



Article : Social involvement and Stress in relation to Information Technology Orientation

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ABSTRACT :

Information Technology has revolutionized the world. It has influenced all the aspects of human life. Students are not an exception to this. Therefore, a study was planned and carried out on the third year B.Sc. computer science students of Pune city, with the following statement: “A study of social involvement, stress and self-esteem in relation to IT orientation (IT)”. The participants in this study were 470 third year B.Sc. computer science students out of which 215 were girls and 255 were boys. Tools were developed by the researchers to measure Social Involvement, Stress and ITO. Psychometric properties of the tests were determined and then they were used for data collection. Data were analyzed with the help of SPSS 11.5 for Windows. Pearson’s product-moment correlation was used to test correlational hypotheses and a t-test was used to find out the significant differences if any on social involvement, stress and Information Technology Orientation. Obtained results showed that there social involvement was positively correlated with IT orientation. Stress was negatively correlated with IT orientation. Boys and girls did not differ in social involvement. Stress was more among boys than among girls. Boys and girls did not differ in IT orientation.

INTRODUCTION :

Throughout the world including India, computers have brought revolution in all sectors of development; be it health, education, industry, space or finance. According to the NASSCOM survey (Mehta, 2000) there has been a growing population of Internet users in India. According to the recent statistics, there are 38.5 million Internet users in India and the number is set to grow to a 100 million by 2007-08 (cited in IAMAI, 2006).

Many scholars and technologists believe that these changes and The internet in particular are transforming social and economic life (e.g. Anderson, Bikson, Law, & Mitchell, 1995; Attewell & Rule, 1984; King & Kraemer, 1995). Some scholars argue that internet is causing people to be socially

isolated and cut off from genuine social relationships (Stoll, 1995; Turkle, 1996). Others argue that internet facilitates social relationships by freeing people away from geographical constraints of geographical isolation (Katz & Aspden, 1997; Parks & Floyd, 1996; Parks & Roberts, 1998).

With increasing usage of the internet, online communication is rapidly becoming the order of the day. As a result today's youth are increasingly becoming adapters of internet technology and internet usage has become an integral part of their lives. The concept of online communication is soon catching up in India as well.

Due to the growing importance of computer and its use in youth a study is planned to find the association between social involvement and stress in relation to information Technology (IT) orientation among the final year B.Sc. computer science students.

Social Involvement :

Review of research has suggested that there are several contradictory findings related with the impact of IT on social involvement. For example, some researchers have found that increased use of the Internet was associated with increased social isolation and even depression (Kraut, Boneva, Cummings, Helgeson, & Crawford, 2002; Nie & Erbring, 2000). Other studies have found that online relationships are slower to develop and weaker than face-to-face contacts (Cummings, Butler, & Kraut, 2002; Walther, 2002). However, other studies have shown contradictory results. For example, ethnographic studies conducted by Hamman (1999) and Katz and Aspden (1997) have suggested that social isolation might decrease with greater use of the internet and perform similar role like offline relationship. This indicates that the online relationships can be as strong and as intimate as the real world.

Stress: - The modern world is one of achievements and also of stress (Rao, 1991). Stress is a necessary concomitant of life and an inevitable lot of humanity. It is stress per se that concerns human beings. The concern arises when stress reaches a point, which is dangerous to human health and welfare. Continuous exposure to high stress has a number of negative psychological, behavioral and physiological consequences.

The college years bring greater academic demands and demands about personal identity and career choice. Financial concerns due to college expenses, increased competition and an uncertain job market may intensify stress (Whitman et al., 1984).

Although there are many sources of stress outside the university setting, university exams, papers and projects, along with the pressure to earn good grades

can cause mental stress (Ross, Niebling & Heckert, 1999).

Literature examining the relation between gender and stress reveals several conflicting outcomes. Numerous studies have found that women find themselves in stressful circumstances more often than men (Almeida & Kessler, 1998; McDonough & Walters, 2001). In addition, women experience gender-specific stressors such as gender violence and sexist discrimination, which is associated with women's physical and psychiatric events (Heim et al., 2000).

Considering the possibility of stress among college students, and its effect on their mental health, an attempt has been made in the present study to find out the association between social involvement, stress in relation to IT orientation of T. Y. B.Sc. computer science students.

The present study is based on two theoretical paradigms. They are (i) Efficiency hypothesis and (ii) Displacement hypothesis

(i)Efficiency hypothesis: The efficiency hypothesis holds that the Internet offers an additional technology for engaging in social interaction and coordinating social activity. Additionally, Internet may make other activities more efficient freeing up additional leisure time. For example, if an individual shops online, this may free up time to spend with friends. For example, Robinson et al (2000) argue that the Internet has made everything-including socializing more efficient.

The alternative theoretical perspective is a 'displacement hypothesis' or 'hydraulic model'.

(ii) Displacement theory: Time spent on various media becomes an issue since the underlying assumption is that individuals have a limited amount of time, which can be seen as a kind of social capital (Huston, Wright, Marquis, & Green, 1999; Larson, & Varma, 1999). If the individual increases the time he or she spent on an activity, then he/she will logically have to make sacrifices in other areas (Neuman, 1991). The concern is, of course, apparent when the activities that are cut back are essential to children's development, such as social involvement and social interaction. To date, studies on time displacement have been conducted primarily with respect to television, and have spanned five decades (viz., Huston, et al., 1999; Larson & Verma, 1999). With the advent of computer-based communication, research on the new medium is also taking place (viz., van der Voort et al., 1998). The results reveal that an increase in Internet use is associated with decreased television viewing, but is associated with increased newspaper reading, radio listening, and socializing with friends. A change in Internet use, however, does not influence physical activities and interaction with family members (Waipeng Lee & Eddie C.Y.Kuo, 2002).

Existing empirical research provides support for both views. One of the earliest surveys examining the social consequences of the Internet was the "Internet and

Society". Study was conducted through the Stanford Institute for the Quantitative Study of Society (SIQSS) in February 2000 by Nie and Erbring. This nationally representative study revealed that Internet users especially heavy users report spending less time with friends and family, shopping in stores, reading newspapers, and watching television and more time working or for their employers at home (without cutting back on hours in the office). Following this study, three other groups (PEW, UCLA and NPR/Kaier/Harvard's Kennedy School Survey study) conducted surveys on the implications of increased Internet use. These studies found an inverse relation between computer use and sociability. They report that 58% of all adult Americans reported that computers led people to spend less time with friends and family. Results of the study reveal that displacement hypothesis predicts that Internet use at home has a negative effect on social time with friends and family. The efficiency hypothesis predicts that no relationship or even a positive relationship between Internet use and sociability, regardless of time or location.

In view of diverse findings that have been associated with the impact of information technology on social involvement, theoretical foundation and the dearth of studies in the Indian setting, there is a need to understand the impact of information technology on the psychosocial dimensions of the youth.

The objectives of the study were :

1. To find out relation between social involvement and IT orientation.
2. To find out relation between stress and IT orientation.
3. To find out sex differences in social involvement.
4. To find out sex differences in stress.
5. To find out sex differences in IT orientation.

On the basis of review of literature, the following hypotheses were formulated

1. Higher is the information technology orientation the lower will be the social involvement of the students.
2. Higher is the information technology orientation the lower will be the stress in students.
3. Social involvement will be more in girls than in boys.
4. Stress will be more in girls than in boys.
5. Information Technology Orientation will be more in case of boys than in girls.

ent defines it as the analysis and assessment of jobs to ascertain their relative worth to serve as the basis of equitable wages. In short, job evaluation is attempts

to establish a justifiable rank order of jobs so that it can serve as a rational basis for fixing up appropriate wages.

METHOD :

Sample: - This being a study on social involvement, stress and IT orientation among computer science students, the sample consisted of 256 boys and 214 girls who were studying computer science course at the third and final year of the B.Sc. Computer science course. The total sample thus consisted of 470 third year B.Sc. Computer science students from various colleges of Pune City where this course is being taught. An attempt was made to include an equal number of boys and girls, but was not feasible as the majority of the students studying this course were male students. This observation was further supported by the statistics showing number of boys enrolled for B. Sc. Computer Science course in Pune University to be more than that of girls.

Variables and Tools: To meet the purpose of this study the following tools were used for collecting data. The description of which is given below.

Social Involvement – Social involvement in the present study refers to the social activities the students prefer to participate in with friends and family members, extent of support given to the friends and family members and the amount of support received from them.

In order to measure participant's social involvement a scale was developed by the researchers. The description of which is given below-

Social Interaction and Social Involvement Scale (SISIS)

It consisted of 22 items that measured the extent to which students prefer to participate in the social activities with friends and family members. It also measured the degrees of the intimate and close relationship with the family members. The scale also measured the extent of support given to friends and family members. It is a Likert type five point scale, which consisted of five alternatives ranging from "never" to "very often". On item number seven the subject is asked to indicate the degree of intimate and close relationship with the family members on a ten-point scale.

The maximum possible score on the scale is 94. The higher scores indicate the higher amount of social involvement.

Reliability: The reliability coefficient calculated for the scale with the help of Cronbach's Alpha was found to be 0.73 (N = 154). Test-retest reliability with the gap of eight days was found to be 0.74 (N = 86).

Validity: The validity of the scale was determined by correlating the scores of SISIS with the widely used and the standardized measure of social support, namely, Interpersonal Support Evaluation List (ISEL-12) developed by Cohen,

Mermelstein, Kamarck, and Hoberman (1985). Obtained correlation ($r = 0.26$, $p < .01$) was found to be significant at 0.01 level.

Stress– In the present study the term stress refers to the uncomfortable experiences and negative perception of students as a result of the information overload, nature of computer science course, infrastructure, inadequate laboratory facility, unavailability of appropriate resources, extent of support received from parents and teachers and so on. In order to measure B.Sc. computer science student's stress, Stress Scale for Computer Science Students was developed by the researchers.

Stress Scale for Computer Science Students (SSCSS)

The scale consisted of 48 items with the response categories like 'never', 'rarely', 'sometimes', 'often', and 'always'. The highest possible score on this scale was of 240 and the lowest score was of 48.

Reliability: The alpha reliability of the scale is 0.71 (N=154). Test-retest reliability with the gap of eight days was found to be 0.83 (N= 86).

Information Technology Orientation- In the present study the term Information Technology (I T O) has been defined as the self reported information given by the students about the knowledge of Information Technology, degree of expertise and information about Information Technology , active use of computers and the time spent with it. In short, IT orientation refers to the self-reported information about the knowledge one has about computers, its applications, time spent on it, and attitudes towards it.

Information Technology Orientation Scale (ITO)

In order to measure IT orientation of the sample, a self-report inventory was developed by the researcher. The scale consisted of 12 items where the respondents were asked the extent to which they have positive attitudes toward the course, amount of time spent daily with computers, number of years invested in learning computers and so on. The response categories varied from item to item and accordingly scoring procedure also changed. The maximum possible score on the scale is 35 and the minimum score is 5.

Reliability: The Chronbach's alpha reliability coefficient of the scale was found to be 0.71 (N = 154). Test-retest reliability of the scale with the gap of eight days was found to be 0.76 (N = 86).

Data Collection Procedure :

An initial questionnaire was prepared to gather the biographical and the other relevant information about the subjects. After getting necessary permission from the concerned authorities, scales were administered to the respondents. A care was taken to establish a good rapport with the students. The appropriate instructions

were given and scales were administered in a group of 30. It was also ensured that the students have followed the instruction clearly and after clearing there doubts the scales were administered. Group testing sessions were used for data collection.

The obtained scores were tabulated and were prepared for statistical analyses. Questionnaire data were analyzed using SPSS 11.5 for Windows. Pearson's product moment correlation was used to test the correlational hypotheses. Therefore the "r" was calculated between, social involvement, stress and IT orientation scores. The t- test was used to find out significant differences between the males and females, if any, on social involvement, stress and IT orientation.

Results and Discussion :

Table1: Correlation for the entire sample on Social Involvement, Stress and IT Orientation (N=470)

	1	2	3
1 Social Involvement	1		
2 Stress	-.25**	1	
3 IT orientation	.17**	-.27**	1

* $P < 0.05$, ** $p < 0.01$

Obtained results showed that there is a significant positive relation between social involvement and IT orientation ($r = .17$, $p < .01$)

(Refer Table 1). The obtained results go with the optimistic views of recent studies on the impact of Internet on social life. For example, the results of the recent studies have shown that Internet is a vibrant new means of social interaction through means of e-mail, new groups and chat rooms (LaRose, Eastin, & Gregg, 2001). Ethnographic studies suggest that online communication supplements existing real world relationship rather than displaces them (Hamman, 1999, Wellman & Gulia, 1999).

Regarding relation between stress and IT orientation, obtained results showed that there is a significant negative correlation between stress and IT orientation ($r = .27$, $p < .01$). This suggests that higher is the IT orientation the less will be the stress experienced by the students. The obtained results support the recent studies conducted in this area. For example, studies have shown that novice Internet users may experience new sources of stress from technical problems encountered when using the Internet. The respondents for the present study have spend more than two

years in learning computers as a result they know the mechanism of computers well; they are not new to this technology, therefore, they may not be experiencing more amount of stress. Surveys have shown that the Internet use has facilitated the online relationships and social contacts thereby reducing social isolation and stress (Katz & Aspden, 1997; Parks & Floyd, 1995).

Table 2: Means, SD and t- for Social Involvement, Stress and IT orientation (N = 470)

	SEX	N	Mean	Std. Deviation	t- test
SISIS	FEMALE	214	60.83	12.16	1.04NS
	MALE	255	59.69	11.69	
STRESS	FEMALE	214	118.21	19.89	2.80**
	MALE	255	123.92	23.65	
ITO	FEMALE	214	24.82	3.78	.17 NS
	MALE	255	4.13	4.12	

* $p < .05$, ** $p < .01$

The result Table regarding sex differences in social involvement, and IT orientation the results were not found to be significant. Obtained results showed that significant differences were not found between males and females on social involvement (Refer Table 2). This suggests that boys and girls are giving equal importance to social interaction and social involvement. This may be because being college student's social involvement with friends and family is equally important for both boys and girls. Studies have shown that youth of the age of 18 - 20 give importance to friends. Parties of all types, especially those that include members of the opposite sex rank first among the social interests at this age. This may be the reason why sex differences were not noticed on social involvement.

Sex differences were also not noticed on IT orientation because in the Urban areas like Pune where a lot of emphasis is given on the education of both boys and girls; thereby, boys and girls were found to be similar on there orientation towards IT. Pune is hub for Information Technology; as a result, job opportunities are available in this sector. This results in more and more students getting attracted towards this course this may be the reason for lack of gender differences in IT orientation. In addition, studies conducted in India regarding the gender differences

in Internet use seem to be contrary to the studies conducted in the USA. For example, studies have shown that though male online users have increased in absolute numbers, it has dipped from 74% (2004-05) to 68% (2005-06) and women numbers increased from 26% in (2004-05) to 32% in (2005-06) (cited in IAMAI, 2006). Studies have shown that by 2000 the gender gap in being online is disappearing. For example, in a recent survey of Internet use (Pew Internet and American Life Project, 2000), it was found that women use the Internet more for communication than men. It was found that women have more positive attitudes toward using e-mail as a tool to connect to others.

The results showed that there are significant differences between boys and girls on stress. For example, regarding sex differences in stress obtained results showed that boys score more on stress compared to girls ($t = 2.80$ $p < 0.01$). The results thus do not go with the hypothesis of the study and the results of the previous studies; i.e. girls will experience more stress compared to boys. This may be because of the high score on social support of the girls. In addition, as boys grow older the social pressures of getting good marks and in turn getting good job are more from boys than from girls. Since significant gender differences were noticed on stress correlation was calculated separately for boys and girls on stress.

Conclusions :

1. Social involvement was positively correlated with IT orientation.
2. Stress was negatively correlated with IT orientation.
3. Boys and girls did not differ in social involvement.
4. Stress was more among boys than among girls.
5. Boys and girls did not differ in IT orientation.

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