Effect of Demographic Variables and Utilization of ICT in Employment of Disabled

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Abstract: Most of the disabled people are faced with many physical, social and cultural problems. Social barriers deprive them from using civil and welfare utilities and social vulgar and inexpert attitudes toward the disabled keep them out from the social life and relations. Using ICT is one of the best ways for their participation in all cultural, social, political and economic issues. In recent years, with the emergence of the concept of telework, entrepreneurial process has also changed. As many jobs require attendance at a particular place or time, they are associated with restrictions. Entrepreneurship and consequently telework can provide an appropriate opportunity for disabled or those who temporarily suffer from physical injuries. This is possible only by using information technology services; because in the present age information technology has undertaken a leadership role and has overshadowed different dimensions of human life. Planning and especial policies for the disabled would be unsuccessful or very expensive without the knowledge and understanding of their needs. Therefore, aim of this research is studying Effect of Demographic Variables and Utilization of ICT in Employment of Disabled. Furthermore with regard to the type of disability and employment, using ICT and findings of this research, scientific planning can proceed in this area based on existing capabilities. The results of this study show that half of the sample case is unemployed. However, the percentage of unemployed deaf was lower than other groups. Despite laws for the employment of disabled, as the results show, a lot of people with disabilities are still unemployed. Furthermore, the results define the more need of deployment of strategies and programs for more access of disabled to ICT and also providing a good platform to familiarize them to this technology and to enjoy the benefits of it.

Keywords: Demographic variables, employment of disables, ICT

INTRODUCTION

In today's world as we walked toward the mechanization, urban growth and development of urban management, face to face direct relations cannot be responsive to our needs. Issues such as increasing urban population, lack of resources and infrastructure, demand to increase public welfare and issues as such in one hand and development of modern technologies, especially information technology and its application in other cases and moving toward the electronics on the other hand; make it more vital and necessary to use information and communications technology (Shiri, 2005).

There are two important assumptions in the role of ICT: First is the development of this technology that makes rapid changes in all areas of life. Second is the performance of ICT to unify and standardize culture. (WYP, 2003). The role and functions of ICT as the central issue of global developments is undeniable. ICT as one of the most comprehensive development tools and infrastructure provides needed fields for information management through production, process, distribution and exchange of information. To achieve a coordinated and comprehensive framework of accurate information, necessary tools for the process between production and exchange of information shall be provided for its users. Thus with a complete understanding of the components and structures forming ICT should create or strengthen the necessary foundation for the expansion of employment by this technology.

The current study seeks to examine the ways of employment for disabled people through ICT according to demographic variables in Tehran. Development of ICT skills of disabled people leads to increase of employment in the disabled. So enjoyment of disabled people of ICT can be a very important issue. Enjoyment of universal and comprehensive training is only possible by using ICT facilities. Teacher training evaluation and equipping the educational centers with ICT facilities is required.
THEORETICAL FOUNDATIONS

Today, many disabled people still face barriers due to discriminatory actions, attitudes caused by ignorance and other barriers for outside activities, which prevent them from full participation in life activities. Limited access to education in many parts of the developing countries prevents many handicaps to learn skills and knowledge for a normal life. This condemns them to live with poverty, deprivation and misery, which significantly lowers their overall quality of life.

A new way to support people with disabilities is to focus on the goal of independent living. Over time, this new approach should collect the available funds. In order to assess the various forms of support of disabled people, their needs should be identified through various evaluations and then take action to solve them. (Improving the life chances of disabled people, 2005). Using computer can provide independence in activities of daily life and employment of this disabled group. Also computer hardware needs some improvements to be accessible for disabled people. Given that these groups of people are with different needs, it is important to evaluate abilities and provide guidelines for the particular devices. (Arjomand, 1994).

When necessary tools are provided for disabled to realize their potential abilities, both them and the society will benefit. But achievements of the twenty-first century and centuries before in improving the lives of disabled people are undeniable. Medical advances have greatly reduced the number of people who are born with disabilities and also people who suffer permanent injuries as a result of illnesses or accidents. Medical spectacular advances have now made it acceptable to expect many of disabled people enjoy a healthy life. Disabled people see themselves as the equal partners with healthy people and wish to enjoy the full rights of others as humans with full functionality. According to the social definition of disability, disability is considered as all the factors and situations that prevent a group of people of integrity and full participation in society, these people now want to participate in decision making processes as equal members of society and their specific needs must be considered.

Today, rehabilitation tends to personal care and relies on family and community instead of using the services of specialized agencies; it aims to help the disabled to stay in the family and in a normal social environment. In this way the disabled are allowed to involve in the design and implementation of their rehabilitation programs and thereby even the disabled people with severe disabilities largely will be able to live independently. To ensure the participation of this group in social and economic activities, social and physical factors that may hinder their use of social services shall be identified and removed. To enjoy educational services, handicapped children should attend regular schools and equal employment opportunities with other people shall be provided for them. To achieve these goals, governments must begin to prepare long term plans as a complement to national policy for social and economic development. These actions need to plan and organize activities in all relevant areas.

Disabled people are not usually able to work for several reasons. The main reason is the attitude of employers towards the issue of disability. In the past, employers believed that a disabled person is unable to work, unlike a normal person. In today's world, big companies like IBM, Dupont and Control Data are organized to simply use disabled in productive tasks. One of the strategies for their employment is telework. Telework is a way of doing tasks through computer and telecommunications equipment which creates new jobs and today includes a wide range of jobs from operators to managers. In fact it should be stated that the crystallization of application of ICT in the employment is to create new job opportunities for people, especially women and people with disabilities. Some of the main reasons of turning a large range of people and the disabled to telework are: to raise efficiency of employees, increase time spent with family, decrease within urban and suburban trips, weather conditions in some cold or tropical regions, reduce traffic and as a result reduce air pollution and noise pollution.

No Supervision has been taken on the employment of this group in various departments. While one of the duties of the Welfare Organization is providing insurance for employers who employ people with disabilities, due to failure of this organization in financial support of the employers and not monitoring their performance, they either do not show much interest to assign disabled people to work or do not pay them fully. Apart from financial problems and unemployment of disabled, their families who are their nurses are faced with many problems. While welfare organization has reported that the maintenance costs of a disabled in boarding centers is about 240 to 270 thousand Tomans, the salaries paid to the spouses of people with disabilities for their care is not more than 55 Tomans. So because many families do not afford to take care of their handicaps, inevitably have to send them to the maintenance centers. The results of this study indicate that about 50 percent of people with disabilities in all three groups have no income and those with income are paid less than 5000 Tomans.
Information and communication are two basic tools needed for each entrepreneurship activity. Entrepreneurship in isolation and without support from institutions, organizations and individuals is not possible. Entrepreneurship involves the discovery of a social need and discovery of social needs involves discovery of community, its needs and its economic, social and cultural context. In identifying the need for any entrepreneurial activity, the theoretician should have an insight towards the environment and knows which solutions are presented in other parts of the world to solve the needs. Certainly recognizing the needs and providing solutions will not be possible without information. Thus, information and knowledge, just like communication, are required for any entrepreneurial activity.

Information technology leads to significant changes in the meanings of space, place, distance and time as factors influencing "access". However, since the real space (physical) has been targeted by space planning and optimization of the urban environment, today attention to cyberspace shall be included in the must doing list of successful management and planning for urban optimization, planning and design.

As it seems, lack of access to information and communication technologies is one of the causes of backwardness and weakness of nations. In a deeper look, the absence of infrastructure of this technology for disabled people who are with physical weakness doubles the retardations. Application of ICT is one of the best methods to empower the disabled to participate in all cultural, social, political and economic issues. Disabled people due to inability or disability, loose many of their employment opportunities in society. Hence ICT as a bridge can cover this gap and miraculously help people with disabilities to move with an appropriate and accurate method. According to experts the best solution is to provide an environment for optimal access of these people to information technology resources. In this regard the current study seeks to examine the ways of employment for disabled people through ICT according to demographic variables in Tehran.

Research background: Bell and Heitmueller, (2005) in a paper titled "The Disability Discrimination Act in the UK: Helping or Hindering Employment amongst the Disabled" Mentioned the enactment of the Americans with Disabilities Act (ADA) in 1990 has triggered a substantial academic debate about its consequences on employment rates of disabled people. This study provided robust evidence that, similar to the ADA in the US, the DDA has had no impact on the employment rate of disabled people or possibly worsened it.

Lynk (2007) in a study titled "Disability and Work: The Transformation of the Legal Status of Employees with Disabilities in Canada" expressed that the rise of the accommodation duty and particularly the accommodation rights of employees with disabilities, has been the greatest and only innovation within Canadian labor law over the past twenty years. This article examines the dismal employment status of employees with disabilities in Canada, traces the emergence of the Supreme Court of Canada and critically examines the case law on disability accommodation by labor arbitrators, human rights tribunals and the common law courts.

Zissy et al. (2007) in a study titled "Greek Employers' Attitudes toward Employing People with Disabilities: Effects of the Type of Disability" surveyed the employment situation in Ireland Firms. They mentioned that the aim of this cross-sectional study was to answer two central research questions:

- What are Greek employers' attitudes to employing people with a range of disabilities
- Do employers' attitudes differ according to the type of disability? The study results showed that employers' attitudes differed depending on the type of disability; most respondents believed that it would be easier for people with diabetes, Thalassemia or renal insufficiency to be employed than those with schizophrenia, blindness, learning disability or depression

Jolls and Prescott, (2004) in a paper titled "Disaggregating Employment Protection: The Case of Disability Discrimination" investigated the effects of employment protection law and protective legislation as a whole. This study exploits state-level variation in pre-ADA legal regimes governing disability discrimination and separately estimates the employment effects of each of the ADA's two primary substantive provisions. Strong evidence was found that the immediate post-enactment employment effects of the ADA are attributable to its requirement of "reasonable accommodations" for disabled employees rather than to its potential imposition of firing costs for such employees. Moreover, the pattern of the ADA's effects across states suggests that declining disabled employment after the immediate post-ADA period may reflect other factors rather than the ADA itself.

Tefft (2012) in a study titled "Mental health and employment: The SAD story" explored the relationship
between health-related quality of life measures the employment status in light of a constructed index related to Seasonal Affective Disorder that depends only on latitude and day of year. The relationships between the darkness index and HRQOL measures are stronger overall for women than for men. Inclusion of both the darkness index and the HRQOL measures in models of employment status determinants provides some evidence that the former operates through the latter in predicting a lower likelihood of employment. When specifying the darkness index as an instrument for HRQOL, each additional day of poor mental health per month leads to a 0.76 percentage point increase in the probability of unemployment among women.

**FINDINGS**

First hypothesis: There is a significant relationship between the average employment rates of physically handicapped-deaf and blind and use of information and communication technology. Using ANOVA test, the employment rate of disabled people using ICT is examined (Table 1). For test evaluation, the below statistical hypotheses are assumed:

$$H_0: \mu_1 = \mu_2 = \mu_3$$

$$H_1:$$ The minimum average of employment by ICT is not the same in two groups of disabled people.

According to the (Table 1) the significance level is 0.03 which means that in more than 95% of significant level it can be concluded that average factors are different in the mentioned disabled groups of the study. In other words, there are significant differences between averages of groups. As can be seen, the between group variance of the research is resulted by the average variance of using ICT in three disabled groups of physical handicaps, deaf and blind.

By Tukey's "post experience" test it was studied that which of the disabled groups had different averages. The results are shown in (Table 2).
Table 3: Results of Tukey test, the difference of average employment using ICT in the study sample

<table>
<thead>
<tr>
<th>Disability groups</th>
<th>Number</th>
<th>Subnet</th>
<th>For aloha = 0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical handicapped</td>
<td>30</td>
<td>0.208</td>
<td></td>
</tr>
<tr>
<td>Blind</td>
<td>30</td>
<td>0.335</td>
<td>0.335</td>
</tr>
<tr>
<td>Deaf</td>
<td>30</td>
<td>0.396</td>
<td></td>
</tr>
<tr>
<td>The level of significance</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
</tr>
</tbody>
</table>

In the column of the mean difference, the significant difference between groups is marked with asterisk. As you can see in this output, according to Tukey test, there is a significant difference between the average employment rate of physically handicapped and deaf and ICT.

The results in (Table 3) clearly show that the averages for physically handicapped and blind and deaf are not significantly different, while the averages for physically handicapped and deaf are different and are categorized separately. As can be seen, the average amount of physical handicapped employment is less than all groups. However, totally a high percentage of people with disabilities in all three groups are not working with ICT. Because the average is much lower than moderate level.

**Second hypothesis:** There is a significant relationship between the variables of demographic, gender, age, education, income and the degree of disability and the use of ICT.

To examine this hypothesis, the chi-square test is used and results are shown in (Table 4).

Significant amount of gender, age, income and degree of disability is higher than 0.05 which shows that there is not a significant relationship between these variables and the use of ICT. In other words, disabilities with any gender, any age and any degree of disability use ICT to the same level and type of these variables. But as the significance level of education variable and income is less than 0.05, these two variables have a significantly relation with the use of ICT by disabled. It means that the more the level of income and education is, the more people use this technology.

**CONCLUSION**

According to studies conducted in this research about the employment status, half of the sample case is unemployed. However, the percentage of unemployed deaf was lower than other groups. Despite laws for the employment of disabled, as the results show, a lot of people with disabilities are still unemployed.

It can be said that the deaf failed and the blind was overwhelming successful in telework through ICT. Regarding the efforts made in the country, the high level of ignorance of physical handicaps from ICT-based telework is worthy of a separate study. Approximately 95% of blind due to the type of disability are not able to use ICT for their research activities. Not taking advantage of the Internet in people with disabilities limits their awareness in research activities, or makes the research very costly. Most of the physical handicapped believe that ICT would be quite useful and effective at the service of employment but they do not have enough facilities to use them. About 90% of blind due to lack of familiarity and ability to use ICT believe that it does not help their employment at home. Deaf also had different opinions with about the same percentage, but approximately 35% of them believed that because of their lack of familiarity and ability to use, it cannot help their jobs. These results are aligned with Bell and Heitmueller (2005) and Jolls and Prescott, (2004). According to these results the necessity of implementing strategies and programs for more access of disabled to ICT is felt more than ever and also a good platform shall be provided to familiarize the disabled community with this technology and the ways of enjoyment from its benefits.

**RECOMANDATION**

Some of the services governments can provide using ICT to increase disabled employment are as follows:

- Create an information center to introduce jobs for activity of various disabilities.
• Create a database to introduce companies which are applicant for the above mentioned jobs (this depends on the specific quota of companies and organizations for the employment of such individuals).
• Dedicate high-speed Internet lines for connection of disables at home or work.
• Distribute electronic books.

Finally, for future researches the following subjects are suggested:

• Study the effects of ICT on reducing the physical presence of the disabled in society.
• Review the use of ICT in reducing the cost of living for the disabled.

REFERENCES

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