

Public Access to ICT and Employment: Case of the Impact of Public Access to ICT Skills on Job Prospects in Rwanda

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Abstract — The modern Information and Communication Technology (ICT) is widely seen by countries as a major drive for their socio-economic development. This is demonstrated by huge investments put in ICT projects. Despite such investments, less is done to evaluate the impact of the access to ICT in specific sectors such as employment. This paper presents a study which intends to evaluate the impact of ICT skills acquired from public access ICT venues on job prospects in Rwanda. A mixed method approach is adopted to carry out the investigation. The study is in progress such that the paper does not present any findings, but the study is expected to contribute to the improvement of our understanding of the impact of public access to ICT and to have a potential public policy impact.

Index Terms— ICT, Impact, public access, skills

I. INTRODUCTION

In this 21st century, countries have vowed to exploit modern information and communication technologies to accelerate their socio-economic development. Rwanda is an example of such countries as described in its ICT-led socio-economic development plan [1]. One of the major efforts for the countries to achieve this objective is to equip the population with ICT skills. While some people acquire ICT skills through a formal education in schools, due to various constraints a part of the population acquire or supplement ICT skills from public access ICT venues such as cybercafés and professional ICT training centres. In Rwanda, this is demonstrated for example by the program undertaken by the department of Information Technology of the Rwanda Development Board (RDB) aimed at establishing community telecentres throughout the country [2].

The public access to ICT is reported to be very important in the employment sector. For instance, a research initiative that examines the impact of free access to computers and the Internet in public libraries in USA reported that activities related to employment were observed as the third highest use

for library computer users [3]. People without employment use computers in public access ICT venues during their search for job, and those who are employed use public access ICT venues to perform some tasks of their employment. A public access ICT venue is a place where Internet and other ICT infrastructure are available and accessible to the public either for fee or for free. Regarding the use of public access ICT venues by people who are not employed, research shows that telecentres increase employment opportunities as some people establish their own ICT centres after getting trained in telecenters [4] while other users have high hope of getting jobs after acquiring computers skills from those venues [5]. However, different types of ICT skills acquired from these public venues are not identified and tracked for their contribution to the improvement of users' job prospects. Furthermore, telecentres have been extensively studied such that evaluation guidelines [6] have been produced for them while other types of venues have received less importance.

Despite a lot of efforts put in the adoption of modern information and communication technologies, very less has been done to evaluate the output of such huge investments. This paper presents a study in progress which aims at evaluating the impact of public access to ICT skills on job prospects in Rwanda. After this short introduction, section II describes this study by presenting the main research issues addressed by the study and the hypotheses in the study. Section III presents the methodology being used in this research, and finally section IV presents the conclusion in terms of the importance of this research.

II. THE CURRENT STUDY

The study presented in this paper intends to evaluate the impact of public access to ICT skills on the job prospects of public access ICT venue users. As explained in [7], there is a strong relation between the skills acquisition and the prospect for employment. The study by Okutsu [7] shows that people who have acquired some skills are highly influenced by these skills on the issues of desired occupation and job search. This relation shows that we cannot investigate the impact of the skills acquisition without first identifying the skills that are acquired. In this respect, our study addresses the following major research issues:

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- What ICT skills do users of public access ICT venues acquire from the venues?
- How does public access to ICT change the levels of users' computer skills?
- What impact do ICT skills acquired from public access ICT venues have on venue users' job prospects?

To answer the research questions derived from these major research issues, the study tests the following hypotheses:

1. ICT training and services provided at public access ICT venues further computer skills of venue users.
2. ICT skills acquired from public access ICT venues improve the job prospects of venue users: the ICT skills help users to get jobs or to set up their own ICT-based business.

III. METHODOLOGY

This study is a form of evaluating how an intervention produces particular results. In the context of this study the intervention is equipping people with ICT skills using public access ICT venues, and the expected results are the impact of these skills on their job prospects. The study adopts the Logic Model for its potential to perform such evaluation. In the logic model, key sequences in the flow from inputs through outputs to the expected outcomes are identified [8]. As shown in Fig. 1, the logic model of the Public access to ICT skills and job prospects includes as inputs the ICT infrastructure and the instructor. These inputs lead to activities of learning basic computer skills, communication and information search. The outputs from these activities include basic computer skills essential to get some kinds of jobs, skills for job search over the Internet, Internet-based communication that can help to get job opportunities information. These outputs in turn lead to outcomes such as searching and applying for a job, meeting ICT competences required for a job, doing ICT test required for a job, or planning own business as a result of ICT skills acquired. Finally, the analysis of the outcomes will reveal the impact of public access to ICT skills on job prospects; whether it leads to improved job prospects, with either people getting jobs or setting up their own ICT-based business.

A. Data collection strategy

A mixed method approach is adopted for data collection in this study. As our research questions are about identifying the skills acquired from public access ICT venues and their impact on job prospects, a case study where the skills acquisition and the job prospects are examined in real life context is very important. In this respect a qualitative data collection combined with a quantitative data collection followed by a statistical analysis are potential to answer the

research questions. Both quantitative and qualitative data will be used to benefit from the strength of each. For instance, quantitative data offer the certainty for generalisation while qualitative data help to confirm the relevancy of indicators to policy makers as explained by Becker et al [8].

Quantitative data collection

For evaluating the impact of public access to ICT skills on job prospects, two categories of people are targeted for field survey. The first category comprises people considered as public access ICT venue users; that is people who have acquired ICT skills from public access ICT venues and people who used public access ICT venues to supplement their ICT skills. The other category comprises people considered as non-users of public access ICT venues; that is people who did not acquire ICT skills from public access ICT venues and who are employed or created their own jobs. The last category includes people who got ICT skills from formal ICT education (in schools) and those who got ICT skills from informal practice outside of public access ICT venues.

Quantitative data will be collected using a questionnaire. We target 416 respondents for filling the questionnaire. This sample will comprise of people with age ranging between 18 and 65 years because we are pretending that most of users who benefited from ICT skills in the public venues are found in this category. During fieldwork, male and female will be given equal chance of being selected. Fieldwork will be conducted on one hand in public places where Internet and other ICT infrastructure are available and accessible to the public. Professional ICT training venues, Cybercafés, telecentres and public secretariats will be targeted organizations as the operators of these venues are likely to have acquired ICT skills from public access ICT venues. On the other hand, we will visit public and semi-public institutions as we are pretending that a significant number of people who benefited from ICT skills in public venues are employed in various institutions mostly occupying lower positions but which require using a computer. Such positions are for example receptionist, customer care officer and secretary. Target institutions are among others; ministries, public and semi-public companies, secondary schools, districts and provinces offices.

Purposive sampling¹ [9] will be used to select target people at the sampled places. The survey will only be guided by the purpose; people who acquired ICT skills. To make our sample representative and cover the whole country, target places and people are distributed as follows:

- All the existing 16 community telecentres distributed around the country will be surveyed and one person will be contacted at each telecentre.

¹ The primary consideration in purposive sampling is the judgment of the researcher as to who can provide the best and required information to achieve the objectives of the study (Kumar 2005:179).

- A sample of 10% of all secondary schools distributed around the country will be surveyed and one person at each school will be contacted. This will lead to 100 respondents. Schools will be sampled following a proportionate quota sampling with respect to districts.
- A sample of 100 cybercafés and public secretariats will be surveyed and one person at each venue will be contacted. 40% of the venues will be sampled from Kigali city while the other 60% will be selected from the other four provinces evenly. This distribution is due to a higher concentration of ICT-based activities in Kigali city compared to the other provinces.
- From public and semi-public institutions, 200 respondents will be sampled from 50 institutions. The selection of institutions will be such that all the districts and both urban and rural areas are covered. At each institution, four people including two public access ICT venue users and two non-users will be contacted.

Since we are using a purposive sampling, we will ensure that the questionnaire is filled by people who have acquired ICT skills and mainly those who acquired or supplemented ICT skills from public access ICT venues. Moreover, during qualitative data collection we will ask about the records of those trained in such venues and follow up on them. The data collection materials are designed such that they will capture the ICT skills acquired from public access ICT venues and their contribution to job prospects. This will allow us to compare the situations before and after the skills acquisition, and hence assess the impact against the right intervention.

Qualitative data collection

As emphasized by Yin [10], a case study investigates a phenomenon with its real life context. This study will use a case study approach by selecting some places and people for a deeper investigation. Some people in different categories including public access ICT venue users, instructors in public access ICT venues and policy makers will be selected and given an interview to find more data that will be analysed along with quantitative data.

In addition to the data collected through a field survey, secondary data sources will be used. Secondary data sources include policy documents and governments publications related to ICT diffusion and development in Rwanda, ICT training attendance records and publications on workforce and ICT skills development in Rwanda.

B. Data analysis

For measuring the impact of ICT skills on job prospects the “After only” approach will be applied. According to [11], the “after only” approach consists of carrying out a research when a program or intervention has been introduced or finished in the study area. Our study falls in this case as the impact

assessment will focus on people having already benefited ICT skills. The analysis will be performed on the three types of data: quantitative data collected through questionnaire, qualitative data collected through interview, and secondary data collected from documents. Some parts of interviews will be quoted and qualitatively interpreted. Content analysis method will be applied on data collected from secondary data sources. Tables and graphs will be used for presenting results and for correlation test between acquired ICT skills and job prospects. The data analysis will trace the following indicators from the data collected:

1. Number of people who have been informed about job opportunities via Internet
2. Number of people who have submitted their job applications via internet
3. People’s attitude on Internet-based communication while searching a job
4. Number of people who had ICT component in recruitment tests
5. Importance given to ICT component during recruitment tests
6. People’s attitude on ICT skills during recruitment test or job creation
7. Number of people who have created their own ICT based jobs as a result of having acquired ICT skills from public access ICT venues

The impact of public access to ICT skills is seen differently on different users based on other factors. Because of this, each of the aforementioned indicators will be tested and evaluated taking into account those factors of gender (female versus male) and social factors such as category of age, education level and origin of trainees (rural versus urban areas). The categories of age are determined based on our assumption on the influence of age on the type of skills sought and the type of employment most likely to be acquired. The categories of education level are determined based on our assumption on the ICT skill needs at different levels of education.

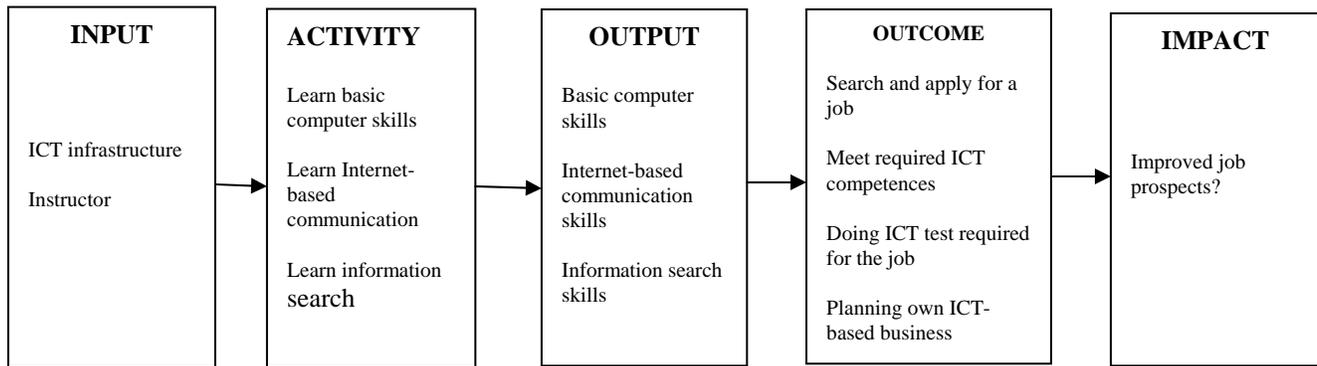


Fig. 1. The Logic Model for the public access to ICT skills and the job prospects

IV. CONCLUSION

This paper has presented a study in progress that aims at evaluating the impact of public access to ICT skills on job prospects in Rwanda. A mixed method approach has been adopted for this research: qualitative and quantitative methods are used to carry out the investigation. The study will contribute to our understanding of the impact of public access to ICTs and will have a potential public policy impact as it will show proven facts of how both positively and negatively the existing ICT policies and interventions are affecting ICT skills acquisition and the contribution of these skills to the improvement of job prospects. The chosen case-study based method has the potential to produce results that are convincing while communicating with policy makers for a potential public policy impact.

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