionnaire Results-Demographic

This section contains results related to demographic (controlling-variables). The sequence of the deduced results was kept same as they were asked in the questionnaire.
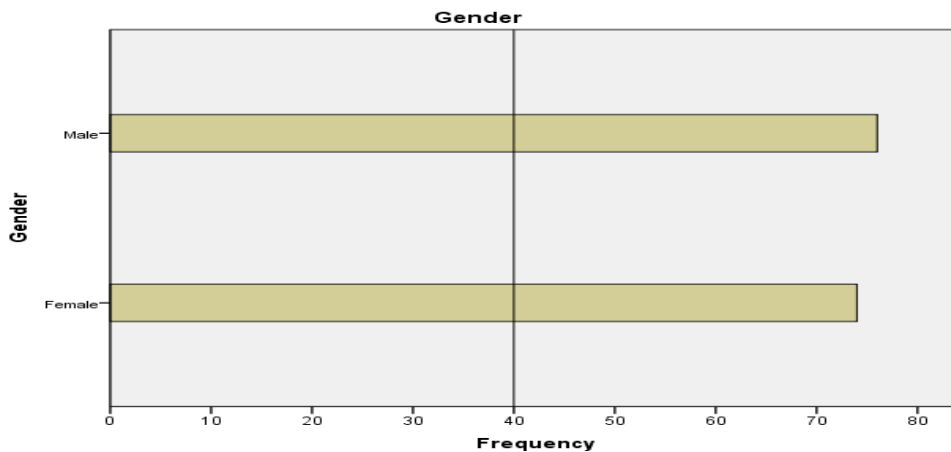
4.3.2.1 Gender

Figure 5 Gender Results (Questionnaire)

Total number of respondents was **150** out of which **74** were females and **76** were males. Gender was used only as a controlling variable to know the interest and participation of audience.

4.3.2.2 Age

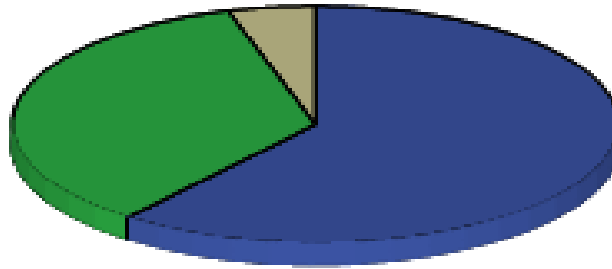| AGE		Frequency	Percent	
Valid	Young	91	60.7	**Young** : from **18** to **24**
	Mature	52	34.7	**Mature**: from **25** to **34**
	Senior	7	4.7	**Senior**: above **34**
	Total	150	100.0	

Figure 6: Age (Pie-Chart Results)

Total **150** respondents,

- **91** from **young** age group i.e. (age from **18** to **24** years old),

- **52** from **mature** age group i.e. (age from **25** to **34** years old),

- **7** from **senior** age group i.e. (age above **34** years).

Focusing on results we can say that most of the respondents were from younger age group i.e. our youth. But in questionnaires respondent avoid highlighting their exact or real age, hence research was bound to ask that question in some defined window. As the exact ages were unknown, there might be few variations in results. But final results will base on future testing like (correlation and chi-square).

4.3.2.3 Education

Education

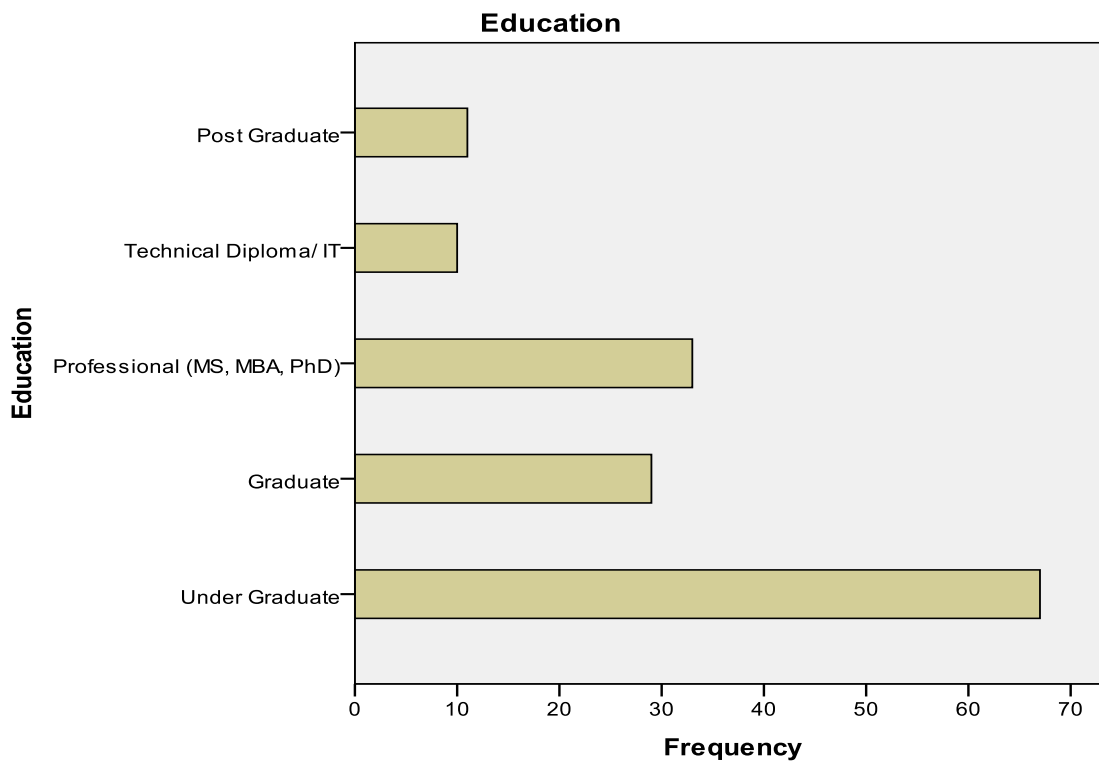|		Frequency	Percent
Valid	**Under Graduate**	67	44.7
	Graduate	29	19.3
	Professional (MS, MBA, PhD)	33	22.0
	Technical Diploma/ IT	10	6.7
	Post Graduate	11	7.3
	Total	150	100.0

Figure 7 Education Level Results (Questionnaire)

44% respondents belong to under graduate level. **19%** from graduate, **22%** are professionals, **6%** are from technical/IT and **7%** from post graduate level.

4.3.2.4 Majors

Qualification Major

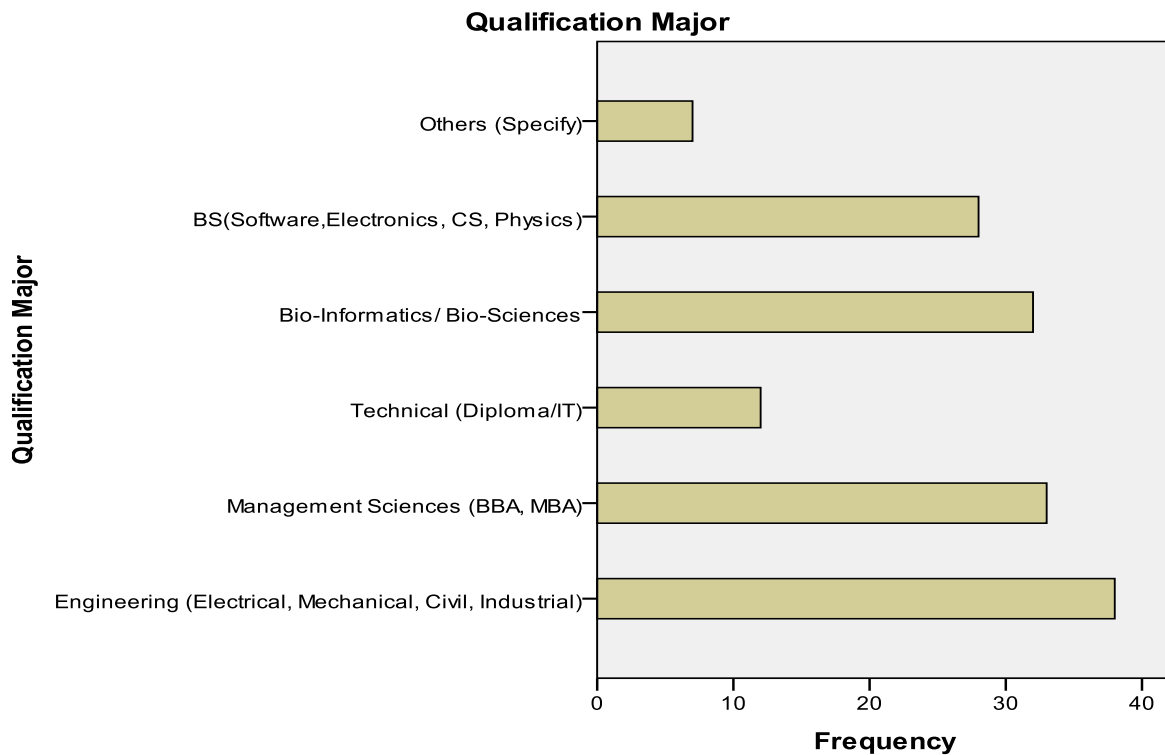|		Frequency	Percent
Valid	Engineering (Electrical, Mechanical, Civil, Industrial)	38	25.3
	Management Sciences (BBA, MBA)	33	22.0
	Technical (Diploma/IT)	12	8.0
	Bio-Informatics/ Bio-Sciences	32	21.3
	BS(Software, Electronics, CS, Physics)	28	18.7
	Others (Specify)	7	4.7
	Total	150	100.0

Figure 8 Qualification Major Results (Questionnaire)

Most of the respondents were engineering students.

These are the results of demographic variables; next section of this chapter will highlight the results of independent variables.

52

4.3.3 Questionnaire Results- Independent Variables

4.3.3.1 Efficiency Check

Cost Efficiency Check

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Community Radio (CR) can be a low cost solution for improving the classroom transactions and learning outcomes.	**19**	**16**	**33**	**72**	**10**

Out of **150** respondents, **6%** strongly agree, (**48%**) respondents agree that CR can be used as a low cost solution for classroom learning. **22%** respondents remain neutral by saying that they are not sure about It. **10%** disagree and **12%** strongly disagree that CR is not a low cost solution respectively.

Speed Efficiency Check

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
CR can be a faster source of communication and knowledge transfer in universities of Pakistan	**7**	**21**	**32**	**71**	**19**

Analyzing majority of respondents **(47%)** agree that CR can be used as a faster source of communication. **12%** strongly agree, **21%** were neutral, **14%** disagree and **4%** strongly disagree.

IRI as Supplement of Written Material (Efficiency Check)

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Radio programs can supplement the written materials of books and hand notes.	5	36	41	53	15

Approximately (**35%**) of respondent agree that IRI can be used as supplement of written material and hand notes. **10%** strongly agree, **27%** play a natural role. **24%** disagree and **3%** strongly disagree.

4.3.3.2 Most Interactive

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
IRI methodology in community radio is use full for making information mobile and worldwide.	8	8	39	83	12

8% of respondents strongly agree, (**55%**) agree that radio is most interactive tool of making information mobile. **26%** neither agree nor disagree, **5%** of respondent disagree and strongly disagree respectively.

Source of Guidance

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
IRI should provide guidance, discussion on syllabus of educational institutes and subject matter for students.	8	19	30	70	23

Out of **150** respondents, approximately **15%** strongly agree, (**46%**) respondents agree that CR can be an easy source of guidance. **20%** respondents remain neutral by saying that they are not sure about It. **12%** disagree and **5%** strongly disagree that CR is not a good source of guidance respectively.

4.3.3.3 Accessibility

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
You have access to CR through your university.	24	29	48	42	7

Comparing these results with the above evaluated results shows that rate of strongly disagree **16%** and disagree **19%** is greater among all. (**32%**) respondents are neutral i.e. they neither agree nor disagree that universities provide accessibility of CR for them. **28%** agree and **4%** strongly agree. This is an important variable that is satisfied, for further authenticity we will apply correlation and chi-square test later.

4.3.3.4 Lifelong Learning

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Radio, allow students to listen, discuss and participate in educational programs.	12	14	41	62	21

(**41%**) of people agree that CR can be a good source for lifelong learning. **27%** of respondents remains neutral in their choice. Higher the agree rate of respondents conclude that if CR-IRI is implemented in educational institutes of Pakistan then it would show remarkable long term achievement.

Implementation of IRI in Universities

(**46%**) of respondents want the implementation of IRI for long term learning.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
You need the implementation of IRI in formal universities with teachers, as well as through informal community learning centers using trained facilitators.	8	11	50	69	12

Impact of IRI

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Radio programs can have positive impact on your life in terms of education, income, job, health, grooming skills etc.	11	6	36	67	30

Most of the respondents **(44%)** agree that IRI will have a positive impact in the improvement of their skills, gaining new knowledge, awareness about university news alerts, accessing daily lectures, getting better jobs, carrier building and a bright future.

4.3.3.5 Feasibility

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
It will be feasible and easy for university students to have learning from radio.	9	24	33	68	16

Approximately **(45%)** of the respondents agree with the feasibility of IRI. It explains that if university students provided with CR, it will be more feasible for them to learn. **10%** strongly agree were as response of **22%** seems neutral. **16%** disagree and **6%** strongly disagree.

4.3.3.6 Usability

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
You think that radio increases the effectiveness of learning process.	11	20	43	55	21

(36%) of respondents agree and want to use CR as an effective tool for learning process. **14%** strongly agree, **28%** shows neutral response.

4.3.3.7 Adoption

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Information sources like T.V and internet were well selected, credible and sufficient to provide educational knowledge and grooming.	**11**	**15**	**33**	**63**	**28**

Out of **150** respondents, **18%** strongly agree, (**42%**) respondents agree that CR can be well selected, credible and sufficient to provide educational knowledge and grooming. **22%** respondents remain neutral by saying that they are not sure about It. **10%** disagree and **7%** strongly disagree that CR is not the only source; they think internet is more credible.

Need of Audience

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
You need radio broadcast centers to be developed in educational institutes.	**7**	**12**	**40**	**59**	**32**

(**39%**) respondents agree to have CR stations in their institutes. If radio broadcast centers actually get developed, it will be a great achievement. **21%** students strongly agree with our suggestion. **26%** of them are neutral. Whereas **8%** disagree and **4%** strongly disagree i.e. they don't want the implementation of CR stations in their universities.

Next section will explain the results related to correlation of variables in detail.

4.3.4 Correlation: Independent Variables Vs Feasibility of CR-IRI in Universities

In this section, results of correlation between (ordinal-ordinal) i.e. independent variables and feasibility of CR-IRI in universities are shown. Previously we have already given a detail explanation related to methodologies used to find correlation between two ordinal variables. Here we are finding and evaluating the results. To some extent Hypothesis acceptance and rejection also covered in this section. But final discussion will be done after analyzing all the results.

4.3.4.1 Efficiency Check Vs Feasibility of CR-IRI in Universities

Correlations

			Feasibility	Cost Efficiency	Speed Efficiency	IRI as Supplement of Written Material (Efficiency check)
Spearman's rho	Feasibility	Correlation Coefficient	1.000	.166*	.379**	.411**
		Sig. (2-tailed)	.	.042	.000	.000
		N	150	150	150	150
	Cost Efficiency	Correlation Coefficient	.166*	1.000	.390**	.263**
		Sig. (2-tailed)	.042	.	.000	.001
		N	150	150	150	150
	Speed Efficiency	Correlation Coefficient	.379**	.390**	1.000	.361**
		Sig. (2-tailed)	.000	.000	.	.000
		N	150	150	150	150
	IRI as Supplement of Written Material (Efficiency check)	Correlation Coefficient	.411**	.263**	.361**	1.000
		Sig. (2-tailed)	.000	.001	.000	.
		N	150	150	150	150

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6 Efficiency Check VS Feasibility of CR-IRI in Universities Correlation Results

Findings

Feasibility of CR-IRI in universities has a strong correlation with Efficiency due to use of IRI as supplement of written materials. It shows that students wants IRI to be used a supplement of written hand notes in their universities. Most of the audience is satisfied with the efficiency of CR., but moderate number **(p=0.042)** of students are curious about the efficiency of CR technology. In all cases p-value is very good and chances of getting null hypothesis is only **0%** minimum and **4.2%** maximum.

Interpretation of Results

From findings it is concluded that IRI as supplement of written materials plays a very vital role for the students of universities. It will help them to improve their learning skills. Students also agree that CR can be a faster source of communication. In the country like Pakistan where people are surrounded by electricity crises CR can provide good source of communication.

Moderate number of students thinks that cost efficiency is weakly related to feasibility of adoption of CR-IRI as a communication tool. It means that if cost system get more improved, funded and supported by higher authorities, then it will be more efficient for the universities to use CR-IRI.

Hence we can say that **efficiency check, in all forms (cost, speed and supplement of written materials) is related to feasibility of CR-IRI in universities** as learning platform.

4.3.4.2 Most Interactive Source of Guidance

Correlations

			Feasibility	Source of Guidance
Spearman's rho	**Feasibility**	**Correlation Coefficient**	1.000	.301[**]
		Sig. (2-tailed)	.	.000
		N	150	150
	Source of Guidance	**Correlation Coefficient**	.301[**]	1.000
		Sig. (2-tailed)	.000	.
		N	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Table 7 Most Interactive Source of Guidance Correlation Results

Findings

IRI as most interactive source of guidance is acceptably related to feasibility of CR-IRI in universities. As shown in above figure as chances of getting null hypothesis in **0%** and magnitude of correlation is **0.3**. Hence we conclude that students agree CR-IRI in their universities as a most interactive source of gaining knowledge.

Interpretation of Results

As IRI departments still not have an authority to be developed in educational institutes, if they will authorized then IRI will prove itself as a most interactive way of learning.

4.3.4.4 Usability

Correlations

			Feasibility	Usability
Spearman's rho	Feasibility	Correlation Coefficient	1.000	.611[**]
		Sig. (2-tailed)	.	.000
		N	150	150
	Usability	Correlation Coefficient	.611[**]	1.000
		Sig. (2-tailed)	.000	.
		N	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Table 8 Usability Correlation Results

Findings

Usability and feasibility of CR as communication tool has a very strong correlation. Magnitude

of correlation is **0.6** and the chance of getting null hypothesis is **0%.** We can conclude that if we

make CR-IRI feasible, then in future we will have a huge audience as users.

Interpretation of Results

In this running era where communication systems are moving very fast and new systems had

covered the places of old systems. Then feasibility of CR-IRI plays a vital role towards the

adoption and usability of this system.

Now following is the summary of correlations;

Independent Variables	P-values of Correlation with Feasibility of CR-IRI in universities.
Cost Efficiency	0.042
Speed Efficiency	0.00
IRI as supplement of written material	0.00
Most Interactive source of Guidance	0.00
Usability	0.00

Hence we can conclude that:-

Independent Variables are related to feasibility of CR-IRI in universities.

HYPOTHESIS H1 ACCEPTED

4.3.5 Correlation: Accessibility Vs Feasibility of CR-IRI in Universities

Correlations

			Feasibility	Accessibility
Spearman's rho	Feasibility	Correlation Coefficient	1.000	.213[**]
		Sig. (2-tailed)	.	.009
		N	150	150
	Accessibility	Correlation Coefficient	.213[**]	1.000
		Sig. (2-tailed)	.009	.
		N	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Table 9 Accessibility vs. Feasibility of CR-IRI in Universities Correlation Results

Findings

Feasibility of CR-IRI in universities and accessibility has strong correlation as p-value is only **0.009 (0.9%).** Higher the accessibility higher will be the feasibility of CR-IRI. This concludes that if CR-IRI is not easily accessible then we cannot increase the feasibility rate of IRI.

Interpretation of Results

In light of above results we conclude that in order to enhance the use of this combination system, it is very important that our universities and educational institutes have easy access to this broadcast system. Here we would like to give a suggestion that as **FM 97.6** is working in **Capital University of Science and Technology (CUST)**, more funds should be raised for the start of proper broadcast via university. Along with it, its frequency should be increase that other neighboring universities get awareness and they will be motivated to develop their own broadcast IRI system. Hence we conclude that,

Feasibility of CR-IRI for youth learning and grooming in higher education sector depends upon easy access for students.

HYPOTHESIS H2 ACCEPTED

4.3.6 Correlation: Lifelong Learning Vs Skills Formation

Correlations

			Life Long Learning	Implementation of IRI in Universities	Impact of IRI
Spearman's rho	Life Long Learning	Correlation Coefficient	1.000	.441**	.433**
		Sig. (2-tailed)	.	.000	.000
		N	150	150	150
	Implementation of IRI in Universities	Correlation Coefficient	.441**	1.000	.435**
		Sig. (2-tailed)	.000	.	.000
		N	150	150	150
	Impact of IRI	Correlation Coefficient	.433**	.435**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	150	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Table 10 Lifelong Learning vs. Skills Formation Correlation Results

Findings

Lifelong learning shows very strong relationship with skills formation (Implementation of IRI in universities and Impact of IRI). Null hypothesis development is **0%** and magnitude of correlation is **0.4.** Correlation is significant at 0.01 level this means that value of **(p< 0.01)**.

Interpretation of Results

The aim of our research is not only the feasibility of CR-IRI, but also the long term implementation of this grooming tool in universities of Pakistan. Above results shows that lifelong learning help in different skills formation among the students. Hence we can say that,

Lifelong learning support Skills Formation in students.

HYPOTHESIS H3a ACCEPTED

4.3.6.1 Correlation: Skills formation Vs Feasibility of CR-IRI in Universities

Correlations

			Feasibility	Impact of IRI	Implementation of IRI in Universities
Spearman's rho	Feasibility	Correlation Coefficient	1.000	.471[**]	.232[**]
		Sig. (2-tailed)	.	.000	.004
		N	150	150	150
	Impact of IRI	Correlation Coefficient	.471[**]	1.000	.435[**]
		Sig. (2-tailed)	.000	.	.000
		N	150	150	150
	Implementation of IRI in Universities	Correlation Coefficient	.232[**]	.435[**]	1.000
		Sig. (2-tailed)	.004	.000	.
		N	150	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Table 11 Skills Formation vs. Feasibility of CR-IRI in Universities Correlation Results

Findings

Skills formation shows strong correlation with the feasibility of CR-IRI in universities. Magnitude of impact of IRI is **0.471** which highlights a strong relationship with feasibility and magnitude of implementation of IRI in universities have moderate correlation **(p=0.004)** with feasibility i.e**. 0.232**. This means that students are curious about the implementation of this learning tool in their universities. In all cases p-value is very good and chances of getting null hypothesis is only **0%** minimum and **0.4%** maximum.

Interpretation of Results

Focusing on Big Picture, for the lifelong implementation and skill formation, we have highlighted and provided many suggestions in chapter 5. Also developed a model which shows that how CR-IRI is feasible to provide platform for learning different skills by the people belonging to different occupations and different areas of Pakistan. Hence we concluded that,

Formation of skills in students (Youth) establishes a relationship with Feasibility of CR-IRI in universities for learning and grooming.

HYPOTHESIS H3b ACCEPTED

4.3.7 Correlation: Acceptance Vs Feasibility of CR-IRI in Universities

Correlations

			Feasibility	Need of Audience	Adoption
Spearman's rho	**Feasibility**	Correlation Coefficient	1.000	.466**	.234**
		Sig. (2-tailed)	.	.000	.004
		N	150	150	150
	Need of Audience	Correlation Coefficient	.466**	1.000	.453**
		Sig. (2-tailed)	.000	.	.000
		N	150	150	150
	Adoption	Correlation Coefficient	.234**	.453**	1.000
		Sig. (2-tailed)	.004	.000	.
		N	150	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Table 12 Acceptance vs. Feasibility of CR-IRI in Universities Correlation Results

Findings

Need of audience has a strong correlation with feasibility of CR-IRI in universities with the magnitude of **0.466** and Adoption has moderate **(p=0.004)** correlation, which shows that many students are curious to adopt new system. In these cases p-value is good and chances of getting null hypothesis is only **0%** minimum and **0.4%** maximum.

Interpretation of Results

We concluded that students are innovate in nature and have high degree of personal innovativeness i.e. they are curious about new technologies and try to be the first one in social circle to accept new technology), this may be due to a fact that respondents have higher education level. We also concluded that greater the willingness to try new system the higher will be the feasibility of CR-IRI.

So, we can conclude that,

Acceptance as communication tool is related to the Feasibility of CR-IRI in universities for youth learning and grooming.

HYPOTHESIS H4 ACCEPTED

4.3.8 Correlation: Demographic Variables Vs Feasibility of CR-IRI in Universities

4.3.8.1 Gender

Gender is a nominal variable where as feasibility of CR-IRI is ordinal variable. So we use ordinal-nominal correlation as described early in (section 4.2.2).

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.138^a	4	.038
Likelihood Ratio	10.355	4	.035
Linear-by-Linear Association	.006	1	.937
N of Valid Cases	150		

Table 13 Gender & Feasibility of CR-IRI in Universities (Chi-Square Test) Results

<u>Findings</u>

Although p-value is at bottom line **(3.8%)** yet we accepted the relationship. It shows that as the value of gender increases value of feasibility of CR-IRI also increases. But it seems that males are more interested in adoption of CR-IRI as learning and grooming tool. This can be verified via following table (generated by SPSS along with correlation results).

Gender * Adoption Cross tabulation

			Adoption					
			Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total
Gender	Female	Count	4	6	17	39	8	74
		Expected Count	5.4	7.4	16.3	31.1	13.8	74.0
	Male	Count	7	9	16	24	20	76
		Expected Count	5.6	7.6	16.7	31.9	14.2	76.0
Total		Count	11	15	33	63	28	150
		Expected Count	11.0	15.0	33.0	63.0	28.0	150.0

Table 14 Gender & Adoption of CR-IRI (Cross Tab.)

Interpretation of Results

Now we can also check the relationship of gender with other ordinal independent variables.

Following is the correlation results.

Chi-Square Tests

(Need of Audience)	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.854	4	.005
N of Valid Cases	150		

(Most Interactive Source of Guidance)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.447	4	.168
N of Valid Cases	150		

(Implementation of IRI)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.188^a	4	.381
N of Valid Cases	150		

(Cost Efficiency)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.302^a	4	.178
N of Valid Cases	150		

(Speed Efficiency)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.577	4	.334
N of Valid Cases	150		

(IRI as supplement of written materials)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.836	4	.098
N of Valid Cases	150		

(Accessibility)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.070	4	.723
N of Valid Cases	150		

(Lifelong Learning)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.703	4	.046
N of Valid Cases	150		

Table 15 Gender & Independent Variables Correlation Results

We will consider or deal with that variable which has strong correlation with gender i.e. need of guidance having **Asymp. Sig** or **p-value = 0.005** (0.5% chances of getting null hypothesis) and show a strong correlation. Currently Pearson Chi-Square is positive hence with increase in gender, need of guidance about CR-IRI also increases.

4.3.8.2 AGE

Age and CR-IRI as source of guidance both are ordinal variables because age can be measured in different groups and intention was on likert scale. Correlation between two ordinal variables is as follows.

Correlations

			AGE	Source of Guidance
Spearman's rho	AGE	Correlation Coefficient	1.000	.220**
		Sig. (2-tailed)	.	.007
		N	150	150
	Source of Guidance	Correlation Coefficient	.220**	1.000
		Sig. (2-tailed)	.007	.
		N	150	150

**. Correlation is significant at the 0.01 level (2-tailed).

Table 16 AGE & Feasibility of CR-IRI as Source of Guidance

Findings

There is good correlation between age and feasibility of CR-IRI as a source of guidance. The p-value is **0.007 (0.7%).** Correlation is positive. This can be clarify through a cross tab.

AGE * Source of Guidance Cross tabulation

Count

		Source of Guidance					
		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total
AGE	Young	6	16	19	39	11	91
	Mature	2	3	10	28	9	52
	Senior	0	0	1	3	3	7
Total		8	19	30	70	23	150

Table 17 AGE & CR-IRI as Source of Guidance Cross Tab.

We can conclude that as the age of respondents' directly related to feasibility of CR-IRI in universities as a source of guidance and learning also increases. Students from **age group (18-24),** our youth have strong attraction towards the adoption of this communication system.

Interpretation of Results

Now we can also develop the relationship of age with other ordinal variables and check what results we can deduce through it. As age is ordinal variable so, the correlation is (ordinal-ordinal) relationship. Correlation results are as follows,

Correlations

		AGE	Cost Efficiency	Speed Efficiency	IRI as Supplement of Written Material (Efficiency check)	Most Interactive	Source of Guidance	Accessibility
	Correlation Coefficient	1.000	.060	-.011	.084	.071	.220	.154
	Sig. (2-tailed)	.	.468	.891	.305	.387	.007	.061
	N	150	150	150	150	150	150	150

Correlations

	AGE	Life Long Learning	Implementation of IRI in Universities	Impact of IRI	Feasibility	Usability	Adoption	Need of Audience
Correlation Coefficient	1.000	.046	.112	.148	.133	.069	.032	.091
Sig. (2-tailed)	.	.572	.173	.070	.103	.404	.695	.268
N	150	150	150	150	150	150	150	150

Table 18: AGE vs. All Independent Variables

Age shows very weak or no relationship with these independent variables. So we will ignore its correlation with these variables.

4.3.8.3 Qualification/ Educational Levels

Education is ordinal in nature, so we relate it with other ordinal variables. (Ordinal-ordinal) correlation technique is used for the results evaluation. Following are the correlation results.

Correlations

	Education	Feasibility	Cost Efficiency	Speed Efficiency	IRI as Supplement of Written Material (Efficiency check)	Most Interactive	Source of Guidance	Accessibility
Correlation Coefficient	1.000	.071	.060	.019	.094	.069	.097	.127
Sig. (2-tailed)	.	.387	.468	.816	.254	.404	.237	.122
N	150	150	150	150	150	150	150	150

Table 19 Education vs. All Correlations

Findings

There is very week and no correlation between education and all correlations. P-value is greater than 0.05 (reference value), shows that there is no significant relationship between education and other variables.

Interpretation of Results

After observing all the results we came to a conclusion that education is not related to feasibility of CR-IRI. This means that education is not the base of learning. Not only well qualified people but also many less educated people learn skills and groom themselves via CR-IRI. Education is not a necessary element of learning and gaining knowledge.

4.4 Conclusion of Results

Feasibility of CR-IRI in universities of Pakistan is about finding the perception and believes of people (Youth) about communication system, and important factors affecting the feasibility of CR-IRI. Many interesting results extracted from this study have been found.

Efficiency check plays a vital role for the feasibility of CR-IRI for grooming and learning in universities. IRI as supplement of written material shows a strong correlation were as cost and speed efficiency showed moderate relationship. So, it clearly identify that IRI can be used as a learning tool in place of hand books and written materials.

CR-IRI is a most interactive source of guidance and usable. Students (youth) are always in favor of experiencing new things, new technologies etc. CR-IRI can be made feasible if its usability rate get increased. For this purpose universities of Pakistan should start their own broadcasting systems and try to make CR interactive.

Accessibility is considered as one of the most important factor. Many universities of Pakistan do not have an easy access to this communication system. If the access of CR-IRI made easy, learning outcomes will be increased. Easy access is important for the feasibility of CR-IRI in universities of Pakistan for grooming and educational purposes. Students agree to have accessibility of CR-IRI in their universities as well.

The purpose of this research is not to facilitate for only one time, this research is conducted to have a long lasting output. Focusing on big picture, lifelong learning can be input to a skills formation. CR-IRI as learning tool not only be used for very well qualified people but also be used for less literate persons. Formation of skills will positively increase the feasibility of CR-IRI.

People's adoption or acceptance influenced by easy accessibility and positive impact of IRI. In Pakistan, most of the people were found curious for the adoption of different systems. It shows that they have a strong attitude towards innovation and acceptance of new technologies, which fulfill need of increase feasibility rate of CR-IRI as well. If CR-IRI is implemented in universities, it will show optimistic response.

Gender, age and qualification; all are related to feasibility of CR-IRI in universities. Males were more intended then females. Students from age group (18-24) seem more interested to have CR-IRI as a source of guidance. But age is not positively related to feasibility of CR-IRI because we are not dealing with the people of specific age group. Aim of our study is to provide a learning tool for the people belonging to any age group along with no discrimination of male or female. In the same way qualification has also shown independent relationship with other variables because

qualification cannot be the ground for the feasibility check of CR-IRI for educational and training purposes in universities.

We concluded that among a sample size of 150, most of the respondents agree to have CR-IRI in their universities for lifelong learning and accepted the feasibility of CR-IRI.

CHAPTER 5

CONCLUSIONS AND FUTURE RECOMMENDATIONS

5. Limitations, Suggestions and Future Recommendations

In this chapter we have described the limitations of our research. Also want to highlight and suggest that community radio can be made as a platform for educational development in Pakistan. After doing extensive case studies review in our second chapter we are able to broader our vision for learning, teaching, grooming and making community radio useful in different prospects for educational improvement in Pakistan.

5.1 Conclusion

This research is conducted to check the feasibility of CR-IRI in universities of Pakistan for grooming, learning and training purposes. After introduction extensive literature is reviewed to highlight that how CR is serving for many years in different developing countries. In it we have studied different cases all over the world. From the information collected through literature review gap is identified. On the basis of which problem statement and research questions are developed. When the questions are defined then we have chosen ICT model for the construction of our own model to build up the hypothesis. Methods used to strengthen our research are both qualitative and quantitative. Case-Study research method (qualitative) is used as a supportive pillar to highlight the working of CR-IRI in different countries and quantitative method is implemented by analysis. Survey was conducted and questionnaires are floated with 20 basic variables. These variables are defined in our model. Selected audience is youth i.e. university students. To prove the hypothesis SPSS software is used. Reliability and correlation tests are applied for the evaluation of results. Through these results we came to a conclusion that most of

audience wants the implementation of CR-IRI in their universities, should have easy access and hence proves the achievability of CR-IRI. Main prospects of our research are described below:

- Generate awareness among students (youth) that CR-IRI can be used as a source of learning and grooming.

- Get the feedback of students in survey, for feasibility check of CR-IRI.

- Tried to make the mind of audience for the real life implementation of CR-IRI in universities.

5.2 Limitations of our Research

Following are the limitations of this research

- First of all sample size was relatively moderate as compare to the total population of students in universities. As samples were random hence we got not an equal number of samples for gender, age and qualification.

- Working of CR-IRI in other aspects was not discussed.

- Only universities were focused for data sampling.

5.3 Future Recommendations

Future Recommendations specifically related to use of CR-IRI at higher education level are as follows

- CR-IRI can be used for daily lectures transmission.

- Programs related to basic Islamic knowledge, without sector discrimination will be an important part of grooming and learning. Topics like Hamd, Serat-e-Nabvi (SAW), Hejab, Taharat etc. can be beneficial for students.

- Students might be interested in Recreational Programs, Anxiety and depression relief programs as well as in audio seminars.

- Programs broadcast for protecting youth from drugs and other criminal activities might be helpful to protect our youth.

- Job Alerts and carrier counseling programs can also be made as an important part of transmissions in universities.

- University buses rout plans and timings broadcast will help the students.

- A campaign might be started with the name **"Campus Radio"** at higher education level.

- Students may be allowed to have an access as live caller to highlight his/her issue or can concerned with "IRI query solver department" developed in campus, broadcasting team will help to solve matter and provide them with the required information within rules and regulations of university.

5.4 Prospects of Community Radio: Educational Development in Pakistan

5.3.1 Rural Education

We have studied during literature review that community radio (IRI) had lot of serving for the rural development. [68] Rural people have very low income to fulfill needs and improve their living standard. For example we have studied case study of Nigeria where **5 year** program

named as "**Community Participation for Action in the Social Sector (COMPASS) project"** was introduced to promote education [36]. The purpose of this project was to improve learning process at primary level. It was thought that young children memories things more quickly by listening audio, rather than writing.

Primary standard considered as a first stage of education. Young minds have lot of potential to learn new things. In Pakistan there are still many villages where education is neglected because of less resources and low income. They cannot afford expenditure of schools fees, uniforms, books, stationary etc. To improve it community radio (IRI) can be helpful. One radio station can be build for one village and educational programs can be broadcasted. So that children who do not afford school, will be able to gain education at their homes. If this suggestion got a place of practical implementation then same broadcast studio will be helpful for the transmission at secondary and higher levels.

5.3.2 Education for Children Grooming

To strengthen the nation, children proper mental and physical grooming plays an effective role. In 2014 War Child Canada was funded through the **Partnership to Strengthen Innovation and Practice in Secondary Education (PSIPSE)** initiative. PSIPSE is a funder collaborative that seeks to increase secondary education access and improve learning outcomes [69]. In many places around the globe, over many centuries, adults have forcibly involved children in war. In more recent times, these forcibly involved children have come to be collectively referred to as **'child soldiers'**, in an attempt to address the crises that these children experience within war conditions [70].

In same way Interactive Radio Instruction (IRI) could play its role in the war areas of Pakistan. Most of tribal people from Afghanistan migrated towards big cities of Pakistan. Children came from there become labors and beggars. Those innocent children also have a right to study. Radio Schools should be made and those children will have easy access to it.

In the same way at disaster effected children can also be helped by diverting their attentions and giving them a ray of hope to overcome their losses. However, as conflicts collapse and media attention will turn to the latest breaking emergency, little attention will be paid to the longer-term mental health and psychosocial conflict-affected children and families.

People belong to lower classes which were not educated but they want their children to get education; Community Radio (IRI) can also be provided as a platform for their children to get awareness of things happening around, learning as well as physical and mental grooming.

5.3.3 Women Education and Empowerment

Women act as one of the strongest pillar in building of society. Most of the people in Pakistani cultural still have this thinking that there is no need to send them to school and get educated. As from past researches in many countries Community Radio (IRI) had played its role for educating girls which were not allowed to go to educational institutions. For example on the 17th of July, two members of the Women's Advocacy Network and two survivors from Kumi district participated on a radio talk show at **Continental FM.** The talk show was organized by the representative of the Cultural Union and Women's Peace Initiative to create awareness of the challenges that children born and lobby for support from the community about their reintegration. It was also used as a platform to engage the communities on the challenges that war affected women are facing in the community such as stigma, lack of access to land and the

ongoing suffering they face in taking care of the children and break silence around these issues. This was aimed at ensuring communal acceptance of children born of war and their mothers [71].

Another example of Nepal there the Ministry of Education initiated a **National Adult Women's Literacy Program**. This was designed to help rural women in particular to achieve basic literacy in Nepali language and numeracy skills. Broadcasting address topics that are critical to women's lives, for example, preventing diarrhea, avoiding common diseases, getting drinking water, family planning, loan systems and women' s rights [72].

In Pakistan same type of supportive system can be introduced for the training of women on basic numeracy and literacy skills which facilitates their management of household income and increases opportunities for their children. To make this idea possible it is important to include the Ministry of Education, radio stations, local organizations, women's groups, parents, and elders to ensure sustainability and community engagement for programming.

5.3.4 Education for Illiterate Adults

In Ethiopia community radio (IRI) used for education of Illiterate adults. Adults were organized into small listening/learning group meetings in houses. It was named as **"schools"**. Its basic aim was to offer fundamental, integral education which goes beyond simple reading, writing, and cognitive skills and tries to change the passive and dependant attitude of people, creating a deepening of their sense of dignity and self-worth, and turning them into **'new men and women'** [33]**.**

As we all know that crime rate is rising day by day in Pakistan. According to one survey mostly illiterate young adults are involved and used for criminal activities. Community Radio (IRI) broadcasting can help them to recognize their own value, their dignity and help them to utilize

their capabilities in positive direction. Radio Schools can be considered as most widespread strategy, which will be applicable to improve literacy and basic education which in turn provide awareness almost completely about the political, social and physical developmental aspects. Also support to keep themselves safe from drugs, smoking and other illegal actions.

5.3.5 Education for Less Skilled People

Most people's learning throughout their life spans is informal; occurring in family, community and work settings and much of what they also learn is by means of non-formal education [73]. Radio has been, is and for sure will remain a fundamental medium for the transmission of information. It is also widely accepted that radio stations have a fundamental role in society in terms of the potential for the provision of education, particularly adult education. From past researches we consider an example of **Kottoner 98FM.** That has been operating from the heart of **Cottonera** since **1996**. On aired programs consists of cooking tips, washing clothes tips, farming/gardening tips, stitching/knitting methods, tips for starting new small business and many others programs for skills improvement [74].

In Pakistan there is a great need of such programs broadcast. It helps individuals and groups to face economic, technological and social change, improve their health and life expectancy, achieve greater self-efficacy, self-confidence, well-being and happiness, and develop shared norms and values. Part of being an effective facilitator of informal learning (and non-formal education) involves understanding how adults learn best.

5.3.6 Education for Handicaps

A community radio station exists to offer access to the airwaves and opportunities for self-improvement to those who need it most. It is sad that even in the 21st Century that all too often

means people living with disabilities. Community radio offers enormous opportunities to disabled people. According to the rule described in Community Radio Toolkit, a service provider as an employer, your station is legally bound to comply with the **Disability Discrimination Act (DDA).** In simple terms, this says that you must not discriminate against a disabled person (described as someone with "a physical or mental impairment which has a substantial and long-term adverse effect on his ability to carry out normal day-to-day activities.") and that you must offer the same access and opportunities to disabled people that you do to everyone else [75].

Schools can only do that they generally focus on physical and occupational therapy, and educational programs to help children with disabilities function at the highest level possible. Beyond that, very few opportunities exist that target an increased quality of life by providing emotional, physical and social enrichment. In Southeast Michigan, The Next Idea is Michigan Radio's project devoted to new innovations and ideas that will change their state [76]. This segment originally aired on **Nov. 14, 2016.** Leah Ketcheson is operations director of Light Up, founder of Spectrum of Sports, and adjunct faculty in Education at Wayne State University.

RPH Australia, the peak body for the **Radio Reading Network (RRN)** serving people with a print disability**. 4.8 million** Australians, or **22%** of the total population, live with a print disability. This represents an increase of over a million Australians since **2007** [77] [78].

Follow the same idea in Pakistan. Although lots of schools working for the education of especial children. Still there are many people having print disability. To overcome their problem Community Radio (IRI) can be helpful. Through radio learning we can develop self-confidence, relief from pain, provide them respectable place in society, and for elders we can provide ideas to

make their own future. Help them to learn different skills. So, they could easily earn for themselves as well as for family.

5.3.7 Education for Labors

Federal Member for Grayndler Anthony Albanese delivered the news at FBi Radio's studios in Sydney. He said that *"Today, we're announcing that if Labor is elected on 2 July, we'll reverse the cuts that Malcolm Turnbull has made to digital community radio services. We understand how important community radio is, you've got about 5 million people right across the country listening to more than 440 community radio services every week."* [79]. **Community Broadcasting Association of Australia (CBAA)** Chief Executive Officer Jon Bisset welcomed Labor's support and made a commitment.

Labor Express Radio was introduced in Chicago that cover weekly labor news and current affairs radio program that broadcasts every **Monday** morning on **WLUW 88.7FM**, a formerly-independent community radio station in Chicago which had reverted to its original status as the radio station for **Loyola University in Chicago**. It was Chicago's only **English-language** radio program devoted to issues related to the labor movement (Radio Chamba, also on WLUW covers the labor movement in its **Spanish-language broadcast**) and one of only a handful of such programs around the country. Labor Express covered local, national and international labor news. As well as **Labor Community Radio Project** was started in Africa [80] [81].

Pakistan is among those developing countries where population growth is fairly high. Male labor force participation rate is touching to **100%** in some age groups, whereas female labor force participation rate is still lower than **30%** in some groups [82]. In coal and other mines radio is playing its role for communication in and outside the mines, duty timings and for conveying

important messages. Community Radio (IRI) will help workers with mental and other health problems, guiding them about new job opportunities, Safety guidance, broadcast technical details about tools and machinery usage, confidence building Etc. [83].

5.2.8 Model of Different Prospects of CR-IRI
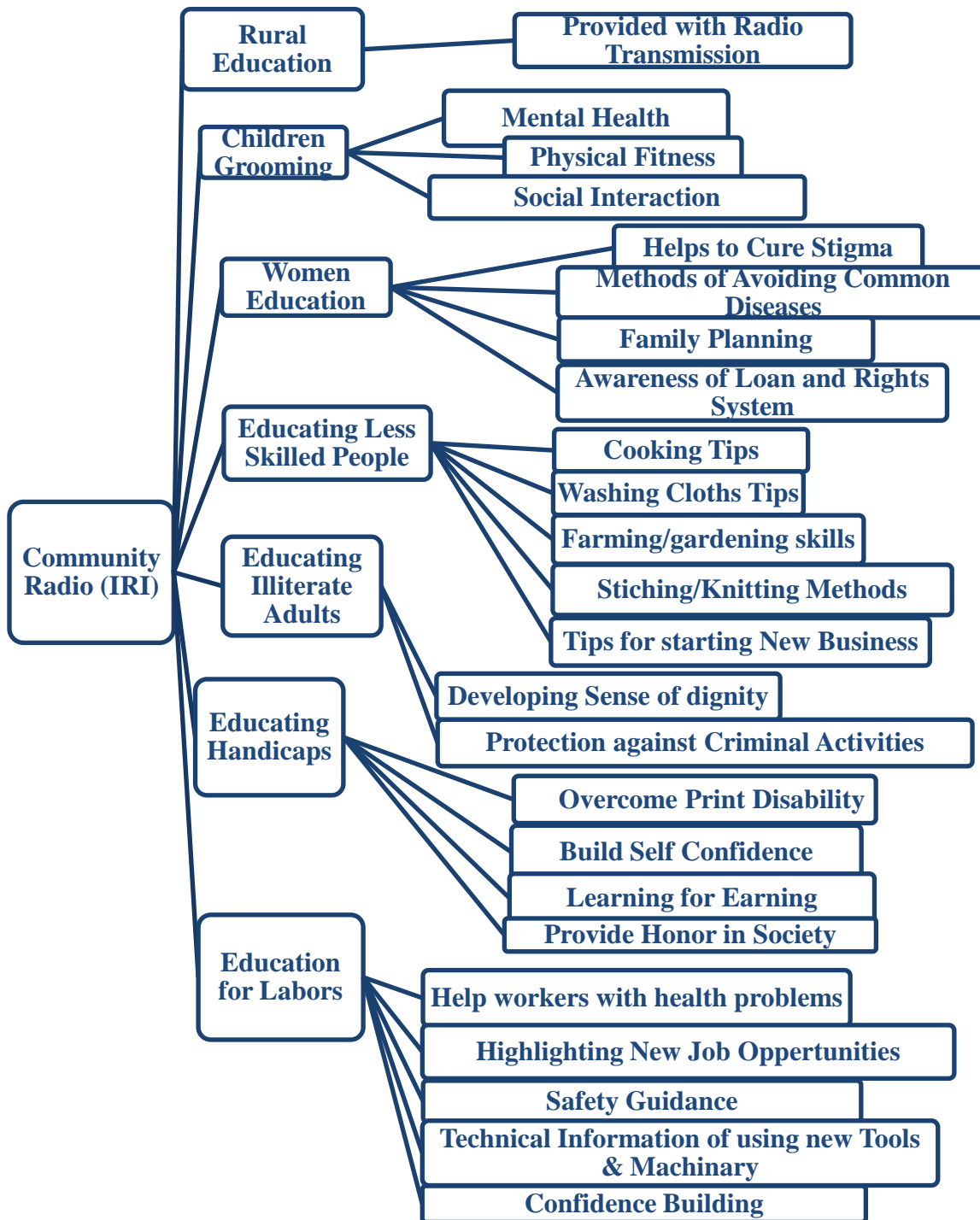
Figure 9 Model Showing Uses of CR-IRI in Different Prospects

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Appendix-I (Survey Questionnaire)

Certificate: Questionnaire related information will not be shared with anybody; this survey is conducted purely for research purposes and will not be disclosed. (Only of <u>2 Pages</u>) The questionnaire is adapted from different resources. [63] [64] [65] [66] [67]*

* (Resources contain model questionnaire survey conducted in India, Questions from CR tool kit, Hand books, Research papers etc)

The study is descriptive i.e. survey type. The population is the students of universities. It is designed on the basis of Interactive/Information Communication Technology (ICT) model.

Gender: ☐ Male ☐ Female   **Age:** ☐☐

<u>**Awareness Check**</u>

1. Education of the respondent: Instruction: ***TICK ONLY ONE***

☐ Under Graduate   ☐ Technical (Diploma/IT)

☐ Graduate   ☐ Post Graduate

☐ Professional (MS, MBA, PhD)   ☐ Others (Specify) _____

2. What is your major?   Instruction: ***TICK ONLY ONE***

☐ Engineering   ☐ Bio Informatics/ Bio Sciences

☐ Management Sciences   ☐ BS (Electronics, CS, Physics)

☐ Technical (Diploma/IT)   ☐ Others (Specify) _____

3. Do you have a Mobile?   ☐ Yes   ☐ No

4. Does your Mobile Phone have a Radio and you use it?   ☐ Yes   ☐ No

5. Where do you usually listen to the Radio?   Instruction: ***TICK AS MANY AS APPLICABLE***

☐ Home   ☐ Traveling /Commuting

☐ Work Place   ☐ Others (specify) _____

6. What do you like most about the Radio Channels you listen to?   Instruction: ***TICK AS MANY AS APPLICABLE***.

☐ Presenters/RJs/Anchors   ☐ Information about new things

☐ Good Music   ☐ News

☐ Interactive radio educational programs   ☐ Sports coverage

☐ Information updates (traffic, market prices etc)   ☐ Others (Specify) _____

☐ Information about local community problems

(**Note: Interactive Radio Instruction (IRI)** turned a normally one-way technology into a tool for active learning in and outside the classroom, continues to be an attractive educational strategy. This methodology is spread in many educational fields like Health, Mathematics, English, Spanish, Science, Environmental Education, Children Grooming and Adult basic education.IRI is serving as a tool to improve the quality of education).

<u>**CUST FM Section**</u>

1. Are you aware of FM broadcasting in Capital University of Science and Technology (CUST)?

☐ Yes   ☐ No

2. Have you ever tuned <u>FM-97.6</u>, working in Capital University of Science and Technology (CUST)?

☐ Yes   ☐ No

3. Which type of IRI programs you might be interested to listen from your University?

☐ Daily Lectures   ☐ Sports /Audio Seminars

☐ University Recreational Programs   ☐ Daily Fitness Tips

☐ Anxiety and Depression Relief Programs   ☐ Mental Grooming

☐ Carrier/ Job Alerts   ☐ Programs against Social Envy

☐ Protecting Youth from Drugs & Criminal activities   ☐ Buses Routs Plans/Timings

☐ University News Alerts   ☐ Others (specify) _____

How to check the Feasibility of CR-IRI in universities for youth learning and grooming?	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Community Radio **(CR)** can be a **low cost solution** for improving the classroom transactions and learning outcomes.					
Community radio can be a **faster** source of communication and knowledge transfer in universities of Pakistan.					
Radio programs can supplement the written materials of books and hand notes.					
(IRI) methodology in community radio is useful for making information mobile and worldwide.					
IRI should provide guidance, discussion on syllabus of educational institutes and subject matter for the students.					

You have **access** to community radio through your university.					
Radio, allow students to listen, discuss and participate in educational programs.					
You need the implementation of IRI in formal universities with teachers, as well as through informal community learning centers using trained facilitators.					
Radio programs can show positive impact on your life in terms of education, income, job, health, grooming skills etc.					
It will be **feasible** and easy for university students to have learning from radio.					
You think that radio increases the **effectiveness** of learning process.					
Information sources like T.V and internet were well selected, credible and sufficient to provide educational knowledge and grooming.					
You **need** Radio broadcast centers to be developed in educational institutes.					

Appendix-II (Software Used)

SPSS

SPSS stands for **Statistical Data Processing and Analysis Software**. It can be used for easy to complex data analysis as well as from beginning to advance levels. For the analysis of complex data related to social sciences, engineering, medical etc. SPSS is considered as common and mostly used statistical software.

Now we will describe the physical introduction of SPSS, for the clearance of this question that what SPSS actually is? When you firstly open the SPSS in window and you are not much familiar to the SPSS. You can type the new data or edit the existing data or can open SPSS file that is already saved.
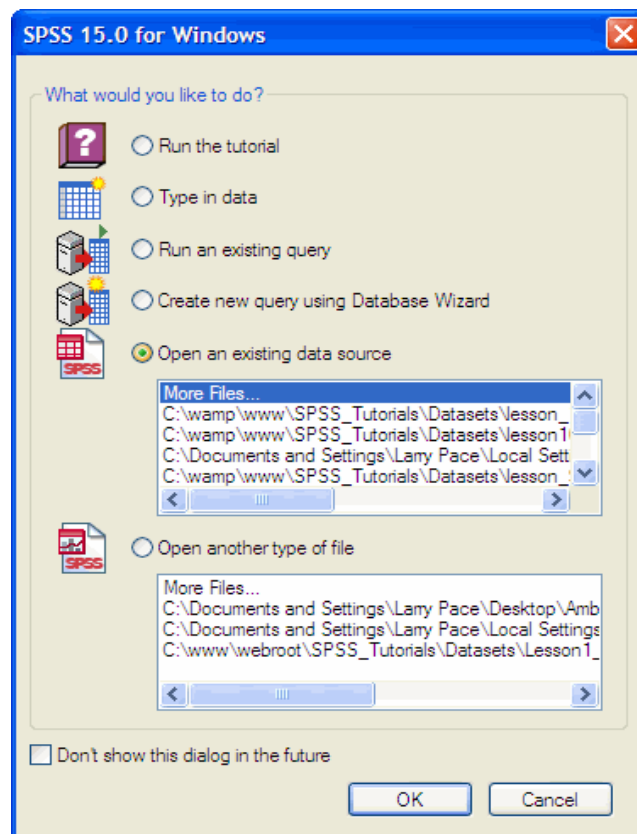
SPSS Opening Window

The Menu and Sub-Menu Bars of SPSS

Menu bar has 10 pull down menus, which are grouped of available SPSS commands. Some of these menus have sub-menus as well.
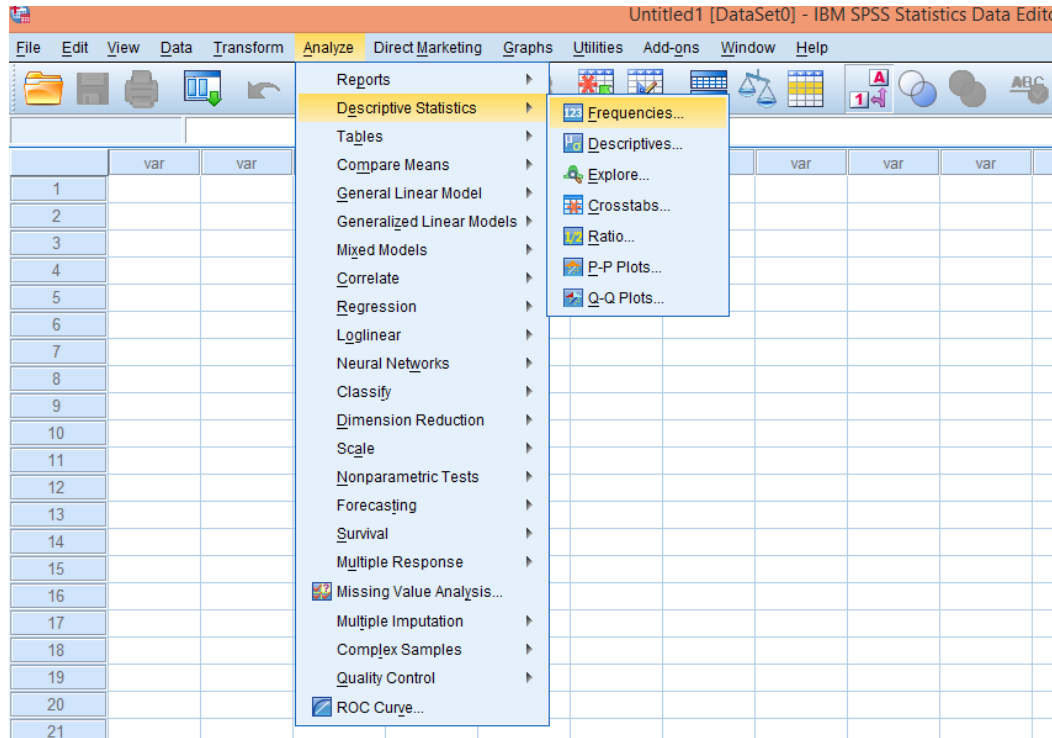
Menu and Sub-Menu Bars of SPSS

The Tool Bar of SPSS

SPSS has four types of windows which are used for different purposes. These are Data Editor (for variables and data both), Output Viewers (For results view), Charts Editor Window (for graphical representation of data) and the Syntax Editor (for manual enter of commands and coding). Following figures will clarify more;

Data Editor Window of SPSS

Output Viewer Window of SPSS
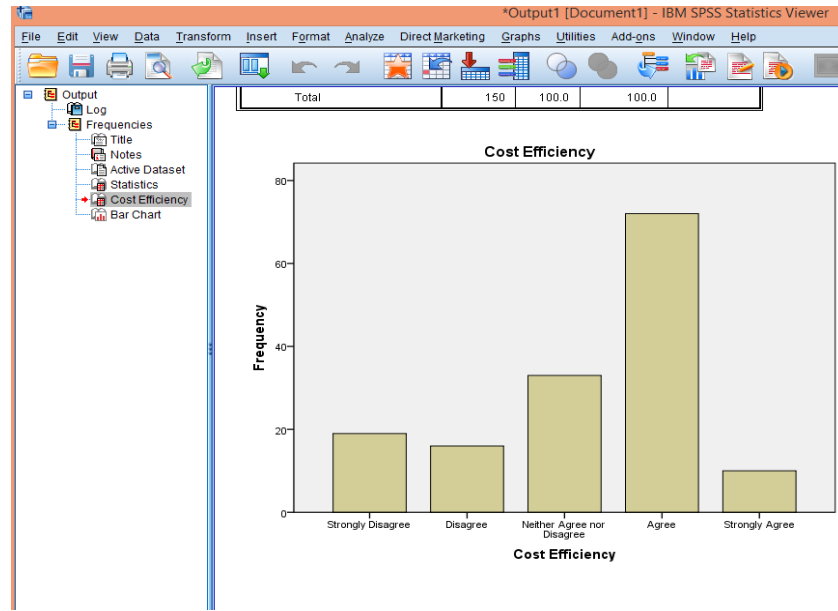
Chart Editor Window of SPSS
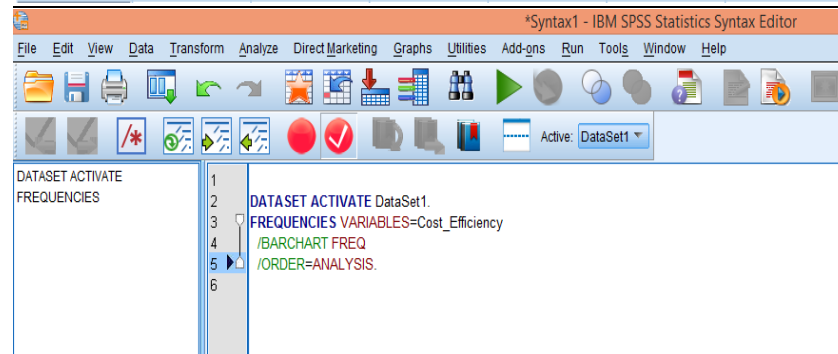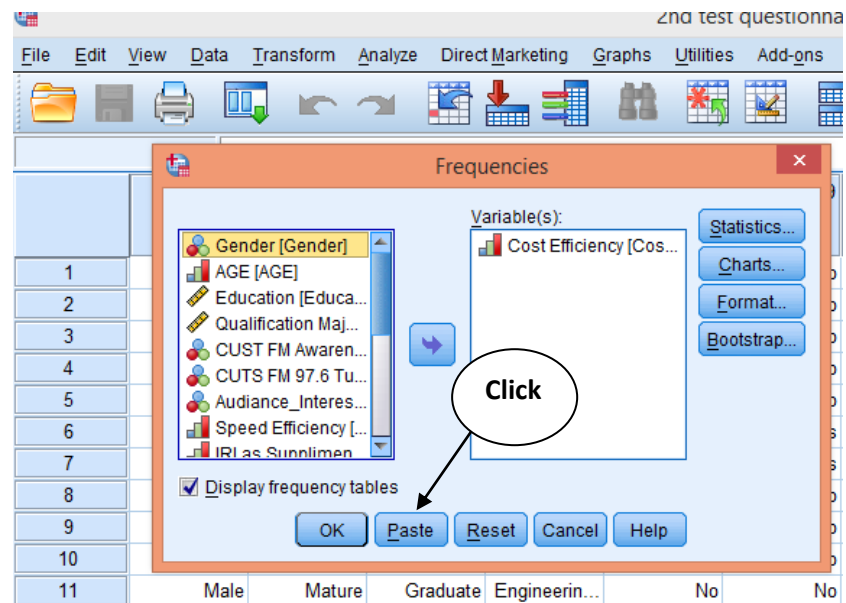
Syntax Editor Window of SPSS

Data Entry in SPSS

In SPSS data can be entered in two forms. One is in variable form and other one is in data form. For the beginners or new to this software we will guide easy steps to enter a data. But before that we want to clarify that important distinction should be made between two terms which might confuse you that are, **variable and value**. **Variable** is a classification scheme that can have several values. **Values** are the numbers classifications representing individual instances of the variables being measured.

Step1: Start with the variable view of window

|	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Gender	Numeric	8	0	Gender	{0, Female}...	99, 999, 9999	8	Right	Nominal	Input
2	AGE	Numeric	8	0	AGE	{1, Young}...	99, 999, 9999	8	Right	Ordinal	Input
3	Education	Numeric	8	0	Education	{1, Under Gr...	99, 999, 9999	8	Right	Scale	Input
4	Qualificaton...	Numeric	8	0	Qualification M...	{1, Engineer...	99, 999, 9999	8	Right	Scale	Input
5	CUST_FM_...	Numeric	8	0	CUST FM Awar...	{0, No}...	99, 999, 9999	8	Right	Nominal	Input
6	CUST_FM_...	Numeric	8	0	CUTS FM 97.6 ...	{0, No}...	99, 999, 9999	8	Right	Nominal	Input
7	Audiance_In...	Numeric	8	0	Audiance_Inter...	{1, Daily Le...	99, 999, 9999	8	Right	Nominal	Input
8	Cost_Efficie...	Numeric	8	0	Cost Efficiency	{1, Strongly ...	99, 999, 9999	8	Right	Ordinal	Input
9	Speed_Effe...	Numeric	8	0	Speed Efficiency	{1, Strongly ...	99, 999, 9999	8	Right	Ordinal	Input
10	Suppliment...	Numeric	8	0	IRI as Suppliment...	{1, Strongly ...	99, 999, 9999	8	Right	Ordinal	Input
11	Most_Intera...	Numeric	8	0	Most Interactive	{1, Strongly ...	99, 999, 9999	11	Right	Ordinal	Input
12	Source_of_...	Numeric	8	0	Source of Guid...	{1, Strongly ...	99, 999, 9999	13	Right	Ordinal	Input
13	Accessibility	Numeric	8	0	Accessibility	{1, Strongly ...	99, 999, 9999	8	Right	Ordinal	Input
14	Life_Long_L...	Numeric	8	0	Life Long Learni...	{1, Strongly ...	99, 999, 9999	13	Right	Ordinal	Input
15	Implementat...	Numeric	8	0	Implementation...	{1, Strongly ...	99, 999, 9999	8	Right	Ordinal	Input
16	Impact_of_IRI	Numeric	8	0	Impact of IRI	{1, Strongly ...	99, 999, 9999	8	Right	Ordinal	Input
17	Feasibility	Numeric	8	0	Feasibility	{1, Strongly ...	99, 999, 9999	8	Right	Ordinal	Input
18	Usability	Numeric	8	0	Usability	{1, Strongly ...	99, 999, 9999	8	Right	Ordinal	Input
19	Adoption	Numeric	8	0	Adoption	{1, Strongly ...	99, 999, 9999	8	Right	Ordinal	Input
20	Need_of_Au...	Numeric	8	0	Need of Audiance	{1, Strongly ...	99, 999, 9999	13	Right	Ordinal	Input
21											
22											
23											
24											

Variable view of SPSS

Now I will explain the terms used in Variables. Defining proper variables is the most important step in SPSS.

Step2

Name: In this column names of variables will be defined which will be shown in the heading bar of data view. For example, if you want to add gender, then simply write "Gen" or "Gender" or any other abbreviation/name you like to give. Name of variables should be unique, can contain symbols and numbers as well.

Type: Next column is representing the type of variables like numeric, string, etc. **40 characters** is the maximum width of numeric variables and **16** are the maximum **decimal positions**. Following figure will clarify more,
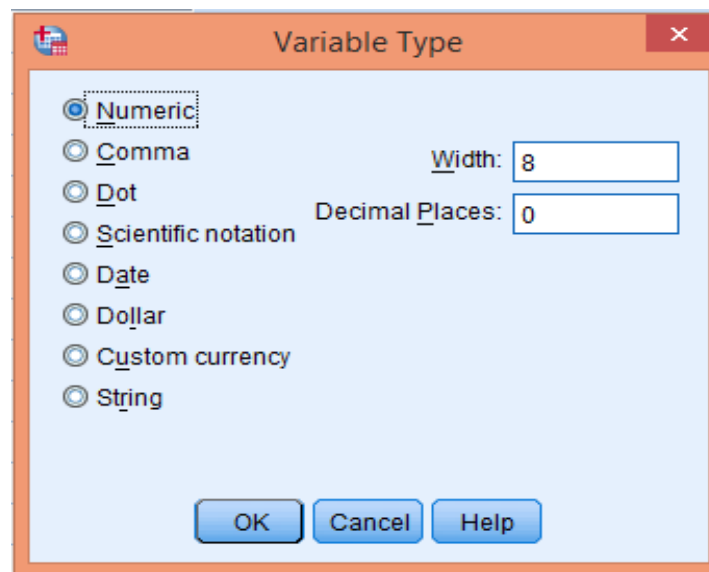
Variable Type Defining Window in SPSS

Width: The number of characters SPSS will allow to be entered for the variables. For a numerical value with decimals, this total width has to include a spot for each decimal, as well as one for the decimal point.

Decimals: If more decimals have been entered by SPSS, the added information will be retained internally but not be displayed on screen.

Label: It is used to identify in detail that what a variable represents. It has a limitation of **225 characters** and may contain punctuation and spaces.

Value: It is basically the assigning of numbers for categorical data. Instead of providing a huge description during data entries just define the codes or numbers. For example, **1** represents the male respondents and **0** represent female respondents. Figure will clear your concept.
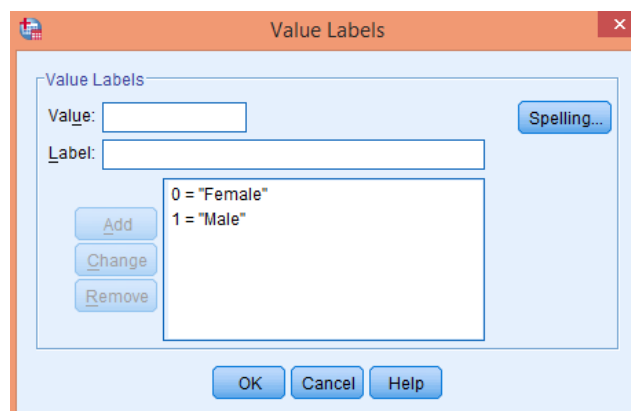
Value Label Window in SPSS

In Data View we can see the following changes by clicking "toe tag" option in tool bar represented as which switches between the numeric values and their labels. Figure shows,

Variable Window and Value Label in SPSS

Missing: It tells that which data is treated as missing in SPSS.

Missing Value Window in SPSS

Measures: The most important part of variable defining is type of measure i.e.

- Scale

- Nominal

- Ordinal

SPSS does not differentiate between interval and ratio levels of measurement. Both of these qualitative variable types shown together as **"Scale".**

Measurement Level	Data Type			
	Numeric	String	Date	Time
Scale (Continuous)		n/a		
Ordinal				
Nominal				

Matrix of Measurement Level and Data Type in SPSS

If the answers are real numbers like what is your age? This is called **Ratio Scale** and if the difference between two successive possible answers is same e.g. the temperature scale and annual income is called **Interval Scale**.

Categorical variables are also named as **Nominal Variables**, these variables are not in proper order but they are mutually exclusive. These are basically the code assigned but we cannot measure them. For Example,

- Gender (male, female)

- Hair color (black, blonde, brown, red, etc.)

- Font type (times new roman, Arial, Calibri, etc.)

An **Ordinal Variable** is similar to a categorical variable. The difference between the two is that, there is a clear ordering of the variables. For Example,

- Education (less than high school, high school, Associates degree, undergraduate, graduate, Professional, etc.)

- SES (Socio Economic Status) (e.g., low, medium, high)

Step 3: After defining the variables, start entering data in data view window according to your sample size. Now next step is to analyze the data to evaluate results.

Data Analysis in SPSS

Data analysis in SPSS in a lengthy process but, here I am briefly telling the basic process to analyze your data. Every type of data is analyzed through **Analyze Menu.**
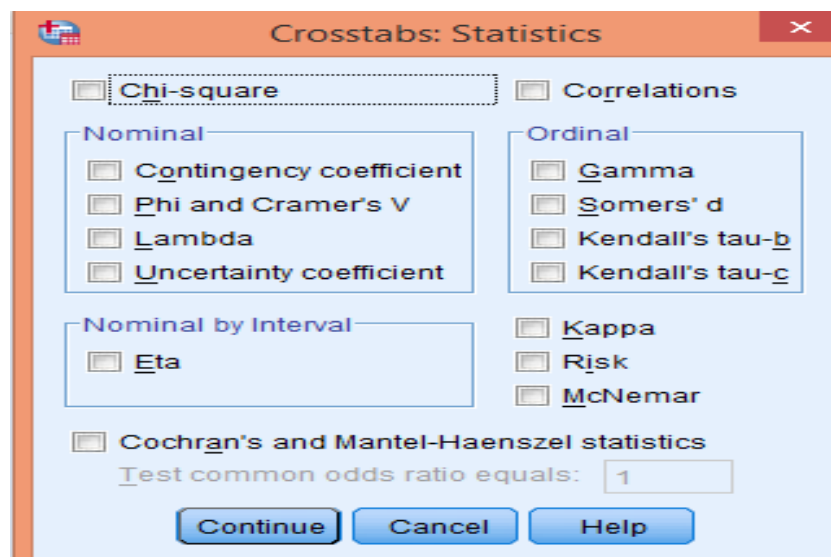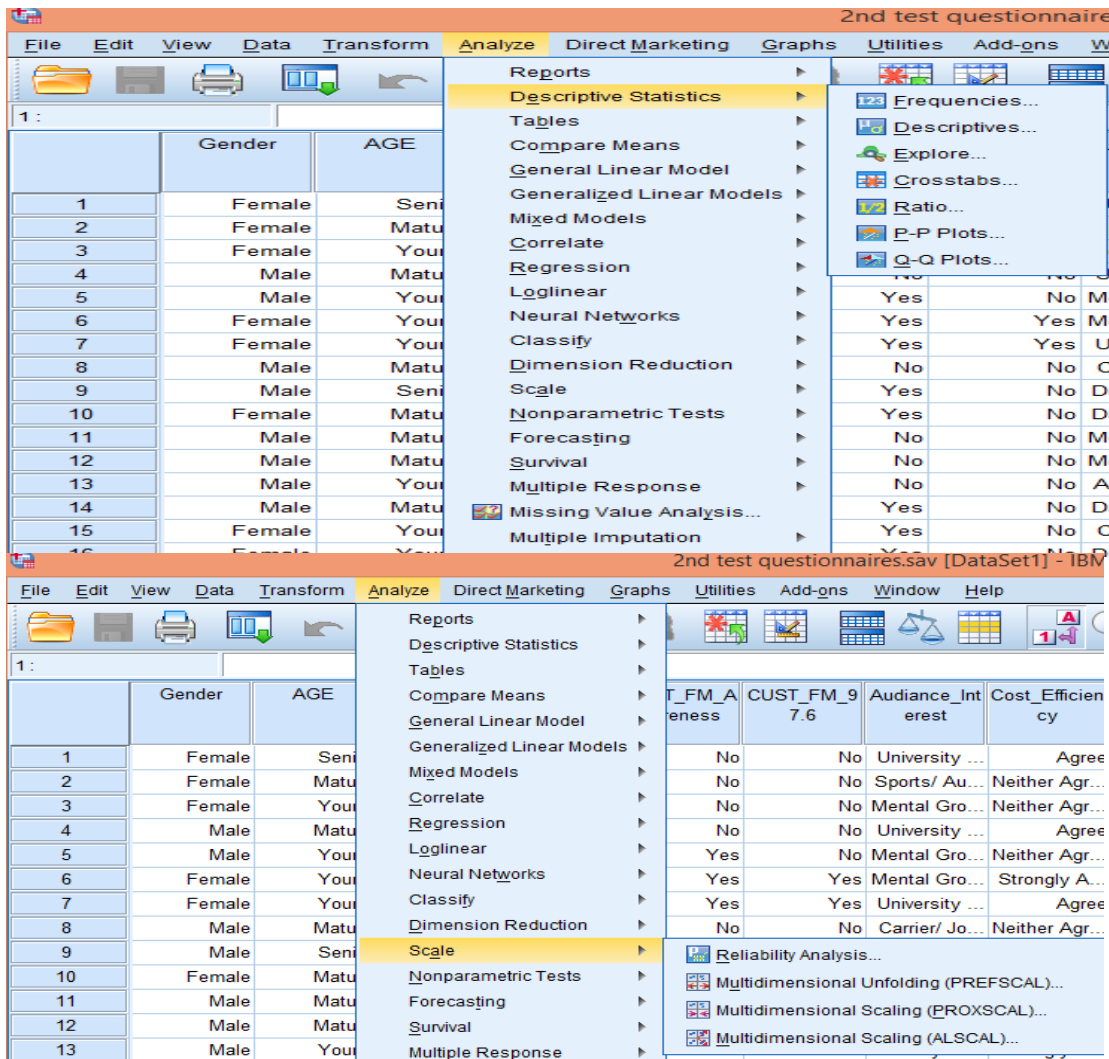
Data Analyze Window in SPSS

Descriptive Statistics are used if anyone wants to analyze the questionnaire findings the individual response of respondents regarding likert scale (Strongly Agree to Strongly Disagree).

Scale tab is used to do the Reliability Analysis of questionnaire whose authenticity depends upon the value of Alpha (α). As well as **Correlate** sub-menu is used to find the correlation between two variables.