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RESEARCH ARTICLE

ANALYTICAL STUDY OF INFORMATION AND COMMUNICATION TECHNOLOGY AWARENESS IN CHANDIGARH UNIVERSITY

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ABSTRACT

Indian higher education system is being developing due to rapid Information and Communication Technology (ICT) involvement. The development of Indian higher education is affected by heavily involvement of students, faculty and researcher in technological based education. To encourage the ICT based education in Indian institutions, government had taken several meticulous steps in time. Now day's access rate and availability of ICT resources are enough in educational institutions. Thus, researcher believed to investigate the ICT awareness among educators and students involving in higher education in Indian institutions. Almost every Indian institution is encouraging and developing ICT based teaching, learning and research. This study explores the ICT awareness among students and faculty of Chandigarh University in relation to gender variable. Results of this paper are revealing significant difference between boys and girl students towards ICT awareness in relation to their gender. Findings of this paper are also proving no meaningful difference between male and female faculty members towards ICT awareness in relation to their gender. More than hundred students and eighty six faculty members have participated from various departments of University. The findings of this research paper are beneficial and supportive lead to University administration to understand ICT awareness level in their students and faculty members.

INTRODUCTION

Related Work

ICT is abbreviated for Information and communication Technology which is referred to as the different collection of technological equipment and resources further developed for the aim of convey information to destination. They are also built to management of information activities such as creation, distribution and collection of information. There are a variety of ICT tools available in market

which can be utilized for the knowledge formation and distributions over the globe. These tools include Fax, Radio-FM (Frequency Modulation), Television, Internet, Mobile phone, Printer, Scanner, Computer, laptop, tablets and many more hardware and software applications. Lot of ICT tools like laptops, PCs, Cell phones, very small aperture terminal (VSAT), and PDAs have their own inference in business and education. These all devices can be used in imparting in learning, teaching and training for teachers and students. Fig-1 is exploring ICT access in various activities of human being life. It is also said that 96.82% persons are using electronic journals in university library and 93.65% involvement of them is visible to e-mail access for sending and receiving files. Then after 87.30% found to search and gather work using Internet. Many of them (80.95%) are interested in internet surfing; 76.19%, are using ICT tools for preparing their manuscripts for research proposals and papers; 71.43% persons use ICT for online database storage. Many on them found (69.84%) for making power point presentations and other documents; followed by 55.55% for blogging, Web OPAC (Open public access), discussion forums and career development [1]. ICT is a large-scale orientation both for Information and Communication Technology act as an umbrella that includes several aspects of computing, information, communications and technologies. Today's world has been transformed into a big village in the sense of fast communication enforcement of boost up technology empowering by ICT. It is not only the backbone of the information society, but is also presented as an important catalyst for inducing educational reforms that change our students into productive knowledge workers [2]. By identify the impact of ICT on the educators, students and educational institutions; they try to reform their educational courses and classroom facilities, in order to meet the potentials of ICT in improving institution's worth. ICT play major role to covers a broad continuum of higher educational tools and

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approaches that continues to grow to meet the needs of students and educators. With the global communication and internet connection speed, web content has grown richer and more interactive for users [3]. Franklyn Chukwunonso and Michael C. Oguike (2013) investigated five Nigerian Universties for ICT adaption in Agriculture sector.

They have found that Architectural educators lack of ICT resources into their teaching and research environment specifically in providing to architectural industry graduates. ICT expenditure has been selected as having meaningful influence in limiting or lacking of ICT adaption in teaching and research process. They have also discovered few aspects such as attitudes of staff to ICT deployment in Architectural education, computer illiteracy among staff, insufficient and unproductive telecommunication network and insufficient relevant software in order to ICT adaption in Agriculture teaching-learning and research environment [2]. Jimoyiannis, A., & Komis, V. (2007), Papaioannou, P., & Charalambous, K. (2011), Wen, J. R., & Shih, W. L. (2008) stated that In addition, attributes used to assess the attitudes towards ICT of students, teachers and principals have been categorized in two groups: demographics (age and gender) and computer experience (training, years of using computer, ownership of computer, access to a computer, intensity of computer use [4,5,6]. Yasemin Gülbahar (2008) had showed that in general, both the pre-service teachers and instructors are in favor of using technology in and out-of-class activities. This positive attitude is an important indicator of willingness and first step in effective integration. Almost all of the academic staff was willing and ready to participate in any course, seminar, and workshop about technology usage, which reveals the need for professional development [7].

Objectives & Hypothesis

This study is aims to explore the ICT Awarness among students and faculty members their academia. The following objectives are sets for this study:

1. To study about Information and Communication technology awareness between boys and girls student.
2. To study about Information and Communication technology awareness between male and female faculty.

To achieve the above cited objectives two null (H01 and H02) hypothesis are described below:

H 01 **:** There is no significant difference between boys and girls student towards Information and Communication technology awareness.

H 02 **:** There is no significant difference between male and female faculty towards Information and Communication technology awareness.

DESIGN AND METHODOLOGY

A stratified random sampling method has been used to collect primary data and to confirm the hypotheses. Participants were asked to filled-up the questionnaire with an agenda to gather personal opinions about Information and communication technology. The research design includes the following.

Variable Selection

The present study includes the the four independent and thirty five dependent variables in our study. In this paper Gender has been considered as independent variable and independents variables have been selected according ICT awareness in terms of availability, usability, problems and solutions.

Instrument Design

A predefined structured questionnaire has been framed to collect samples of students and faculty from Chandigarh University. The questionnaire is consisted of 35- items self report scored on a 5 point Likert type scale (strongly disagree (SD)=1, disagree (D)=2, undecided (UD)=3, agree (A)=4, and strongly agree (SA)=5). Demographic characteristics of students such as field, state, affiliation, age and gender have mentioned in the instrument. Item analysis test has been applied to selection of variables in the questionnaire.

Population Identification

Participants (faculty members and students) have been involved who were belonged to undergraduate courses, postgraduate courses and research field in University. Faculty members are providing teaching in numerous fields like science and engineering streams. Demographic characteristics of participants are given in Table 1.

Table 1 Gender Distributions of Participants

	Students (S) n= 112		Faculty (F) n=86	
Groups	Boys	Girls	Males	Females
Frequency (n)	60	52	43	43
Percentage (p)	53.7	46.3	50	50

(Source: Authors)

Table 1 is showing that one hundred twelve students and eighty six faculty members have successfully participated in this study. Out of total count of students 60 are boys and 52 are girls and out of total count of faculty equal ratio of faculty members has been considered.

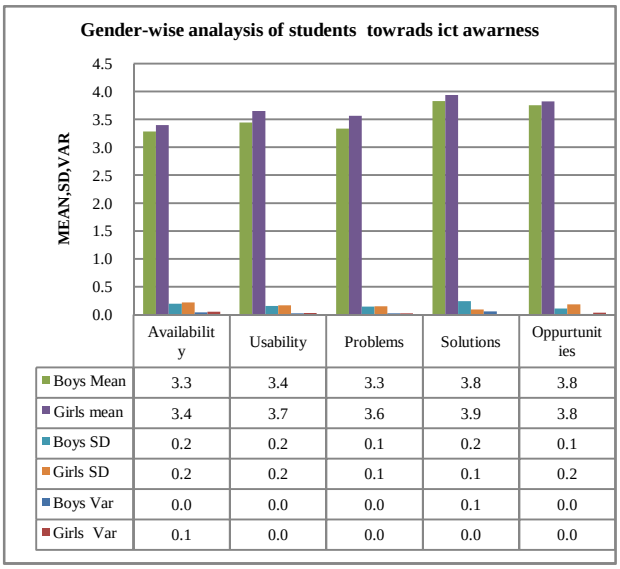
Statistical techniques

This paper includes descriptive and inferential statistics which provide us efficient way to present big amount of data in a presentable and meaningful summary form. In hypothesis test, inferential statistics plays a crucial function. Student T-test with equal variance has been applied to test null hypotheses. In present study to analysis the students and faculty samples by using Microsoft Ms-Excel 2007 with extra add-ins named Analysis Toolpack and Analysis Toolpack-VBA.

FINDINGS AND DISCUSSIONS

Gender Wise Analysis of Students

This section explores the results of analysis of student's awareness towards information and communication technology in relation to gender variable.



	Availability	Usability	Problems	Solutions	Oppurtunities
Boys Mean	3.3	3.4	3.3	3.8	3.8
Girls mean	3.4	3.7	3.6	3.9	3.8
Boys SD	0.2	0.2	0.1	0.2	0.1
Girls SD	0.2	0.2	0.1	0.1	0.2
Boys Var	0.0	0.0	0.0	0.1	0.0
Girls Var	0.1	0.0	0.0	0.0	0.0

Figure 1 Gender -Wise ICT Awareness in Students (Source: Author)

Figure 1 is reflecting the five factors (Availability, Usability, Problems, Solutions and Opportunities) under consideration of information and communication technology awareness. Y axis represents the mean, standard deviation (SD) and variance (Var) of students' scores and X- axis shows contains the ICT factors. In favor of availability factor, the Mean scores are nearly equal in relation to gender variable. The mean value of both boys and girls is deviating from standard deviation 0.2 which is reflecting that responses of them lie between in range (3.1-3.5) of Undecided to Agree. In favor of usability factor, the Mean scores are not equal in relation to gender variable. The mean value of boys 3.4 is deviating from standard deviation 0.2 which is reflecting that responses of them lie between in range (3.2-3.6) of Undecided to Agree.

The mean value of girls 3.7 is deviating from standard deviation 0.2 which is reflecting that responses of them lie between in range (3.5-3.9) of Undecided to Agree. In relation to problems factor, the Mean scores are not equal in relation to gender variable. The mean value of both boys and girls is deviating from standard deviation 0.1 which is reflecting that responses of them lie between in range (3.2-3.7) of Undecided to Agree. In regard of solutions factor, the Mean scores are nearly equal in relation to gender variable. The mean value of boys 3.8 is deviating from standard deviation 0.2 which is reflecting that responses of them lie between in range (3.6-4.0) of Undecided to Agree. The mean value of girls 3.9 is deviating from standard deviation 0.1 which is reflecting that responses of them lie between in range (3.8-4.0) of Undecided to Agree. At last in relation of opportunities factor, the Mean scores are equal in relation to gender variable. The mean value 3.8 is same for both boys and girls is deviating from standard deviation 0.1 and 0.2 respectively. It shows that responses of them lie between in range (3.6-4.0) of Undecided to Agree. There is no scatteredness has been found in responses of participants in relation to their gender according to variances.

Testing of Hypotheses H01

From Table 2, It is found that calculated T-value (t Stat) is found greater than the table value (t-critical two-tail) at 5 % level of significance with degree of freedom (df) is 68 (2.083>1.995 at df =68, @0.05) which is significant up to 5% level.

Table 2 T-test Analysis on Student ICT Awareness

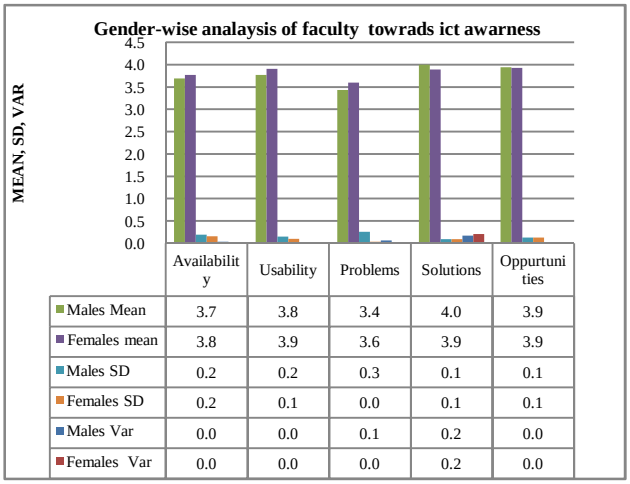
Static	Boys	Girls
Mean (M)	3.52	3.66
Variance (VAR)	0.07	0.07
Observations (N)	35	35
Degree of Freedom (df)	68	
t Stat	2.083	
t Critical two-tail	1.995	

(Source: Authors)

Hence first null hypothesis H01 "There is no significant difference between boys and girls student towards Information and Communication technology awareness" is failed to accept. Therefore, significant difference has been found between boys and girls student towards information and communication technology awareness.

Gender Wise Analysis of Faculty

This section explores the results of analysis of Faculty's awareness towards information and communication technology in relation to their gender variable.



	Availability	Usability	Problems	Solutions	Oppurtunities
Males Mean	3.7	3.8	3.4	4.0	3.9
Females mean	3.8	3.9	3.6	3.9	3.9
Males SD	0.2	0.2	0.3	0.1	0.1
Females SD	0.2	0.1	0.0	0.1	0.1
Males Var	0.0	0.0	0.1	0.2	0.0
Females Var	0.0	0.0	0.0	0.2	0.0

Figure 2 Gender -Wise ICT Awareness in Faculty (Source: Author)

Figure 2 shows in favor of availability and usability factor, the Mean scores are nearly equal in relation to gender variable of faculty. The mean value of both males and females is deviating from standard deviation 0.2 which is reflecting that responses of them lie between in range (3.1-3.5) of Undecided to Agree. In relation to problems factor, the Mean scores are not equal in relation to gender variable. The mean value of males 3.4 is deviating from standard deviation 0.3 which is reflecting that responses of them lie between in range (3.1-3.7) of Undecided to Agree. But female's mean score 3.6 is not deviating. In

regard of solutions factor, the Mean scores are nearly equal in relation to gender variable. The mean value of males 3.9 and females 4.0 is deviating from Standard deviation 0.1 which is reflecting that responses of them lie between in range (3.8-4.1) of Undecided to Strongly Agree. In regard of opportunities factor, the Mean scores are equal in relation to gender variable. The mean value 3.9 is same for both male and female is deviating from standard deviation 0.1 each. It shows that responses of them lie between in range (3.8-3.9) of Undecided to Agree. The scatteredness has been found in responses of participants in relation to their gender of opportunities factor.

Testing of Hypotheses H02

From Table 3, It is found that calculated T-value (t Stat) is found smaller than the table value (t-critical two-tail) at 5 % level of significance with degree of freedom (df) is 68 (1.04<1.995 at df =68, @0.05) which is not significant up to 5% level.

Table 3 T-test Analysis on Faculty ICT Awareness

Static	Male	Female
Mean (M)	3.80	3.84
Variance (VAR)	0.05	0.02
Observations (N)	35	35
Degree of Freedom (df)	68	
t Stat	1.04	
t Critical two-tail	1.995	

(Source: Authors)

Hence second null hypothesis H02 "There is no significant difference between males and females faculty towards Information and Communication technology awareness" is failed to reject. Therefore, significant difference has not been found between males and females faculty towards information and communication technology awareness.

CONCLUSION

The Chandigarh University is rapidly growing University in Mohali, Punjab. The academic development of both students and faculty has been influenced by involvement of Information and communication technology in their academia. This study has been carried out to test the statistically significantly difference between students and faculty towards Information and communication technology awareness in relation to their gender. It has been found that gender variable did not influenced faculty awareness towards Information and communication technology awareness. The findings of this are also revealing that there is statically significant difference between boys and girls student towards Information and communication technology awareness.

This study also represents the confession of participants about ICT factors considered such as availability, usability, problems, solutions and opportunities.

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