Original Article

Information and communications technology, culture, and medical universities: Organizational culture and netiquette among academic staff

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ABSTRACT

Introduction: Netiquette is appropriate behavioral etiquette when communicating through computer networks or virtual space. Identification of a dominant organizational culture and its relationship with a network culture offers applied guidelines to top managers of the university to expand communications and develop and learn organization through the use of the internet. The aim of this research was to examine the relationship between netiquette and organizational culture among faculty members of the Isfahan University of Medical Sciences (IUMS), Iran. **Materials and Methods:** To achieve this aim, the research method in this study was correlational research, which belonged to the category of descriptive survey research. The target population comprised of 594 faculty members of the IUMS, from which a sample of 150 was randomly selected, based on a simple stratified sampling method. For collecting the required data, two researcher-made questionnaires were formulated. Even as the first questionnaire tended to measure the selected sample members' organizational culture according to *Rabbin*'s model (1999), the latter was designed in the Health Management and Economic Research Center (HMERC), to evaluate netiquette. The reliability of the questionnaires was computed by Choronbach's alpha coefficient formula and they happened to be 0.97 and 0.89, respectively. Ultimately, SPSS Version #15 was used for the statistical analysis of the data. **Results:** The findings revealed that the organizational culture and netiquette were below average level among the sample members, signifying a considerable gap in the mean. In spite of that, there was no significant relationship between netiquette and the organizational culture of the faculty members. **Conclusion:** Emphasizing the importance of cultural preparation and a network user's training, this research suggests that the expansion of network culture rules among IUMS and organizational official communications, through the use of internet networks, in order to promote university netiquette and convenience in communication development, on the basis of special etiquette.

Key words: Culture management, higher education, Isfahan University of Medical Sciences, netiquette, organizational culture, university culture

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INTRODUCTION

The sociocultural environment has the deepest, most prevail-

ing, and strongest effect on the social behavior of the majority of society members. A person in isolation and away from people thinks and acts in accordance with a culture in which he was raised in. Culture more or less organizes and interprets society values and its understanding and organizational goals are culture-based.[1]

The world is now a rapid changing one. Deep changes in society institutions and rapid technological and scientific breakthroughs have forced people to face new situations. People's values can not only be formed in an organization, through communication in a real environment, but can also be formed via virtual space; the digital or electronic organizational environment. This virtual space can be formed through communication through computer networks.

Increasing use and availability of the internet has led to virtual community development, where people with a similar mindset and interests, crossing geographical obstacles, discuss about an extensive range of issues, where some of them are unimportant, disputable or private. Given the extensive amount of behavioral and social information available on it, the internet has become an initial target for researchers, who examine human interaction dynamics and its outcomes in this virtual media. Examples of this research are the recent studies on the psychological and social effects of internet use in the home, by the *Carnegie Mellon* Human Interaction Institution and the *Pittsburg* University research about addiction.[2] Computer and digital technologies can facilitate communication culture development in virtual space. This developing culture can be addressed and assessed through every comprehensive research on network communications.[2-4] It seems that netiquette is as important as organizational culture for people in an organization.

Freestone and Michel[5] have an idea that cyberspace exists as a separate realm to the physical world, and may have developed an ethical culture of its own or a '*netiquette,*' and has a set of beliefs or standards shared by a group of people, which help the individual decide what is, what can be, how it can be, how to feel, what to do, and how to go about doing unethical things on the net.

According to literature, *Netiquette* stands for *Network* e*tiquette* which is a guideline for good manners in network communication and behavior.[4,6] *Netiquette* is derived by merging the words network and etiquette. More specifically the term netiquette has been described as the convention of politeness recognized on the *Usenet* and in *mailing lists*. In the context of the new internet global culture, attempts are being made to identify common standards of etiquette. Literally hundreds of specific netiquette suggestions are published.[3,5,7] Identify the following most frequently cited specific suggestions for online users: Think first; write in upper and lower case; avoid abbreviations; be concise; avoid smiley; do not flame; do not take offense easily; do not evangelize; and know the audience. Netiquette breaches do not always bring retribution. Most breaches of politeness and courtesy may do no more than reflect poorly on the individual user. One who knows the rules of this new culture may well have an advantage over the one

who does not.[5,7] Professional organizer *Milne* (2001) describes these reminders about e-mail and internet business etiquette: (1) Avoid all uppercase letters, (2) use formal language and sentence structure when communicating with senior manager, (3) double check your spelling and grammar, (4) avoid large attachments if possible, (5) put meaningful data in the subject line, (6) do not use e-mail to highlight negative thoughts, (7) messages should be concise and to the point.

Prevalence of new technologies like the internet allows people to make faster and more mistakes. Further guidelines that technology journalists have emphasized in 'netiquette' include: (1) practice truth in labeling, (2) watch your tone, (3) learn the language, (4) skip the jokes and other junk, (5) allow for the download factor, (6) take out the garbage, (7) do not e-mail when you are annoyed, (8) when in doubt, print it, and (9) develop a sense of electronic timing.[8]

The organization staff has an important role in organizational goal attainment. Having a record of good performance, they can actualize organizational goals. Perceptions, beliefs, and organizational values have a considerable effect on people's effectiveness in the organization.[9,10] Any programs that aim at familiarizing individuals with an organization must be with regard to the culture and value system of the organization, for every organization has a certain definition, depending on its culture and value system. Thus, it is obvious that what is considered as appropriate behavior may be different from organization to organization.[10] In health organizations (2006), culture determines the organization borderline, and also creates a kind of commitment that is more important than personal interests. Moreover, it can act as a control factor to form an employee's behavior.[11]

The researchers in a previous research carried out in Isfahan (2008) on organizational culture and netiquette, showed that there was a relationship between organizational culture and netiquette among the Isfahan University faculty members.[12] *Spinks*[13] and his colleague's research on making writers of e-mail messages aware of the appropriate 'netiquette' would enhance today's instant communication process. Researchers determined what literature recommended as being appropriate 'netiquette', surveyed a university faculty in business disciplines to determine their knowledge of appropriate 'netiquette', and compared the faculty members' knowledge with guidelines from the literature.[13]

Sturges's Results[14] from *Loughborough* University's Privacy in the digital library project, suggest that users have a very strong trust that their privacy is safe with librarians. E-mail has replaced the interoffice memo and is the primary means of business communication. However, very often, the correspondents do not follow the same rules of common sense with the e-mail as with printed correspondence. In fact, the business e-mail should be more carefully constructed than paper mail, because an e-mail can be easily forwarded, attached to another message or kept indefinitely in an electronic filing cabinet.[15] This article presents some simple guidelines for electronic mail etiquette.

Buelens et al.[16] and his counterpart selected a total of 112 students graduating in the biomedical sciences randomly, who were assigned to the electronic discussion groups of Varmazyar[17] and Eskandary[18] participants. Three treatment groups were created by varying the guidelines presented to participants upon entering the discussion forum. The guidelines contained trivial information, netiquette advice or a combination of didactic guidelines and netiquette advice. The results revealed that both the quality of discussion and the participants' appraisal of the discussion were the highest in the third group. However, contrary to what is widely suggested, it was observed that exclusively supplying netiquette guidelines had no impact on the discussion quality.[16]

A research on organizational culture in the *Tarbiat Modarres University* in (2001) showed a considerable gap between organizational culture and strong culture in the *Tarbiat Modarres University*.[19] Another research in the IUMS indicates that the prevailing culture is the strong type of culture.[20]

A study by *Varmazyar*[17] about organizational culture and its effect on organizational effectiveness showed that there was a significant difference between the ideal and present situation on the individual creativity dimension of organizational culture, and also indicated that people did not welcome difficult situations and did not show interest in finding solutions in dealing with difficulties. Another research in *Insurance Organization* (1999) showed a considerable difference between the prevailing organizational culture and the intended culture.[18] The university had an effective role in culture development, and the faculty members could also have an influential role in the cultural promotion of the society.[17,19]

Given their important role in organizational culture and netiquette, this research attempted to investigate and correlate these two cultures in IUMS.

MATERIALS AND METHODS

The research was of a descriptive type. The research population consisted of IUMS faculty members in 2008. From a population including 594 academic members, 138 people were selected through the use of cluster sampling. This study used a closed-ended questionnaire with a Likert Scale. The netiquette questionnaire was validated by professionals and the Cronbach alpha for the questionnaire was 89%.

According to the most recent research by *Rabbins*,[21] the organizational culture questionnaire was planned on the basis of seven original factors that formed culture, and was determined in the following nine categories: *Innovation, decision-making, risk-taking, focusing on details, considering members of the organization, favoring the team, regarding achievements,* and *seeking stability* and *courage*.[22]

The questionnaires were distributed and the faculty members completed both questionnaires.

The organizational culture questionnaire was validated by professionals and the reliability of the questionnaire was examined

Table 1: Comparison of mean score components of organizational culture, with the netiquette of IUMS faculty

	Netiquette		
	Pearson coefficient correlation	Mean	*n*
Innovation	0 / 406	0 / 001	138
Risk-taking	0 / 349	0 / 001	138
Focusing on details	0 / 198	0 / 020	138
Regarding Achievements	0 / 296	0 / 001	138
Considering Members of the Organization	0 / 360	0 / 001	138
Decision-making	0 / 319	0 / 001	138
Favoring the Team	0 / 338	0 / 001	138
Courage	0 / 466	0 / 001	138
Seeking-stability	0 / 436	0 / 001	138

Table 2: Correlation between organizational culture and netiquette

	Netiquette		
	Pearson coefficient correlation	Mean	*n*
Organizational culture	0 / 358	0 / 001	138

Table 3: Comparison of organizational culture components of faculty member with respect to gender

	Female		Male		*t*	Sign.(two-tailed)
	Mean	Std. deviation	Mean	Std. deviation		
Innovation	2 / 92	0 / 903	2 / 74	0 / 767	1 / 17	0 / 241
Risk-taking	2 / 74	0 / 850	2 / 52	0 / 680	1 / 46	0 / 148
Focusing on details	3 / 34	1 / 36	2 / 95	0 / 641	2 / 30	0 / 022
Regarding Achievements	3 / 07	0 / 554	3 / 18	0 / 520	-1 / 16	0 / 247
Considering members of the organization	2 / 90	0 / 837	2 / 82	0 / 789	0 / 542	0 / 589
Decision-making	2 / 91	0 / 791	2 / 65	0 / 814	1 / 73	0 / 085
Favoring the team	3 / 02	0 / 724	2 / 66	0 / 788	2 / 48	0 / 014
Risk-taking	3 / 08	0 / 547	2 / 74	0 / 696	2 / 77	0 / 006
Seeking stability	3 / 09	0 / 688	2 / 76	0 / 682	2 / 58	0 / 011

by the *Cronbach alpha*, and it was 97%. Items were measured using a Five Point Likert Scale. Data analysis was conducted on a descriptive statistics level using descriptive statistical measures such as frequency, percentile, and an inferential statistics level and using statistical tests through the use of the SPSS software. The hypothesis was tested on a 5% significance level, in other words the type one error was equal to 5%, and therefore, the confidence level was 95%. The Pearson correlation coefficient was used to examine the relationship between any of the organizational culture components with netiquette, and also a one-way analysis of variance was used to compare the faculty members' scores with respect to degree, tenure, and scientific status on organizational culture dimensions. Moreover, the Least Significant Difference (*LSD*) and *Sheffe* tests were used for mean difference pair comparisons and a t-test was used to compare the faculty member's scores, with respect to gender characteristics on organizational culture dimensions.

The *Pearson* correlation coefficient was used to examine the relationship between the IUMS faculty members' organizational culture and netiquette. As shown in Tables 1 and 2, the correlation coefficient between the organizational culture and netiquette was significant $P \leq 0 / 05$. So, there is a relationship between the organizational culture and netiquette of the IUMS faculty members.

The independent sample *t*-test was used for comparison of organizational culture components of faculty member with respect to gender. As Table 3 shows, there is a difference between *favoring the team*, *risk-taking*, *seeking stability*, and *focusing on details* of the faculty members, with respect to gender.

The LSD test was used to compare the pairwise difference between the faculty member tenure and their attention to outcomes. On the basis of Table 4, there was a difference between faculty members' opinions with 1 – 5, 6, 10, 6 – 10, and 21 – 25 years of tenure.

As shown in Tables 5 and 6, the IUMS organizational culture and netiquette is lower than the optimal level. The optimal level is upper than the mean (mean = 3).

DISCUSSION

There is a relationship between the IUMS faculty members' organizational culture and netiquette. This finding is consistent with *Iravani's* finding in the Isfahan university.[12]

According to *Iravani's* findings, the organizational culture of the Isfahan University has a gap, with optimal organizational culture.[12] Her findings showed that with respect to *innovation*, *decision-making*, *risk-taking*, *considering members of the organization*, *favoring the team*, *seeking stability*, and *courage*, *the* critical value of the table was smaller than the moderate level, at a 0/05 error level. Therefore, the dominance of these elements was smaller than the moderate level. Following computation of the total mean, the dominance of organizational culture was smaller than the moderate level.

The optimal level is three or greater, whereas, the resultant mean of the Isfahan faculty members was 2/05 and had a difference in the optimal organizational culture. Therefore, in order to reach the optimal organizational culture and its characteristics, the organization must take effective steps.[12]

With respect to Table 6 in terms of *innovation*, *considering members* of the organization, *decision-making*, *regarding achievements*, *risk taking*, *considering members of the organization*, *favoring to the team*, *seeking stability* and *courage* is smaller than moderate level from table critical value in 0 / 5 error level.

Thus, the dominance of these elements was smaller than the moderate level, and generally it could be said that the IUMS organizational level had a distance from the desired organizational level. The results were similar to the *Darabi* research in the *Tarbiat Modarres University*.[19] Hence, more attention had to be be paid to the University's Organizational Culture.[19] *Eskandary*[18] found a significant difference between the existent and optimal situation of the organizational culture in the *Insurance Organization*, for the tested characteristics.

Iravani, also found no significant difference with respect to

Table 4: Comparison of pairwise difference between faculty member tenure and their attention to outcomes		
	Mean difference	Significance level
1 – 5 6 – 10	0 / 351	0 / 007
6 – 10 21 – 25	- 0 / 424	0 / 005

Table 5: Comparison of the mean score netiquette of the IUMS Faculty				
	Mean	Std. deviation	Std. error mean	*t*
Individual	2 / 74	0 / 411	0 / 034	- 7 / 334
Administrative	2 / 949	0 / 694	0 / 089	- 0 / 858
Departments	2 / 415	0 / 669	0 / 057	- 10 / 242
Investigation	2 / 862	0 / 657	0 / 055	- 2 / 461
Financial	2 / 111	0 / 774	0 / 065	- 13 / 491
Average	1 / 847	0 / 831	0 / 070	- 16 / 280

Table 6: Comparison of the mean score organizational culture of the IUMS Faculty				
	Mean	Std. deviation	Std. error mean	*t*
Innovation	2 / 80	0 / 810	0 / 0690	-2 / 870
Risk-taking	2 / 588	0 / 738	0 / 0628	-6 / 553
Focusing on details	3 / 070	0 / 930	0 / 0792	0 / 892
Regarding achievements	3 / 154	0 / 531	0 / 0452	3 / 405
Considering members of the organization	2 / 760	0 / 812	0 / 0691	-3 / 458
Decision-making	2 / 733	0 / 813	0 / 0692	-3 / 849
Favoring the team	2 / 771	0 / 785	0 / 0668	-3 / 420
Risk-taking	2 / 843	0 / 672	0 / 0572	-2 / 743
Seeking stability	2 / 865	0 / 698	0 / 0594	-2 / 254
Average	2 / 576	0 / 427	0 / 0450	-9 / 386

achievements, but found a significant difference in other elements, similar to the Insurance Organization.[12]

These findings indicate that management at the IUMS, in comparison to the *Insurance Organization,* pays attention to the outcomes or results and not to the methods or procedures that must be used to reach these outcomes.[18]

In another research in IUMS, in 2003, the organizational elements were assessed on the basis of seven characteristics *of Rabbins*.[21] Only *focusing on details* was low, but on the whole, the organizational culture was strong. The University had a stronger organizational culture than the Isfahan University. Thus people must be encouraged to further analyze issues both in the Isfahan University and IUMS.[20]

Varmazyar's research on organizational culture and its effect on the organization showed that there was a significant difference between the existent and optimal situations on individual creativity dimension, indicating limited responsibility, act freedom, and individual's autonomy. So, *individual creativity* was at low level.[17]

There is a significant difference in the existent and optimal situation in terms of *risk-taking,* indicating that people do not welcome a difficult situation and do not show an interest in finding solutions for dealing with difficulties.[17] Culture in organization is offered as a determinant factor of the organization borderline that offers a sense of identity to organization members and also creates a kind of commitment in individuals. Moreover it can maintain social systems and also, as a control factor, can form the employee's behavior.[11]

In IUMS, individual commitment to the organization must be enhanced in order to enhance its stability as a social system. Given its nature, creativity donates unknown and brings risk with itself. That of course may not lead to satisfactory results with respect to the amount of investments. However, a failure in investment for creating it can create a special situation that can lead to failure of the organization. Hence, many researchers and scholars have stressed that attention be paid to this issue, for example *Shompter* as a pioneer has cited the importance of this question for an institutions' successes and its effect on society.[12,22] According to *Iravani's* findings,[12] the Isfahan University faculty members' netiquette had a distance with optimal netiquette. Following the mean computation, the netiquette dominance was smaller than the moderate level. The optimal level was a mean of 3 or greater, while the resultant mean of the Isfahan faculty members was 2 / 65. The one for IUMS was 1 / 83 according to the table, and was lower than the optimal level in the Isfahan University.

Sturges carried out a study about netiquette and its effect on digital librarianship, among librarians, and stressed on the ethics in computer networks, which play a great role in data transaction.[14]

Evaluating the IUMS and non-optimal individual network

scores, the importance of ethics in an individual's network must be addressed in the IUMS.

Spinks et al.[13] believed that observing netiquette could enhance the scientific level of the faculty members in business disciplines, while no difference was observed between the faculty members' netiquette scores in terms of scientific status, in this research.

Thompson and Lloyd[15] in their research conclude that the electronic mail must be organized precisely in business, as they can be sent to different people without any change in their content or can beconnected to other messages and sent to individuals.

With respect to the questionnaire result, a majority of the people are cautious about sending similar electronic mails and desire organizing it. *Thompson* indicates the necessity of electronic mail management.

In a research in *Australia,* 90% of the people pretest sending chain mails according to findings from a research tool, in medical sciences, a few people have awareness about network security discussions. Therefore, as indicated by *Frankel and Siang,*[2] training in security issues is necessary for faculty members. Hence, awareness of creativity techniques is necessary for managers, students, and researchers. *Sturges,*[14] *Spinks et al.*[13] and *Solomon,*[16] have all emphasized on applying netiquette rules in organizations. This research has addressed cultural preparation and uses training in the university. It also proposes netiquette rules training in public organizations other than the IUMS, for netiquette enhancement and communication convenience on the basics of special manners.

CONCLUSION

With respect to the results of Tables 5 and 6, the organizational culture and netiquette of IUMS is lower than the optimal level, and according to Table 1 there is a relationship between the organizational culture and netiquette of the IUMS faculty members.

Given the studies in the field of the universities' and other public organizations' organizational culture, this domain would need more attention. Furthermore, by optimizing the environment for creative people, planning a feedback system, supporting *risk-taking* individuals, encouraging a positive attitude and a friendly environment, participating of employees in the decision-making process, addressing competent managers' training and recruitment, and organizing organization groups, enhances the organization culture of our country.

Culture in computer networks is as important as culture in organizations, with a difference that communication occurs in virtual space. Whenever people interact with each other and with passing of time, new cultures emerge. Computer network technology forms cultural structure processes (or prevent or block it) in virtual space, and facilitate the development of this process. Compared to research in the physical world, internet

research provides more facilities to anyone who has access to online study. Also compared to interviews, electronic mails make it possible to get more concept clarity, participation, and participator's free will.

In addition, internet research can help people or populations that have no chance or desire to participate in research in the physical world, by providing them an opportunity to express their opinions, as some researchers consider the availability of news groups, server lists, and discussion rooms, for everyone that include virtual space, as a part of public zone.

The lack of their awareness of analyzing their messages until dissemination of research results is the greatest danger threatening virtual space participants. However, if results disseminate in a manner in which the virtual group recognizes its group studies, without its awareness, this might bring about psychological injuries. Hence, internet etiquette and cultural preparation in virtual space must be addressed.

Little research in this domain, paucity of original research, and also lack of awareness of netiquette in our country, necessitate more research efforts in this domain. Our hope is that cultural preparation helps people to improve communication in virtual space.

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