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# Computer-mediated communication as the paradigm: Resistance to technology and the new style of human communication

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# COMPUTER-MEDIATED COMMUNICATION AS THE PARADIGM: RESISTANCE TO TECHNOLOGY AND THE NEW STYLE OF HUMAN COMMUNICATION

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A Thesis

Presented to the

Faculty of

California State University,

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ABSTRACT

This research examined how Computer-Mediated Communication (CMC) fits the paradigm model, focusing on the use of communication media from human communication perspectives. There are two hypotheses addressed: (a) Computer and Internet knowledge and skill, and (b) Face-to-Face (FTF) communication and global awareness. The hypotheses were tested using frequency count and cross-tabulation data treatment by an online and offline questionnaire survey.

The results from this data treatment showed that many users are resistant to adopting CMC not because of a lack of technical knowledge and computer skill, but because of each individual's emotions toward unfamiliarity with the CMC culture. Therefore, this study proved that human communication perspectives are the core of CMC.

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# INTRODUCTION

Computer technology found early success among members of the scientific community because it enabled them to quickly perform extensive calculations and accurately organize data. Therefore, the first era of computer technology focused on efficiently generating accurate answers to given problems. As computer technology matured, the focus shifted to designing user interfaces that allowed even novice users to effectively interact with the technology. Moreover, while in the past computers tended to be stand-alone devices which operated in isolation, increasingly, computers are being connected or networked together, making information available across a wide geographic area. The combination of these two trends -- user-friendly human interfaces and computer networking -- has given rise to systems which provide opportunities for non-specialists to use computer technology. This technology represents a new paradigm in human communications and has impacted areas in business, education, and mass communication. This new form of communication has become known as Computer-Mediated Communication (CMC).

Advances in technology, the computer, and the Internet operation have resulted in a simplified, user-friendly interface. However, many nonprofessionals still insist that there are barriers to using the Internet, whether they are technical obstacles or those that are more reflective of the individual, such as computer "maturity," technological

abilities, or "technophobia." It is within this context that CMC becomes important.

The purpose of this study, then, is to identify how CMC fits the paradigm model, focusing on use of communication media from a human perspective, since Internet use has altered traditional patterns in human communication. Thus, there are two factors which need to be considered in understanding why human communication perspectives are at the core of CMC in this study: (a) the development and movement of information and communication technology, and (b) the impact that CMC has on human communication. To this end, the following chapters describe and examine the evolution of information and communication technologies and look at how CMC -- via the Internet -- represents a paradigm shift.

# CHAPTER ONE

## The History of Information and Communication Technology and Media

The evolution of information systems has a long history compared to the rapid evolution of computer technology. An important aspect of the history of information technology and media deals with channels of communication such as print media, the postal service, and the telephone. Even long before electronic technology appeared, the need for information to be passed among individuals and/or groups existed. Because these forms of media developed over a long evolutionary process, they represent "active metaphors in their power to translate experience into new forms" (McLuhan, 1964, 1994, p. 57). Therefore, this chapter explores the evolution of human communication in general and the technology movement in the United States which played a role in network development. Studying the technology movement in the U.S. provides background on how Computer-Mediated Communication (CMC) is rooted in developments in human communication. Moreover, consideration of past developments of more traditional forms of media provide insight into how advanced technology can be used to enable human communication and influence society.

### History of Media

The history and development of various media such as the postal service, print media, telegraph, and telephone

represent the development of communication media starting with manual operation and transitions to automated electronic technology.

The history of media communication starts with the postal service. The postal service is a reasonable way to exchange messages with others. Nevertheless, the postal service had a problem with slow postal delivery speed as "news was as slow as feet and horses' hoofs; when it arrived, it passed from mouth to mouth and was apt to end up as myth and legend" (Montalbán 1985; Frederick, 1993, p. 23). However, the improvement of the technology established faster transportation systems and provided a solution for slow delivery speed. Also, advanced technology created attributed to greater efficiency in the dispatching and relaying of messages.

At the beginning, printed media had more significant problems than the postal service because distribution of books was limited to an educated upper class. Nevertheless, development of the printing machine served to increase the demand for printed material and literacy became more widespread. Written media began early and improved mostly through great human effort.

Information technology quickly shifted and expanded to electronic media when the technology became available. Growth in communication technology occurred rapidly with the innovation of the electronic telegraph and which developed

into the telephone. In 1876 the first telephone was exhibited, and in the 1990s there are about 400 million telephones worldwide, with 155 million in the United States alone (Frederick, 1993, p. 37). Therefore, the emergence of electronic technologies spawned a digital information society. Utilization of this technology requires a higher degree of knowledge which may make it difficult for some to assimilate.

Hardware Development

It is important to understand the development history of communication media in order to comprehend computer technology because computer technology shifted from being a scientific tool to being a human communication tool.

In 1946, J. Presper Eckert and John Mauchly at the University of Pennsylvania built the first electronic digital computer "ENIAC." The ENIAC design was funded by the U.S. Army for use in constructing computer ballistics tables, to predict the weather, and to make atomic energy calculations. However, in order to do anything useful, the computer required a sequence of very specific and complex instructions. The engineers had to write a program to do anything, and they needed to connect hundreds of wires and arrange thousands of switches in a certain way to program the ENIAC (Friedman & Koffman, 1994, p. 3).

In 1947 when the first generation computers were built The demand was for computers " ... to perform scientific

applications, particularly military contract work" (Burstein, 1986, p. 105). From the end of the 1950s to the early 1960s, the second generation computers were created. In 1964, the third generation computers were developed by using integrated circuits. During the 1970s, computers were used in a larger range of applications because the cost had fallen. The 1970s also marked a technological change that distinguished the fourth generation computers. Then, programmable minicomputers were introduced. These programmable machines were small and inexpensive enough to be purchased by individual users: IBM introduced their microcomputer called the "personal Computer" (Burstein, 1986, p. 114).

For the last 20 years hardware technology has seen sustained performance increases of 18% to 35% per year. This has played a key factor in bringing increased computing power into the home of the average individual (Hennesy & Patterson, 1990).

Software Development

The development of computer hardware is not the only significant factor explaining computer technology's growth and transformation or its shift in use from specialists to nonprofessionals. Software technology developments are also a contributing factor.

As in hardware development, the early stages of software development required specific skills and knowledge because programs were designed for individuals with a technical

background trying to solve a specific problem. The first generation computers were written in machine language, and coding this machine language was tiresome work. In the 1950s second generation programming language "Assembly" was created, and this language translator converted English-like statements into machine language instruction codes (Laudon & Laudon, 1994, p. 213). Then, from the 1950s to the 1970s, the first higher-level language emerged which became known as third generation programming language. Higher-level languages are "Programming languages where each source decoded statement generates multiple statements at the machine-language level" (Laudon & Laudon, 1994, p. 213). Higher-level languages such as Ada, BASIC, C, COBOL, FORTRAN, Lisp, Pascal, and C++ became significantly popular with programmers because they were much easier to use than machine and assembly languages. The majority of higher-level languages were for scientists and/or mathematicians to be used in research and/or developing computer technology. Because they were initially charged with this mission, computer operators needed significant technical knowledge.

Development and History of the Internet

Computer hardware and software were first developed by and for scientists and other specialists: originally, the Internet was also utilized only for scientific purposes. Therefore, initially, operating the Internet required extensive knowledge and understanding of various details of

the network, including network architecture and use protocol. As a result, computer literacy remained limited to a small and specific population. However, with the growth of network technology and its increased availability, the trend is toward simple systems which nonspecialists can use as a practical communication tool.

Computer network history started in the late 1960s when the U.S. Defense Department's Advanced Research Projects Agency (DARPA) founded a high-risk project known as ARPARNET (Advanced Research Projects Agency Network). In 1973, DARPA started a research program investigating techniques and technologies which would enable interlinking packet networks to develop communication protocols. These protocols were to later form the foundation of the Internet protocol (IP). Then, from the late 1970s to early 1980s, highly experimental local area networks and workstations were connected to the ARPARNET, and the network entity became more widely known as the Internet. Also, in the early 1970s, federal support increased the number of users of the ARPARNET from the computer science research community to include part of the general science research community. In 1975, ARPA transferred ARPARNET management as well as the Network Measurement Center to the Defense Communication Agency (DCA, previously known as the Defense Information System Agency) (Computer Science and Telecommunications Board and National Research Council, 1994, p. 238).

The next major event in the history of the Internet was the creation of a high-speed set of connections known as NSFNET (Computer Science and Telecommunications Board and National Science Foundation Network). The NSFNET program maintained high-speed, wide-area computer communication networks originally consisting of a three level structure made up of universities, research institutions, and regional and backbone networks serving the research community (NSF907, 1990). The NSFNET backbone service started from 1986 and consisted of a small number of 56 kbps connections to six nationally-funded supercomputer centers. This program encouraged U.S. academic institutions to connect to the NSFNET and provide remote access to supercomputer centers (NSF907, 1990). The growth of the NSFNET project was an effective combination of government, higher education, business, and industry cooperation which advanced the national agenda to continue research and education (Merit Network, 1992). By 1994, there were more than two million Internet host computers with an ever growing user base of 15 million (Computer Science and Telecommunications Board, 1994, p. 21). Additionally, the Internet already had begun providing various kinds of scientific resources including digital libraries, databases, supercomputers, and remote scientific sensing instruments. Moreover, the Internet advanced researcher interaction and collaboration associated with end users utilizing the Defense Data Network Protocols

of "Transmission Control Protocol/Internet Protocol (TCP/IP)" (NSF907, 1990).

TCP/IP refers to a set of standards for computer communication protocols initially issued by ARPARNET and the U.S. Department of Defense (DOD). There are five protocols but the entire set is known by the names of two of the protocols, TCP/IP. TCP/IP includes three military standard protocols: Internet Protocol (IP), Transmission Control Protocol (TCP), File Transfer Protocol (FTP), Simple File Transfer Protocol (SMTP), and TELNET (Stallings & Van Slyke, 1990, p. 433). Many TCP/IP protocols were successful on the Internet because they were able to deliver the basic services that many end-users needed such as file transfer, electronic mail, and remote login, and they could access a very large number of client and server systems (Gilbert, 1995).

User Millennium

Once the computer technology and network systems became user friendly, making it unnecessary to have a strong computer background for Internet utilization, computer network technologies spread into various areas of the field rapidly. Because the technology of the Internet is maturing and the number of users is increasing, individuals are becoming more skilled in effective usage of the Internet. The protocols available on the Internet are, for the most part, open systems. This means that the methods of data transmission are completely public and non-proprietary. As a

result, computer network technology has spread to various disciplines and has become known as Computer-Mediated Communication (CMC). Walther and Burgoon (1992) described CMC as "... no longer a novelty but a communication channel though which much of our business and social interaction takes place, and this transformation is expected to continue" (p. 51). While access can be obtained with low-cost and obsolete technology such as dial-up connections, gradual migration is possible as funding permits (Dern, 1995, p. 220). The Internet protocols, developed on an ad-hoc basis, have become the default standards. The most eight common protocols are Electronic Mail (email), File Transfer Protocol (FTP), Gopher, Talk and Chat, Netnews/Usenet, Hypertext, HypterText Transfer Protocol (HTTP), and Word-Wide Web (WWW). Therefore, the variety of ways the Internet can be used and its rapid growth have given rise to several classes of Internet users.

Effective Use of the Internet: Business

Public awareness of the Internet increased once the benefits of being "on the Net" for business was articulated clearly (Dern, 1995, p. 220). The reason that the Internet is so effective is because it allows rapid communication with millions of other Internet users which can substantially reduce the sales cycle (Nejmeh, 1994, p. 25). The World-Wide Web (WWW), with its scope and volume of the Internet bandwidth, provides the most valuable service for most

organizations because (a) it meets their demands of overall market trends, (b) it receives attention from high-technology market segments, and (c) it is driven by competing pressures and opinions.

The reason the Internet provides a strong advantage for businesses is "a large number of software development vendors provide Internet-based customer support and maintenance" (Nejmeh, 1994, p. 26). When customers consider purchasing a product and/or service, many times they seek out advice and information from "communities of transaction with those met by communities of interest" (Armstrong & Hagel, 1996, p. 136). Therefore, sometimes the most effective way a company can promote and support a product is to utilize corporate FTP, Gopher, and WWW servers that disseminate timely information such as product announcements, recent strategic alliances, and press releases, to the product's prospective customers (Nejmeh, 1994, p. 25).

Also, utilizing the Internet in a business organization represents a change in communications and cultural patterns because " ... the global nature of the Internet means that information is truly heard around the world rather than to the few people who may have overheard a conversation." (Nejmeh, 1994, p. 27) Internet access in a company means that communication hierarchies are often broken down in the organization.

Effective Use of the Internet: Higher Education

Meanwhile, in education, as the benefits of the Internet became clear, the demand for better technology increased. Hämäläien, Whinston, and Vishink (1996) explained the effective use of the Internet in education: "The wealth of information available on the Internet is already recognized as an invaluable learning resource, and the volume of educational materials shows explosive growth" (p. 56). The key issue of using the Internet in higher education for curriculum and pedagogy is in "... the effective use of information technology resources as a tool to support instruction and learning outcomes" (Green & Gilbert, 1995, p. 13). There are several categories which need to be addressed when considering the use of computer networks in higher education. These include such things as (a) distance education, (b) digital libraries, (c) collaborative learning, (d) curriculum, and (e) teacher-student interaction.

Distance education is used by students who have special needs and purposes, and access to computer resources is typically available on a 24-hour basis. Therefore, it has some impact on school demographics as it opens opportunities to non-residents, part-time students, and senior citizens wishing to further their education (Green & Gilbert, 1995, p. 17) as well as those "living in isolated areas or people with physical limitations" (Watabe, Hämäläien, & Whinston, 1995, p. 141). Moreover, the Internet makes school resources

more accessible and it provides extensive opportunities "working directly with people from other places and cultures, rather than only learning about other places indirectly through books" (Hunter, 1995, p. 87). Improvements in computer network technologies and online technologies encourage computer conferences collaborative learning and distance education (Harasim, et al., 1995, p. 10).

Using digital libraries in higher education has several advantages because digital libraries are electronic resources outside of classrooms. Also, digital libraries are highly accessible and automatically searchable; they are not restricted, as local information can easily be made global. Therefore, digital libraries create learning opportunities for global rather than just local communities.

Collaborative learning environments became possible through the Internet because students and instructors can access networks and libraries on a 24-hour basis from school, home, and work. Students and instructors are able to work together to solve problems through information sharing, knowledge building, and social communication without physically meeting on or off campus (Harasim et al., 1995, p. 30).

Also, the Internet has the potential to change communication methods between students and instructors because online systems do not require face-to-face (FTF) interaction. The Internet also is accessible on a 24-hour

basis: it is not limited by office hours. A student who is having difficulty with a particular topic can formulate a cogent question which can be sent by email to the instructor (Friedman et al., 1995, p. 192) because the Internet is a text-based, asynchronous environment (Harasim, 1990, p. 27). In this way, students who may not normally feel comfortable asking questions can do so, and the instructor has more time to carefully consider other aspects of the student's question which may not be possible in an on-the-fly situation (Harasim et al., 1995, p. 29). The Internet creates an effective learning environment in higher education.

## CHAPTER TWO

## Computer-Mediated Communication as the Paradigm

### Paradigm Shift

Improvements in performance, availability, and user interface in computer network systems has created a new mode of communications in modern society. User demographics have shifted from specialist to nonprofessional and from wealthy to average income households. The trend is toward greater automation of tasks; the average person needs less specialized computer knowledge. Since its emergence, the Internet has gained wide-spread usage and has altered traditional patterns of human communication.

In the early 1990s, average people began to utilize computer technology for non-scientific purposes such business, education, mass communication, and personal communication. This shift required a different perspective from which to understand both technology and human communication. "The result is that CMC studies have the chance to shift toward a more multidisciplinary approach embracing these new media and changing use patterns" (December, 1995, p. 5). The result is a new paradigm known as Computer-Mediated Communication (CMC) which brings together the multitude of possibilities that online usage enables.

CMC contains both technological and human dimensions. However, these two different components have not historically

developed together. In the beginning of the Internet's history, emphasis on technological aspects came first. Kranzberg (1991) quotes William Ogburn's book On Culture and Social Change to show how a significant delay occurs between the development of a technology and its acceptance by a society.

> Many years ago the great sociologist William Fielding Ogburn postulated the concept of 'cultural lag' in terms of human response to technical capabilities. He pointed out that the technologies developed in the preceding century gave mankind the opportunity to bring about a new and better social system, allowing the vast quantity of material goods being turned out by an advancing technology to rebound to the benefit to all of mankind, rather than being confined to a narrow few. However, he also stated that cultural systems and human institutions -- government, legal, and the like -- tend to lag in responding to new opportunities offered by these technical innovations. (Kranzberg, 1991, p. 29)

Likewise, in the early stages of computer network development, individuals in the technology and science community embraced the technological innovations. However, these innovations did not spread to other communities immediately.

Part of the reason why these technological innovations in communications did not influence the non-scientific community was because other communities were satisfied with traditional methods of communication. The term "traditional methods of communication" includes Face-to-Face (FTF) communication, the postal service, and the telephone, but

does not include CMC. The acceptance of CMC can be compared with a paradigm shift that Kuhn (1970) analyzes in his book, The Structure of Scientific Revolutions. Kuhn defines "normal science" or the traditional way of doing things as being firmly based upon one or more past achievements (p. 10). Kuhn explains a "paradigm" as a set of ideas which offers a unique way of doing things as well as allowing room for further investigation (p. 10).

> ... Achievement was sufficiently unprecedented to attract an enduring group of adherents away from competing modes of scientific activity. Simultaneously, it was sufficiently open-ended to leave all sorts of problems for the redefined group of practitioners to resolve. Achievements that share these two characteristics I shall henceforth refer to as 'paradigm,' a term that relates closely to 'normal science.' (Kuhn, 1970, p. 10)

A paradigm provides a base line of truth against which the adherent can compare new findings. Kuhn (1970) said "The existence of the paradigm sets the problem to be solved; often the paradigm theory is implicated directly in the design of apparatus able to solve the problem" (p. 27). For example, a normal individual unaware of CMC would probably not consider the possibility of asking thousands of individuals around the world their opinion on a particular subject even though this is done on regular basis using Usenet. The traditional communication paradigm limits the individual's range of possibilities.

When new paradigms arise, they always do so against a

more traditional background in which anomalies begin to appear (Kuhn, 1970). In the case of CMC, "anomalies" or problems became visible with traditional communication methods (p. 27).

Computer-Mediated Communication

On September 15, 1993, the Clinton Administration formally launched National Information Infrastructure (NII) in rhetorical terms as the aggregate of the nation's networks, computers, software, information resources, developers, and producers (Kahin, 1995, p. 3). One of the major aims of NII includes increasing the quality and availability of access to computer networks. At the same time, computer literacy and Internet literacy increased rapidly.

In October 1993, a Current Population Survey (CPS) quantitatively measured the magnitude of Internet growth. It found that:

> 29.2 million Americans using networked information services either at home or at work;
>
> 19.7 million using such services at work;
>
> 14.7 million using such services, including the Internet, from household computers;
>
> 2.06 million host computers on the Internet in 1993; and
>
> 12.3 million Americans had some from of Internet access (Civille, 1995, p. 179)

Using these survey results, the Internet Society calculated an 81% annual growth rate of Internet host computers between

July 1993 and July 1994. The survey result showed that 14.7 million users access information services from their home computers and indicated that an increasing usage component of the Internet is by individuals (Civille, 1995, p. 179). The number of Internet host machines has increased from 4,852,000 to 9,472,000 from January 1995 to January 1996 (Network Wizards, 1996).

CMC has had an influence on a diverse range of areas such as the economy, mass communication, politics, and individual communities. The growth of computer network technology has had impact on human communication. "The ubiquitous nature of electronic communication has firmly manifested itself in computer-mediated communication" (Steven, 1995, p. 1). Computer networks create a unique form of human communications which cannot be regarded as ordinary face-to-face, verbal, non-verbal, mass communication, intercultural, or interpersonal communication. When using a computer to communicate, normally the user does not see the other user's facial reactions (face-to-face) nor does the user normally hear the other's voice. Interaction between users is limited to text on the computer screen (which is not traditional verbal or non-verbal communication). Also, Internet users are able to easily access other countries' networks and users (extraordinarily intercultural). Finally, users can receive a variety of newspapers, magazines, news information from the Internet (non-standard mass

communications). For these reasons, analysis of CMC has become prevalent. December (1995) explains the challenges involved in studying CMC, " ... The reality of the 1990s involves more complex interactions, many of which take place for non-economic reasons. This growing diversity in how people use on-line communication challenges those studying CMC." Therefore, to understand the implications of CMC, the effects of technology development on the community of its users should be examined.

Old Paradigm and New Paradigm

Although technology continues to develop rapidly, there needs to be consideration for ordinary, non-technical users attempting to utilize computer network technology. It is hard to expect the quick adoption of computer network technology by those other than specialists and scientists. In order to achieve this, individuals need to be aware of changes and be willing to change their own perspectives to assimilate the modern technology. The transition between old and new technology and traditional to new human communication methods can be compared to a paradigm shift. Kuhn (1970) defined a new paradigm and an old paradigm saying, "The new paradigm implies a new and more rigid definition of the field. Those unwilling or unable to accommodate their work to it must proceed in isolation or attach themselves to some other group"(p. 19). Therefore, people who cannot assimilate the new CMC paradigm will continue to live under the old

paradigm without the benefit of computer network technology.

Problems and Anomalies

The motivation for shifting from an old paradigm to a new one is to eliminate anomalies of the old paradigm. While the new paradigm may solve anomalies, some form of resistance normally arises.

> ... The previous awareness of anomaly, the gradual and simultaneous emergence of both observational and conceptual recognition, and the consequent change of paradigm categories and procedures often [are] accompanied by resistance. (Kuhn, 1970, p. 62)

The CMC paradigm shift exposes several kinds of anomalies which include aspects of both technology and traditional human communication with its inherent restrictions of speed, time, place, method, and cost. Despite this, many have difficulty accepting the new CMC paradigm. Ely and Plomp (1991) explain people's resistance to new innovations: "There are people who for various reasons simply do not want change and who want to scuttle the work of agents of change and innovation" (p. 256). The restrictions that an old paradigm and its adherents live by are what specifically fuels the birth of a new paradigm. Kuhn (1970) explained about these restrictions, which lead to a paradigm shift, " ... The enterprise now under discussion has drastically restricted vision. But those restrictions, born from confidence in a paradigm, turn out to be essential to the development of science" (p. 24). Thus, CMC is able to solve

the restrictions and problems of the old paradigm.

Technological Restrictions of the Old Paradigm

The technological aspects of the old paradigm of information technology include the postal service, telephone, newspaper, and facsimile (FAX). These forms of information technology contain several restrictions including speed, time difference, locale, delivery method, and cost.

The postal service, despite tremendous improvements in dispatching and transportation speed compared with the early days of the system discussed in chapter one, has several limitations. Even with the fastest delivery service, mail requires the recipient to wait at least a day. Also, although the sender can specify the mail's delivery time, the selection is usually limited to morning or afternoon. Moreover, one-day delivery service is much more expensive than ordinary postal service. International mail is constrained similarly, and takes more time and is more costly than the domestic mail service.

The telephone is the fastest transmission service within the framework of the old communication paradigm. Furthermore a user can call any other country at any time. Long distance phone calls and international phone calls are costly, and moreover, different telephone companies have different charging systems which vary in rate depending on the time of day. The most inconvenient aspect about using the telephone is that the caller needs to be conscious of the local time of

the other party. Even for domestic calls in the U.S., the number of different time zones, including eastern standard time, central standard time, mountain standard time, and pacific standard time, places restrictions on reasonable usage time frames. It becomes more complicated if the user needs to call overseas as many other countries are on drastically different times and even on different days. For example, a user who lives in Los Angeles in the U.S. standard time zone, and attempts to call Tokyo, Japan, at Monday 2 p.m. connects to Japan at Tuesday 6 a.m. It is in most cases unreasonable to call Japan from Los Angeles at 2 p.m. or earlier than 2 p.m. standard time.

Mass media, such as newspapers, may seem like the fastest way to receive information from other regions of the country. However, in most cases, the newspaper is delivered by person to each individual home once a day. Therefore, the newspaper is not the fastest way of receiving information. It is possible to receive the newspaper in other states from the U.S. and even from other countries, but cost becomes a factor. It is not too surprising that the majority of modern news vendors use CMC techniques to prepare and gather news from remote locations.

Facsimile (FAX) technology works on the same principles as the telephone but the user can send short documents within a matter of a few minutes. However, if the user wishes to send many pages, the time required and the possibility of the

receiving machine jamming needs to be considered. Long transmission times translate to expensive telephone fees. Additionally, in some cases, time difference needs to be considered as with a telephone call. Because a FAX machine is a mechanical device and often is set to alert the receiver of an incoming message, many people prefer not to receive a FAX in the middle of the night.

Technological Freedom of the New Paradigm

Technology which embodies CMC, together with a computer network system such as the Internet, removes the restrictions of the old paradigm.

Postal services have problems with slow speed, delivery time and expensive cost. Telephone services have problems related to time zones and cost. Newspapers have problems with slow speed, delivery time, and cost. FAX, while acceptable for small documents, is impractical for documents with many pages and share the restrictions of telephone communication.

The CMC paradigm solves these restrictions in several ways. First, electronic mail (email) can solve many problems associated with the postal service, telephone, and FAX. With email, a user can send text and/or documents in a couple of minutes to a local or remote foreign location. This transmission is not expensive. Moreover, the sender does not need to consider time differences because transmission is a non-mechanical and silent process.

Likewise, the World-Wide-Web (WWW) solves problems associated with the old paradigm. With a properly configured WWW browser, a user is able to access File Transfer Protocol (FTP), Hypertext Transfer Protocol (HTTP) and Gopher (gopher) information systems. As with email, the user can transfer information in a short time (depending on the file size and connection speed). Usually transmission only takes at most a couple of minutes. Also, the user can access any country with the WWW without incurring additional costs. This is because the information is passed transparently from domain to domain via a router as described in Chapter One.

Thus, the new paradigm resolves many of the old paradigm's technological difficulties through utilization of the Internet.

Resistance to the New Paradigm

CMC solves many of the technological restrictions of the old communication paradigm. However, as a new paradigm, CMC has generated significant resistance from those only familiar with traditional forms of communication.

The first source of resistance to the new paradigm consists of friction between technology, people, and society. At first, computers and Internet networks were developed to aid scientists and specialists. Computers and networks have stubbornly maintained this image despite several technological advancements which had made computer and network operation a lot easier and accessible to the non-

specialist. However, intuitive graphical user interfaces are available which guide even the novice user. Early user interfaces were text oriented and non-intuitive. Users operating a computer or network system would have to spell out commands in a complex command line interface. For this reason, average people latched on to the belief that using a computer required in-depth computer skill and knowledge.

The "Macintosh interface," (developed by Apple Computer Co.) was a major break through in user interface based on the original ideas of the Xparc project of team Xerox.

> The Macintosh interface is based on the use of windows (different portions of the screen devoted to different functions in a flexible and independent manner), the use of a "mouse," icons, and menus (lists of options to be selected) ... The Macintosh employs a consistent interaction style: "pull-down" menus are listed at the top and activated by clicking a mouse, then selected by a further mouse click, and so on. (Launder, 1995, p. 165)

Testing basic operations, users were shown to have 40 to 70 percent improvements in work efficiency over other interfaces when Apple tested basic text editing and spreadsheet operations (Launder, 1995, p. 165). Once the Macintosh human interface was introduced and point-and-click capability become available, more computer users who had no experience with computer operation were able to use them. Point-and-click frees the user from having to remember complicated commands such as those found in DOS and UNIX. This style of interface, which has become available on all major platforms

including PCs, has stimulated the development of many user-friendly Internet software packages. For example, Eudora, an email software package, makes writing email an intuitive operation. It is not necessary to remember email editor key-bindings such as those required by mailx, emacs-rmail, pine, pico, and elm. Even though there will always be some amount of resistance, developments in user interface technology encourage average people to utilize computers and CMC.

The second resistance to the technology is a misconception about availability to the average person. Internet users are rapidly increasing and there are more than three million users of the Usenet news service via Internet alone (Steven, 1995, p. 1). In January 1995, research by Network Wizards (1995) on the number of Internet hosts in the U.S. found:

- com (the Internet commercial provider in the U.S.) -- 1,316,966
- edu (in the U.S. Educational institute) -- 1,133,502

Also, the growth of the Internet hosts between 1992 to 1995 was;

- com -- 628%
- edu -- 366%

This survey illustrates the dramatic growth in the number of Internet hosts and Internet users. Before 1991, there were few Internet providers other than corporations and educational institutions. Therefore, users outside these

realms did not have an opportunity to use the Internet unless they were university students in a technical major or scientists/researchers at a corporation. Various legislation, such as those contained in NII have made it easier for commercial Internet service providers to become widely established. The goal of such legislation has been to provide some form of Internet access to every citizen at a reasonable cost.

Resistance to the Human Communication Aspect of the New Paradigm

Anxiety about new and unknown technology is one source of resistance that the CMC paradigm has encountered. However, the impact that the technology has on human communication is another aspect that needs consideration. Those unfamiliar with CMC have difficultly making the transition because traditional human communication is different under the new paradigm.

CMC has an impact on economics, mass communication, politics, and even individual communities. Because CMC allows users to interact via computer network technology, and because CMC can be used for completely non-technical purposes, individuals have begun to use CMC as a communication tool to share not only raw information but feelings as well. CMC in a real sense, has already spawned new communities. Thus, innovation and development in computer network technology has given rise to a new culture.

Gudykunst and Kim (1984) explain the importance of communication in the formation and survival of culture saying, "The development of human culture is made possible through communication, and it is through communication that culture is transmitted from one generation to another" (p. 4). Because communication is a fundamental element of CMC, the various user cultures can be expected to be combined in novel ways and quickly propagate.

> A genetic relationship exists between the Internet's core technology and its core cultural characteristics ... The Internet will have an equally radical effect on the social, economic, and political structures of the surrounding cultures. As cultures integrate the Internet into their social structures they will gradually adopt the systemic characteristics of the Net. (Strangelove, 1994, p. 7)

Under the old paradigm, without computer network technology cultures can be considered isolated and relatively static. With CMC, a culture becomes dynamic, one in which people depend on the communication flow made possible by computer network technology. People who live in the old paradigm culture will have difficulty interacting with the new paradigm culture because individuals of the old paradigm cannot utilize computer network technology and the exchange of information. Likewise, individuals who rely heavily on CMC have difficulty interacting with those in the old paradigm because they are "strangers." A "stranger" refers to something unknown and unfamiliar (Gudykunst & Kim 1984 p. 20). There is a common misconception that computer network

technology is intended only for specialists and scientific equipment. Because of this, it is of little wonder that computer networks are seen as an "unknown" and "unfamiliar" world. The assumption is that using the Internet requires special skills and significant knowledge. A lack of knowledge about modern technology is a major reason why many individuals are reluctant to step into the new paradigm's culture.

Resistance to the CMC paradigm comes not only from a lack of knowledge and/or misconceptions about the technology. CMC challenges the very way that humans traditionally communicate with one another because CMC has the characteristic of de-emphasizing face-to-face communication with others.

Technically speaking, face-to-face communication is available on the Internet via video conferencing packages such as the CU-SeeMe package created by Cornell University's Information Technology organization. It requires users to have video cameras and other special equipment including a high speed connection. Also, because it taxes the Internet's bandwidth (maximum transmission load) resources heavily, it tends to be problematic and has not gained widespread use.

Digitized sound for speech and graphics can also be sent over the Internet using various protocols (most notably via URLs on the World Wide Web). While interest in the authoring and delivery of these formats continues to grow, the

simplest, quickest, and most reliable way to transmit information on the Internet is text. While other media may displace the use of text, it is unlikely that it will completely replace it.

In CMC, if an individual wishes to send a message to someone, the sender usually does so by typing some text. For some this is a real challenge. Face-to-face communication and speaking is often easier than written communication because with face-to-face communication the speaker can act on nonverbal cues such as the facial reactions of the listener.

Infante, Rancer and Womack (1993) explain nonverbal behavior as a mode of human communication. They state, "Communication occurs when humans manipulate symbols to stimulate meaning in other humans. Symbols are only one of several things that can stimulate meaning. Nonsymbolic behavior can involuntarily stimulate response" (p. 249). Thus, by understanding the other person's non symbolic reaction, additional meaning is extracted. For example, a child might agree to clean his/her room. However, facial reactions can give away the level of enthusiasm the child has for completing the chore. Likewise, tone of voice can contribute emotional meaning in face-to-face communication because " ... if we hear a person speak with a very excited voice, we assume he or she chose to sound excited" (Infante, Rancer, and Womack, 1993, p. 265).

With face-to-face communication, facial reaction and tone of voice are a key part of the communication process. It simplifies the problem of understanding the other person's reaction to the topic of discussion which enables smooth communication. A written communication environment does not permit traditional face-to-face non symbolic cues. This limitation in human communication is another reason for resistance to the new CMC paradigm.

Another source of resistance to the new CMC paradigm is caused by a fear of computer technology itself. Even though the technology has made strides in becoming more "user-friendly," still many people have a fear of computer operation. According to Simonson and Thompson (1990) computer anxiety is defined "as the fear or apprehension felt by the individual when they use computers or when they plan to use computers" (p. 133). Simonson and Thompson (1990) classify four types of behaviors of individuals with computer-phobia:

1 They avoid computers and the area where computers are located.
2 They use excessive caution when using computers.
3 They make negative remarks about computers and computing.
4 They attempt to shorten the time when they have to use computers. (p. 133)

The cause of computer-phobia is the result of a person's misunderstanding of computer network technology. For example, average people still believe that computer

technology is only for specialists. Moreover, operating a computer may be believed to require in-depth knowledge and the memorization of special terminology. Forsythe (1992) used an expert system to illustrate computer-phobia in the essay "Blaming the User in Medical Information: The Cultural Nature of Scientific Practice." Expert systems are computer programs which are knowledge-intensive and used in the area of Artificial Intelligence (AI). Expert systems aid in the decision making process (Forsythe, 1992; Hess, 1995, p. 174).

> Forsythe finds unconvincing the "native" explanation of the AI researchers themselves. Their term for the problem is suggestive of their approach; they speak of "end-user" and think of the problem in terms of a public that suffers from computer phobia. Forsythe argues instead that expert systems tend to go unused because built into their programs are the naive assumptions that their producers have about how to acquire knowledge, what counts as knowledge, and how it is used. (Hess, 1995, p. 174)

Forsythe said computer programmers tend to value what he calls hard knowledge (formal, technical, and quantitative) over soft knowledge (informal, nontechnical, and qualitative). For general situations, the most convenient knowledge is soft knowledge (Forsythe, 1992; Hess, 1995, p. 174). Also, sociologist Star (1991) explains why people prefer soft knowledge in the general case. Soft knowledge tends to be easier to conceptualize and to relate to everyday experience. However, Star and Hess state that, " ... programmers tend to build their view of knowledge into their systems at the expense of more contextualized and socially

laden knowledge" (Star, 1991; Hess, 1995, p. 174). With the developers of the technology focusing on creation of systems which utilize primarily hard knowledge, it is easy to see how a user, accustomed to operating in terms of soft knowledge, can become confused and frustrated.

Fear of CMC can also be the result of the concern that a computer may unpredictably malfunction. Because CMC is an evolving technology, software packages and transfer protocols may be unstable and cause unexpected behavior such as a system crash. Computer viruses are also a notorious source of user problems. Some individuals may fear that a small incorrect operation could cause the loss of vital and irreplaceable data. A single bad experience or knowledge of a bad experience without proper understanding of how it could have been prevented can do significant damage to a user's attitude toward the technology.

Another source of anxiety to the human communication CMC paradigm is communication anxiety. Even if a user overcomes all of the other fears associated with computer usage, he/she may still have communication anxiety. Harasim, Hiltz, Teles, and Turoff (1995) said about this aspect of communication anxiety,

> "Communication anxiety is a common experience for first-time users. It is, however, a fear of not communicating rather than a fear of communicating ... Anxiety associated with whether their message was sent properly and arrived successfully is common among novices." (p. 221)

Communication anxiety can be the second obstacle for the person who has tried to adopt CMC as a new paradigm. Ultimately, this anxiety factor holds an individual back in the old paradigm. If the recipient of the message does not respond immediately, the novice user may assume that the message did not go through. The tendency is to attribute the lack of immediate response to a usage problem. This helps perpetuate the myth that CMC is only effectively employed by computer specialists.

Therefore, resistance to the communication aspect of the new CMC paradigm results from participation in a new unfamiliar culture in which face-to-face communication is rare. It also results from fear of computer network technology and fear of computers. The individual trying to assimilate the new culture of the paradigm may undergo a period of stress and frustration not unlike that which happens with traditional culture shock.

Intercultural Communication and Culture Shock

Making the CMC paradigm shift can be compared with intercultural communication. "Intercultural communication occurs whenever a message produced in one culture must be processed in another culture" (Porter & Samovar, 1991, p. 6). The reason this comparison can be made is because of the tight coupling between culture and communication. Hall (1959) asserts a one-to-one relationship between culture and communication, saying "culture is communication" Moreover,

"communication is culture" (Gudykunst & Kim, 1984, p. 4).

Under the old communications paradigm (or culture), computers are not utilized. Instead, the postal service, telephones, and FAX machines act as the primary communication tools. Under the new CMC paradigm (or culture) computer networks become the central communication tool. There is a culture with computer network technology and a culture without computer network technology, both of them utilizing their own technology and their communication tools in their own ways. When a culture unfamiliar with computer network technology (the old paradigm) becomes aware of and interacts with a culture with computer network technology (the new paradigm), some people from the old paradigm have difficulty understanding or accepting it. It may act as a source of stress. Similarly, when CMC users attempt to function in an environment without computer network technology, they feel pressure and stress by not being able to communicate effectively.

This pressure and stress is similar to the effect of culture shock. Gudykunst and Kim (1984) describe culture shock in the following terms: "At the heart of culture shock is the lack of fitness between 'strangers' subjective experiences and the commonly accepted modes of experience in the unfamiliar surroundings" (p. 226). For the people who decide to stay back in the old paradigm because interacting with computer network technology is unknown and unfamiliar,

Barnlund (1975) defines culture shock as, "a feeling of helplessness, even of terror or anger, that accompanies working in an alien society. One feels trapped in an abused and indecipherable nightmare" (p. 30). The pressure and stress is a result of trying to adapt from the old to the new paradigm. Some individuals find it easier to avoid the new paradigm altogether.

# CHAPTER THREE

## The Survey

### General Statement of the Problem

The rapid growth of CMC has led to paradigm shift in which daily communication is conducted via computer networks. Kuhn (1970) asserts that all paradigm shifts possess a similar life-cycle which begin with small anomalies being identified in an accepted idea or methodology. Although the number of anomalies grows more replete and obvious over time, only after significant opposition to the new paradigm does it establish itself and supersede the old model or theory. In this way the CMC paradigm shift has caused turmoil for individuals of non-technical backgrounds who are unfamiliar with computer network technology. Inexperienced users generally show resistance to utilizing computer network technology.

Specifically, inexperienced computer users often believe that only specialists are qualified to operate computers and computer network technology effectively (Shneiderman, 1991, p. 617). Some users find it hard to accept computer and network technology as suitable for those with non-technical backgrounds. This misguided notion about computer network technology is the root of several reasons why inexperienced users find it challenging to adopt the CMC paradigm.

The first challenge in switching to the CMC paradigm relates to the fear of computer terminology. The word

"computer" itself in some cases can provoke apprehension for new users. Bonsall and Chesebro (1989) comment on the nature of computer terminology saying, "From a rhetorical perspective, personal computers thereby become part of the family of 'power terms,' objects requiring attention and perhaps a set of mastery skills designed to deal with them" (p. 218). These computer "power terms" generate negative images of the computer for variety of reasons. Additionally, because most inexperienced computer users need to refer to an operator's manual or software documentation which may be packed with "power terms," these manuals help reinforce negative impressions of the computer. Hardware and software documentation tends to be "couched in the vocabulary and language habits of the computer experts" (Friedrich, 1983; Bonsall & Chesebro, 1989, p. 68). At the other end of the spectrum, "describing the use of an on-off switch may take six pages or six words, either version rarely making sense to anyone but an engineer who understands it all by osmosis" (Sandberg-Dimet, 1983; Bonsall & Chesebro, 1989, p. 68).

In addition to the intimidating language found in many computer manuals, computer terminology and jargon, in general, frightens inexperienced users (Crawford, 1983; Bonsall & Chesebro, 1989, p. 69). For example, acronyms, which by nature tend to obfuscate, dominate computer science language:

> ... acronyms so permeate the discourse of computer

> scientists the many of that original meanings of the unabbreviated phrases have been lost, and a host of dictionaries, guides, and manuals now exist to define the acronyms (Bonsall & Chesebro 1989 p. 69).

Computer jargon and acronyms intimidate beginners that want to use computer and network technology.

The second obstacle in switching to the CMC paradigm is that inexperienced users generally have the fear of being adversely affected by computer errors. Unexpected computer errors create resistance and fear to computer technology (Hudiburg, 1990, p. 311). Bonsall and Chesebro (1989) describe the nature of computer and technology fear saying, " ... fear can vary for each individual. For some, the fear of any new machine, particularly these powered by electricity, explains their behavior" (p. 218). Launder (1995) explains that a computer operation system is non-trivial for unexperienced users because systems typically provide a plethora of options, even if the user only needs to perform a few operations. This multiplicity of functionality confuses and distracts new users. Launder jests that for these individuals it is, "like trying to turn on the intercom in a jumbo jet cockpit"(p. 127).

Also, until recently, there has been little in the way of computer system standardization. Hence users may become confused when switching over to a new platform. Kerr and Hiltz (1982) remark that even if users work with a similar

operating system, different kinds of error messages and commands on the system cause frustration.

> For example, in order to terminate a session, one might have to enter 'logoff' for one system, 'good bye' for another, and '- -' for a third. It could therefore be argued that 'too much' previous experience could be negatively related to system acceptance.(Kerr & Hiltz, 1982, p. 75)

Because of the unfamiliar environment and the difficulties encountered some users compare it to being lost in foreign country saying, "you're lost in a foreign language"(Peterson & Turkel, 1985; Bonsall & Chesebro, 1989, p. 69). Pederson (1995) describes the initial adjustment to an unfamiliar environment as "The familiar cues have been removed or have been given a different meaning, resulting in responses ranging from vague discomfort to profound disorientation" (p. 1).

Therefore, unexperienced users have several obstacles confronting them in making the switch to the CMC paradigm. These include adjusting to a new and unfamiliar environment, being able to extract the needed information from complicated manuals which often contain confusing acronyms and computer jargon, determining what functionality is required versus what functionality is available, and overcoming the confusion caused by non-standard operating environments.

The initial adjustment to an unfamiliar environment is an adjustment process that has an " ... emotional, psychological, behavioral, cognitive, and physiological

impact on individuals" (Pederson, 1995, p. 1). Thus, stress and anxiety, which can be parallelled to the stress induced by culture shock, is part of the adjustment process. Culture shock is, "a form of personality maladjustment which is a reaction to a temporary unsuccessful attempt to adjust to new surroundings and people" (Lundsted 1963; Gudykunst & Kim, 1984, p. 226). Culture shock tends to put both physical and mental stress on individuals as a result of interacting in an unfamiliar or unpleasant environment. Thus, when an unexperienced user attempts to utilize computer network technology, problems similar to culture shock are encountered.

At the same time, however, the CMC paradigm has created a phenomenon in which communication-apprehensive individuals tend to be more likely to interact via CMC because they

> ... have choices which depending on the design of the system, may include: synchronous or asynchrous mode; control over the readership of items written; entries with signature, pen name or anonymity; use of private or group messages conferences or notebooks; conditional or delayed delivery of messages, serial routing, or routing with approvals incorporated; intra- or intergroup communications; self-defined commands; and alternative interfaces. (Hiltz & Kerr, 1982, p. 134)

When using a computer network system for communication, not only does the new user have to know how to operate the computer, but also needs to understand how to communicate in this non-verbal medium which contains, "missing nonverbal channels" (Hiltz & Turoff, 1993, p. 81). CMC does not employ

traditional communication contextualization cues provided by appearance, nonverbal signals, and features of the physical context (Baym, 1995, p. 139). Some users may be confused or apprehensive about this different set of communication cues (Hiltz & Turoff, 1993, p. 85).

Unlike traditional face-to-face (FTF) interaction, communication-apprehensive individuals can achieve a high degree of insulation from the person or persons he/she is communicating with. When utilizing computer network technology as a communication tool, users are able to control which form of communication to employ when they would like to interact with another person (Kerr & Hiltz, 1982, p. 135). Bonsall and Chesebro (1989) explained the difference between FTF communication and CMC.

> Face-to-face message constructions are characterized by a complex, spontaneous, simultaneous, and immediate collage of verbal, nonverbal, and oral symbols. In contrast, computer-mediated message constructions are characterized by written, critical, deliberate, and delayed symbols. (p. 62)

CMC interaction doesn't resemble traditional FTF communication which incorporates visual, audio, and tactile cues (Baym, 1995, p. 138). Others regard CMC as FTF communication with the "cues filtered out" (e.g., Walther & Burgoon 1992; Baym, 1995, p. 138). Under this model CMC "deprive[s] interactions of salient social cues" (Walther & Burgoon, 1992; Baym, 1995, p. 139). The reduction of FTF cues with CMC causes some users to experience a sense of

"isolation" and "loneliness" (Bonsall & Chesebro, 1989, p. 236).

On the other hand, by diminishing the cues prevalent in FTF, there is also a reduction in communication bias. This is because FTF interaction reveals details about one's age, race, nationality, gender, occupation, and income through appearance and physical features (Bonsall & Chesebro, 1989, p. 61). Under the CMC paradigm, interaction " ... without regard to skin color, ethnic background, or gender differences would seemingly facilitate conflict resolution though intelligent exchanges of points of view" (Ryan, 1992). Less FTF interaction and anonymity of interaction with others is a reason why CMC can reduce inherent prejudice caused by "physical appearance and other features of public identity" (Baym, 1995, p. 140). Thus, communication over the computer network allows users to share their ideas and improve "the quality of life without prejudice and power struggles" (Ryan, 1992).

Emergence of computer communication network technology and international electronic connectivity in the FTF-filtered context have created an "... information civilization that is global" (Masuda, 1982, p. 71). This atmosphere gives users a broader perspective and promotes the concept of being "a world citizen" (Ryan, 1992).

Specific Research and Hypothesis

The main emphasis of this study is to show how CMC fits the paradigm model and to identify the causes for resistance to it. Resistance can be classified into two categories: technological resistance and resistance to the new style of human communication that CMC promotes. These two kinds of resistance occur because of a disparity of cultures. One culture (old paradigm) lacks computer network technology, while computer network technology lies at the center of the CMC culture (new paradigm). Using this assumption, specific research question will be divided in to two categories.

First Hypothesis

It is hypothesized that the amount of CMC culture shock is inversely proportional (negatively correlated) to an individual's knowledge and skill in operating a computer.

To verify this hypothesis, it is important to measure user computer technology acceptance. Kerr and Hiltz (1982) explain why defined acceptance is important because "Acceptance is the degree of willingness of an individual or group to utilize computer-mediated communication systems" (p. 57). Measuring acceptance requires measuring the users' utilization of computer technology. According to Kerr and Hiltz (1982) to measure acceptance, four categories of questions are needed as well as a measurement of "Characteristics of Individuals That May Affect System Acceptance" (p. 60).

I. Individuals are motivated to use the system. They have a task they consider important which can be performed online.
   Attitudes toward task
      1. Relative importance or priority.
      2. Degree of liking or disliking of the task. (Pleasant/unpleasant. Challenging/boring, etc.)

II. They have convenient access to terminals.
   Terminal access
      1. Own versus shard versus no regular access in office.
      2. Availability of terminal to take home.

III. They are completely free to use alternative systems for their communication activities.
   Attitude toward media
      1. Attitude toward computers in general.
      2. Expectations about the specific system.
         I) Anticipated usefulness.
         ii) Anticipated impacts on productivity.
         iii) Anticipated difficulty of use.
      3. Attitude toward alternative media (telephone, letters, travel, etc.).

V. The user understands what the system can do and how to operate it.
   Previous related experience.
      1. Use of computers.
      2. Use of computer terminals.
      3. Use of other computer-based communication systems (Kerr & Hiltz, 1982).

The degree of acceptance as well as " ... the reasons for nonuse must be considered when attempting to relate usage to acceptance"(Kerr & Hiltz, 1982, p. 57). Acceptance can be determined by several factors that "influence acceptance of the technology"(Kerr & Hiltz, 1982, p. 59).

Determining acceptance of computer technology is important in showing why CMC can be regarded as a paradigm. This is because the inverse relationship between knowledge, skill, and anxiety is a characteristic signature of all paradigm shifts. Anxiety causes fear and stress, and it

naturally translates to resistance to the CMC paradigm. For this reason, computer anxiety becomes an indicator in measuring the culture shock of people who interact via CMC.

These results will aid in generalizing CMC user anxiety and defining who, how, and what elements of the environment cause culture shock for new users of computer network technology. It also should help provide an explanation for why people stay in the old paradigm or switch to the new one.

Second Hypothesis

It is hypothesized that CMC diminishes FTF communication and raises global awareness. Global awareness is defined according to McLuhan's (1964) "global village" in which people are familiar with each others' lives just as in a small village even though the individuals may live in different countries. Such scenarios are possible because CMC allows individuals to share values and opinions via FTF-less communication. Bonsall and Chesebro (1989) explained the five variables relating differences between FTF and CMC communication modes, and these five variables are the questions to measure and verify the hypothesis.

1. The channel. (Verbal and non-verbal communication)
2. The discursive mode.(Information efficiency and written communication)
3. Feedback. (Synchoronistic and asynchronisitc communication)
4. Social Roles of the Participants. (Communication bias)
5. The use of time. (Time)

(p. 58-62)

FTF and CMC has significant differences which can be compared

(Bonsall & Chesebro 1989). This makes it possible to define what happens when CMC diminishes FTF communication.

Frederick (1993) defines global communication as

> ...that intersection of disciplines that studies the transborder communication of values, attitudes, opinions, information, and data by individuals, groups, people, institutions, governments, and information technologies, as well as the resulting controversial issues arising from the structure of institutions responsible for promoting or inhibiting such messages among and between nations and cultures. (p. 11)

Using this definition, the survey will show the correlation between CMC and global communication.

Subjects

In addition to a traditional pen and paper style survey, this study utilized the Internet to contact users worldwide. Individuals lacking a computer background or who seldom use the Internet were eliminated from the analysis. Online users (n = 95) were contacted via Usenet posting (Table 1) and invited to participate by requesting an email version of the survey or by filling out a World-Wide-Web form at the URL http://www.kaiwan.com/~konta/pages/thesis/survey.html. (A copy of this HTML form may be found in the APPENDIX B). Survey results were processed automatically via a Common Gateway Interface Script (cgi-script). Usage of the Internet allowed access to the questionnaire from other countries. Participants came from at least 12 countries: .au (Australia), .fi (Finland), .uk (United Kingdom), .nl (Netherlands), .se (Switzerland), .il (Italy), .de (German),

Table 1

Usenet Newsgroups.

| | |
|---|---|
| sci.research | comp.edu |
| comp.human-factors | alt.cyberspace |
| comp.misc | alt.education.distance |
| k12.ed.tech | alt.culture.usenet |
| k12.chat.teacher | alt.education.research |
| k12.ed.tech | alt.culture.internet |
| k12.ed.comp.literacy | |
| misc.education | |

.jp (Japan): academic, .edu (U.S educational institution), and government institution, .gov (U.S. government); and commercial network providers, .com (commercial network provider), .net (commercial network provider).

Offline subjects (n = 138) completed a traditional pen and paper style questionnaire (APPENDIX A). These subjects were selected from students attending California State University, San Bernardino (CSUSB), 1996 regular summer school session (both graduate and undergraduate students), and extended education programs. Students in both technical, computer-related, and non-technical courses were targeted. Subjects ranged from junior high school to college level students, including senior citizens and international students. The total sample size was n = 233.

Instrumentation/Data Collection

Online and offline data collection was conducted from July 23, 1996, to August 14, 1996, by means of a questionnaire consisting of 35 questions. Table 2 shows a brief summary of the questions and variables the

questionnaire attempted to measure. This survey questionnaire used short answer form, Likert scale, and checklist items to ask about the responder's computer skills, Internet knowledge, and perspective on human communication via the Internet.

Table 2

Question Measurement and Variables.

| Variable | Question |
|---|---|
| Computer knowledge | Name of platform |
| Internet knowledge | Correct name of terminologies |
| Computer skill | Programming ability |
| Internet skill | Internet software operation |
| Computer environment anxiety | Fear of using the computer |
| Internet environment anxiety | Fear of using the Internet |
| Computer background | Primarily learn the computer |
| Internet background | Primarily learn the Internet |
| Communication bias | Nationality, gender, age, appearance |
| The use of time | Ignore the time and time differences |
| Distance/location | Contact with other country |
| FTF and Less FTF communication | -Fear of using Internet as communication tool to unknown user<br>-Preference of FTF and reduced-FTF comm. |
| Intercultural communication | -Preference of using native language or other language<br>-Native/first language<br>-The language use on the Internet<br>-Home language |
| Demographic | -Age<br>-Days of use of the Internet a week<br>-Hours of use of the Internet per session |

Data Treatment Procedure

This study uses quantitative research data of a descriptive design. To analyze the data, frequency counts, bivariate correlation analysis, and cross-tabulations were run to determine the relationship between variables, using SPSS Graduate Pack Advanced Version 6.1.

Testing the Hypotheses

In regard to the first hypothesis tested, CMC culture shock is defined as a lack of familiarity with the computer and/or the Internet environment. This was operationally measured by asking about a subject's fear of computers and/or the Internet as well as questions about comfort level when communicating with unknown users. Internet knowledge and skill was operationally measured by asking subjects to identify the specific platform they use for the computer and Internet, asking about their computer programming ability, their ability to use Internet software, and if they knew the correct terms for some common Internet acronyms.

For the second hypothesis tested, diminished FTF communication and increased global interaction (intercultural communication) were operationally measured by items on the questionnaire relating to communication bias, time of use, regard for distance and location, FTF communication, and language usage.

The validity of each hypothesis was measured by chi-square tests ($P > .01$) on cross-tabulation of these items.

Only significant cross-tab results are presented. The answers from the questionnaire are divided into three categories: computer and Internet skills and literacy, perspectives on FTF/interpersonal communication via the Internet, and intercultural communication via the Internet.

Computer and Internet Knowledge and Skill

The first hypothesis asserts that the amount of CMC culture shock does not relate to an individual's knowledge or skill of computers or the Internet. This was measured by inquiring about the degree of fear of using a computer or the Internet because of not knowing how to operate a computer. In addition, questions measured human communication perspectives towards the Internet by asking if computer and Internet knowledge relates to interaction with other users on the Internet, and if this interaction leads to CMC culture shock. In total, eight variables were cross-tabulated in eight ways in regard to the first hypothesis:

1. Computer knowledge and computer skill:
2. Internet knowledge and fear of using the computer;
3. Internet knowledge and fear of using the Internet;
4. Computer skill and fear of using the computer;
5. Computer skill and fear of using the Internet;
6. Internet skill and fear of using the computer;
7. Fear of using the computer and FTF and Less FTF communication; and
8. Fear of using the computer and days of using the

computer.

FTF Communication and Intercultural Communication

The second hypothesis asserts that CMC diminishes FTF communication and raises global interaction. These variables were measured with questions about communication bias, time of use, distance/location, degree of FTF communication, and intercultural communication. Communication over the Internet reduces FTF communication and allows users to access information worldwide, making CMC a unique form of human communication. In total, six variables were cross-tabulated in six ways in regard to the second hypothesis.

1. Communication bias over the Internet
2. Time of use of the Internet
3. Distance/location and fear of using computer and Internet environments.
4. FTF communication/less FTF communication over the Internet and fear of using computer and the Internet.
5. The use of the language over the Internet under varying circumstances.
6. Demographic information and utilization of the Internet.

# CHAPTER FOUR

## The Results

In this chapter the results of the survey are presented. First, frequency counts are reported, and the hypotheses are addressed. Finally, several significant cross-tabs are presented.

### Frequency Counts

As Table 3 shows, subjects that participated in this survey were predominantly between the ages of 19 to 25, and accounting for 36.2% of the overall results. Following this group were individuals between 26 to 31 years of age, with frequency of 29.3%. Combined together, 19 to 31 year olds accounted for 65.5% of the subjects. While the majority of responders to the survey were less than 25 years of age, survey participants in higher age categories were also present.

Table 3

Age.

| Age | n | % |
|---|---|---|
| 12-18 | 4 | (1.7%) |
| 19-25 | 84 | (36.2%) |
| 26-31 | 68 | (29.3%) |
| 32-38 | 32 | (13.8%) |
| 39-45 | 25 | (10.8%) |
| 46-52 | 12 | (5.2%) |
| 53-58 | 6 | (2.6%) |
| 65+ | 1 | (0.4%) |
| Total | 232 | (100%) |

The first section of the questionnaire measured the participants' computer literacy and Internet knowledge. This was achieved by inquiring about usage frequency, application competency, and testing for specific knowledge.

In response to the question of the number of days that the Internet is used per week, the highest percent response was seven days (19.1%), followed by one day per week (17.8%) and then five days per week (17.8%). Results are shown in Table 4.

Table 4

Number of Days Using the Internet Per Week.

| Days | n | % |
|---|---|---|
| 1 day | 41 | (17.8%) |
| 2 days | 22 | (9.6%) |
| 3 days | 30 | (13.0%) |
| 4 days | 11 | (4.8%) |
| 5 days | 41 | (17.8%) |
| 6 days | 16 | (7.0%) |
| 7 days | 44 | (19.1%) |
| I don't use | 25 | (10.9%) |
| Total | 230 | (100%) |

This distribution of results was segmented into two groups: frequent and infrequent users. Infrequent users were defined to be those that use the Internet between one and four days per week, while frequent users are online from five to seven days per week. Infrequent users totaled 44.1% while frequent users made up 42.8% of the results as shown in Table 5. This

study compares the communication perspectives of infrequent and frequent users of the Internet and tests the hypotheses based on these groups.

Table 5

Number of Days Using the Internet: Frequent and Infrequent Users.

| Days | n | % |
|---|---|---|
| 1-4 days | 104 | (45.2%) |
| 5-7 days | 101 | (43.9%) |
| I don't use | 25 | (10.9%) |
| Total | 230 | (100%) |

In response to the question asking about the number of hours the Internet is used per session, the highest frequency of responses was between 30 minutes to one hour (27.3%), seconded by the response between one hour to two hours (23.4%), followed by less than 30 minutes per session (19.5%).

Hence 70.2% of the responders were using the Internet in the range between less than 30 minutes to two hours. When frequent and infrequent groups are viewed in terms of the distribution of results for hours per session, 29.8% of infrequent users responded less than 30 minutes, 33.7% of them responded 30 minutes to one hour, and 26.9% responded one hour to two hours. Thus, 90.4% of infrequent users reported using the Internet range between less than 30 minutes to two hours. Comparatively, 65.3% of the frequent

users responded two hours or less per session. Specifically the distribution consisted of 12.9% responding less than 30 minutes, 26.7% between 30 minutes to one hour, and 25.7% between one hour to two hours. Therefore, for the majority of both infrequent and frequent users, a session time of two hours or less was most common.

Table 6 summarizes responses to the question of where computer skills were primarily acquired. Of the responders, 49.1% primarily learned how to operate a computer in a formal setting, such as school (27.6%), work (19.8%), or a training course (1.7%), while 50% of the responders primarily learned how to operate the computer informally, including by him/herself (40.1%) and/or from friend (9.9%).

Table 6

Where Computer Skills Were Primarily Acquired.

| Where | n | % |
|---|---|---|
| School | 64 | (27.6%) |
| At work | 46 | (19.8%) |
| By myself | 93 | (40.1%) |
| From friend | 23 | (9.9%) |
| Training course | 4 | (1.7%) |
| Never | 2 | (0.9%) |
| Total | 232 | (100%) |

Table 7 summarizes responses to the question about where Internet skills were acquired. 34.3% of responders answered that they learned how to operate the Internet in a formal setting such as school (16.7%), work (15.4%), or training

course (2.2%). More than half, or 61.0%, of the responders reported that they informally learned how to operate the Internet on their own (41.7%) and/or from a friend (19.3%) rather than from school, work, or a training course.

Table 7

Where Internet Skills Were Acquired.

| Where | n | % |
|---|---|---|
| School | 38 | (16.7%) |
| At work | 35 | (15.4%) |
| By myself | 95 | (41.7%) |
| From friend | 44 | (19.3%) |
| Training course | 5 | (2.2%) |
| Never | 11 | (4.8%) |
| Total | 228 | (100%) |

In response to the question asking about Internet competency, only 5.2% of responders indicated that they cannot use the Internet, which 94.8% reported that they operate the Internet, as shown in Table 8.

Table 8

I Cannot Use the Internet.

| | n | % |
|---|---|---|
| Yes | 12 | (5.2%) |
| No | 221 | (94.8%) |
| Total | 233 | (100%) |

Another question asked responders to check which of the following Internet services they could use: email, WWW, FTP,

Gopher, Chat, or Newsgroups. The breakdown of percentages is summarized in Table 9 and consists of email (90.6%), WWW (79.8%), FTP (40.3%), Gopher (39.9%), chat (41.6%), and newsgroups (54.5%). It should be noted that most point and click style WWW browsers also integrate FTP and Gopher functionality so that shell style UNIX commands are not necessary for their operation.

Table 9

What Kind of Internet Operations Participants Could Use.

| | n = 230 | | | 100% |
|---|---|---|---|---|
| I can operate | Yes | | No | |
| | n | % | n | % |
| Email | 221 | (90.6%) | 22 | (9.4%) |
| WWW | 186 | (79.8%) | 47 | (20.2%) |
| FTP | 94 | (40.3%) | 140 | (60.1%) |
| Gopher | 93 | (39.9%) | 140 | (60.1%) |
| Chat | 97 | (41.6%) | 136 | (58.4%) |
| Newsgroups | 127 | (54.5%) | 106 | (45.5%) |

In response to the question investigating computer programming skill, only about half said they could program, as shown in Table 10.

Table 10

I Cannot Program.

| | n | % |
|---|---|---|
| Yes | 112 | (48.1%) |
| No | 121 | (51.9%) |
| Total | 233 | (100%) |

Comparing this result with Internet ability in which 94.8% responders said they can utilize Internet software, only about half of the total responders, 48.1%, reported that they can program. The programming ability question asked participants to indicate which languages they can program.

Table 11 shows the breakdown of percentages for computer programming skill. Basic was the highest percent response with 37.3%, seconded by HTML 33.0%, third C and/or C++ 20.2%, followed by Pascal 19.7%, Assembly 12.9%, Perl/awk/sed 9.0%, and Java 6.9%.

Table 11

Computer Programming Skill.

| | n = 233 | | | 100% |
|---|---|---|---|---|
| I can program | Yes | | No | |
| | n | % | n | % |
| Pascal | 46 | (19.7%) | 187 | (80.3%) |
| C/C++ | 47 | (20.2%) | 186 | (79.8%) |
| Basic | 87 | (37.3%) | 146 | (62.7%) |
| Perl/awk/sed | 21 | (9.0%) | 212 | (91.0%) |
| HTML | 77 | (33.0%) | 156 | (67.0%) |
| Java | 16 | (6.9%) | 217 | (93.1%) |
| Assembly | 30 | (12.9%) | 203 | (87.1%) |

Another question asked the participants what type of operating system they used. In some cases the responder did not know. Table 12 reports the breakdown of percentages for operating systems. Windows (54.9%) had the highest frequency of the responses, followed by MacOs (11.9%) and UNIX (11.9%).

Other responses included WindowsNT (4.9%), DOS (0.9%), and OS/2 (0.9%). However, 14.6% of the responders did not know what operating system they used when using the Internet.

Table 12

The Participants' Percentages of Knowledge of Operation Systems.

| Operation system | n | % |
|---|---|---|
| UNIX | 27 | (11.9%) |
| MacOS | 27 | (11.9%) |
| Windows | 124 | (54.9%) |
| WindowsNT | 11 | (4.9%) |
| DOS | 2 | (0.9%) |
| OS/2 | 2 | (0.9%) |
| I don't know | 33 | (14.6%) |
| Total | 226 | (100%) |

Table 13 summarizes results of Internet knowledge questions which required the participant to write out the correct name of some common Internet acronyms (ftp, faq, and irc). Earlier in the questionnaire, 40.3% of the responders answered that they can use ftp (Table 9), and 39.9% (Table 9) of the responders knew that the abbreviation stands for file transfer protocol. The remaining 60.1% of responders wrote incorrect answers or did not respond at all. Likewise, 54.5% answered that they can use newsgroups, while 42.1% (Table 9) correctly identified FAQ as Frequently Asked Question. 41.6% of the responders answered that they can use a chat system, but only 27.0% (Table 9) of the responders knew IRC stands for Internet Relay Chat.

Table 13

Internet Knowledge Questions: Correct Names of Common Internet Acronyms.

| | n = 233 | 100% |
|---|---|---|
| Terminology | n | % |
| FTP | | |
| True:Right answer | 93 | (39.9%) |
| False:Wrong answer | 140 | (60.1%) |
| FAQ | | |
| True:Right answer | 96 | (41.2%) |
| False:Wrong answer | 137 | (58.8%) |
| IRC | | |
| True:Right answer | 63 | (27.0%) |
| False:Wrong answer | 170 | (73.0%) |

The second section of the questionnaire dealt with perspectives of human communication via the Internet. This was used to measure communication bias, time of use, distance and location, face-to-face (FTF) communication, and intercultural communication over the Internet.

Table 14 summarizes responses as to whether participants feel nervous when sending email to an unknown party. Of the responders, 56.3% answered that they did not feel nervous (strongly disagree 24.9%, disagree 31.4%), and 21.8% of the responders feel uncomfortable (agree 17.0%) and very uncomfortable (strongly agree 4.8%) when sending email to unknown parties. The remaining 21.8% of participants were undecided.

Table 14

I Feel Very Nervous When I Am Sending Email to an Unknown User.

| | n | % |
|---|---|---|
| Strongly disagree | 57 | (24.9%) |
| Disagree | 72 | (31.4%) |
| Are undecided | 50 | (21.8%) |
| Agree | 39 | (17.0%) |
| Strongly agree | 11 | (4.8%) |
| Total | 229 | (100%) |

The questionnaire asked if participants have a fear of facing an unknown user on the Internet. Table 15 reports the results. The results were 64.6% of responders don't have a fear of facing an unknown user on the Internet (strongly disagree 31.0% and disagree 33.6%). Nevertheless, 18.6% of responders reported that they have a fear of facing an unknown user on the Internet (agree 13.4% and strongly disagree 5.2%).

Table 15

Fear of Facing an Unknown User on the Internet.

| | n | % |
|---|---|---|
| Strongly disagree | 72 | (31.0%) |
| Disagree | 78 | (33.6%) |
| Are undecided | 39 | (16.8%) |
| Agree | 31 | (13.4%) |
| Strongly agree | 12 | (5.2%) |
| Total | 232 | (100%) |

Responders who feel nervous when sending email to an unknown party also have a fear of facing an unknown user on the Internet, as the response frequency for both questions is nearly identical.

The next group of survey questions asked in greater detail about reactions to human communication on the Internet. These questions focused on comparing Internet communication with FTF communication.

Table 16 shows the results of how participants responded to the question asking if they use the Internet to communicate with others because they feel more comfortable communicating via this medium as opposed to face-to-face (FTF) communication.

Table 16

I Use the Internet to Communicate With Others Because I Feel More Comfortable Than FTF.

| | n | % |
|---|---|---|
| Strongly disagree | 82 | (35.5%) |
| Disagree | 66 | (28.6%) |
| Are undecided | 42 | (18.2%) |
| Agree | 27 | (11.7%) |
| Strongly agree | 14 | (6.1%) |
| Total | 231 | (100%) |

In response, 64.1% of responders strongly disagreed (35.5%) or disagreed (28.6%) that they use the Internet to communicate with others to avoid FTF communication. Also, 17.8% of responders agreed (11.7%) or strongly agreed (6.1%)

that they feel more comfortable communicating over the Internet with others than by FTF communication.

The questionnaire also asked if participants felt more comfortable when expressing themselves on the Internet than when talking in front of people. Table 17 shows the results for this question. Of the responders, 59.5% answered that they strongly disagree (32.2%) or disagree (27.3%), that they feel more comfortable expressing themselves in front of people than expressing themselves on the Internet. On the other hand, 21.1% of the responders agreed (15.4%) or strongly agreed (5.7%) that they can express themselves more comfortably in person than using the Internet.

Table 17

Comfort With Expressing Myself on the Internet Rather Than FTF.

| | n | % |
|---|---|---|
| Strongly disagree | 73 | (32.2%) |
| Disagree | 62 | (28.6%) |
| Are undecided | 44 | (19.4%) |
| Agree | 35 | (15.4%) |
| Strongly agree | 13 | (5.7%) |
| Total | 227 | (100%) |

Table 16 and 17 show the majority of participants felt more comfortable communicating on the Internet. Additionally, from the results shown in Tables 14 and 15, most responders do not feel nervous sending email to unknown parties and do not fear of facing unknown users. It seems

apparent that the majority of responders are not anxious communicating via Internet or via FTF because they have no fear of communicating with unknown users or communicating in front of others face-to-face.

The next group of questions were used to measure communication bias on the Internet and how the participant feels about communicating with users of different nationality, gender, age, and appearance.

Tables 18.1 and 18.2 show how responders react to other users nationalities on the Internet. Of the responders, 76.2% indicated that they don't care about other user's nationality when communicating on the Internet (strongly agree 50.2% and agree 26.0%), 13.0% of responders reported that they do care about the other user's nationality (strongly disagree 3.9% and disagree 9.1%).

Table 18.1

I Don't Care About Other User's Nationality

| | n | % |
|---|---|---|
| Strongly disagree | 9 | (3.9%) |
| Disagree | 21 | (9.1%) |
| Are undecided | 25 | (10.8%) |
| Agree | 60 | (26.0%) |
| Strongly agree | 116 | (50.2%) |
| Total | 231 | (100%) |

Table 18.2 also shows responders reaction to gender: 73.6% of responders marked that they don't care about gender

on the Internet (strongly agree 46.8% and agree 26.8%). Meanwhile, 13.8% reported that gender does matter (strongly disagree 3.0% and disagree 10.8%).

Table 18.2

I Don't Care About Other User's Gender.

| | n | % |
|---|---|---|
| Strongly disagree | 7 | (3.0%) |
| Disagree | 25 | (10.8%) |
| Are undecided | 29 | (12.6%) |
| Agree | 60 | (26.8%) |
| Strongly agree | 116 | (46.8%) |
| Total | 237 | (100%) |

Table 19.1 shows the results to the question asking if the other user's age and appearance is an issue when communicating on the Internet. Of the responders, 73.6% don't care about the other user's age when communicating with others on the Internet (strongly agree 42.0% and agree 31.6%), but 14.3% of them do care about the other user's age (strongly disagree 3.9% and disagree 10.4%). Thus, most of the responders don't care about the other user's age when they communicate on the Internet.

Table 19.2 also summarizes how responders reacted to the issue of another user's physical appearance when communicating on the Internet. Of the responders, 84.5% strongly agreed (56.5%) or agreed (28.0%) that they don't care about other user's appearance when communicating on the

Internet, 4.3% of the responders strongly disagreed (1.7%) or disagreed (2.6%) that they don't care about other users appearance when they communicating on the Internet.

Table 19.1

I Don't Care About Other User's Age.

| | n | % |
|---|---|---|
| Strongly disagree | 9 | (3.9%) |
| Disagree | 24 | (10.4%) |
| Are undecided | 28 | (12.1%) |
| Agree | 73 | (31.6%) |
| Strongly agree | 97 | (42.0%) |
| Total | 231 | (100%) |

Table 19.2

I Don't Care About Other User's Appearance.

| | n | % |
|---|---|---|
| Strongly disagree | 4 | (1.7%) |
| Disagree | 6 | (2.6%) |
| Are undecided | 26 | (11.2%) |
| Agree | 65 | (28.0%) |
| Strongly agree | 131 | (56.5%) |
| Total | 232 | (100%) |

The results in Tables 18.1, 18.2, 19.1, and 19.2 show that the responders who participated in this survey are not generally concerned with the nationality, gender, age, and appearance of other users of the Internet.

The next set of results indicate how responders utilize the computer and the Internet. Table 20 shows the extent

that computer fear exists because of not knowing how to operate the computer. Of the responders, 77.9% strongly disagreed (55.7%) or disagreed (22.2%) to the question "I have a fear of using computers because I don't know how to operate the computer." Meanwhile, 12.6% of the responders strongly agreed (4.3%) or agreed (8.3%) that they have a fear of using the computer because of not knowing how to operate the computer. The majority of participants in this survey indicated that they did not fear the computer.

Table 20

I Have a Fear of Using the Computer.

| | n | % |
|---|---|---|
| Strongly disagree | 128 | (55.7%) |
| Disagree | 51 | (22.2%) |
| Are undecided | 22 | (9.6%) |
| Agree | 19 | (8.3%) |
| Strongly agree | 10 | (4.3%) |
| Total | 230 | (100%) |

Table 21 summarizes the results as to whether responders fear using the Internet because of not knowing how to operate the computer. Only 12.7% of the responders agreed that they have a fear of using the Internet because of not knowing how to operate the computer: 76.9% strongly disagreed (56.8%) or disagreed(20.1%). The results in Table 20 and 21 show that participants in this survey do not fear the computer or Internet because of lack of knowledge.

Table 21

I Have a Fear of Using the Internet.

| | n | % |
|---|---|---|
| Strongly disagree | 130 | (56.8%) |
| Disagree | 46 | (20.1%) |
| Are undecided | 24 | (10.5%) |
| Agree | 29 | (12.7%) |
| Strongly agree | -- | -- |
| Total | 229 | (100%) |

Table 22 shows the results of how responders use email to contact users in another country. Of the responders, 37.7% strongly disagree (24.1%) or disagreed (13.6%) that they use email to contact users in other countries, but 52.6% of the responders strongly agreed (36.8%) or agreed (15.8%).

Table 22

I Use Email to Contact Users From Other Countries.

| | n | % |
|---|---|---|
| Strongly disagree | 55 | (24.1%) |
| Disagree | 31 | (13.6%) |
| Are undecided | 22 | (9.6%) |
| Agree | 36 | (15.8%) |
| Strongly agree | 84 | (36.8%) |
| Total | 228 | (100%) |

Table 23 shows the results to how subjects responded to the time of utilization question regarding email or newsgroup posts. Participants were asked if they would post or send messages late at night or in the early morning. Of the responders, 19.6% strongly disagreed (7.4%) or disagreed

(12.2%) that they would send email or post to newsgroups early in the morning or late at night. Meanwhile, 62.9% of the responders strongly agreed (40.6%) or agreed (22.3%) that they might send or post during these times.

Table 23

I Send Email Even If It Is Late at Night.

| | n | % |
|---|---|---|
| Strongly disagree | 16 | (7.4%) |
| Disagree | 17 | (12.2%) |
| Are undecided | 32 | (14.2%) |
| Agree | 57 | (22.3%) |
| Strongly agree | 103 | (40.6%) |
| Total | 225 | (100%) |

Table 24 shows the response to the question asking if participants ignore the receiver's time difference when sending email or posting to newsgroups. Nearly 20% indicated that they strongly disagree (7.4%) or disagree (12.2%) that the time zone difference cannot be disregarded. Of the responders, 62.9% strongly agreed (40.6%) or agreed (22.3%) that they ignore the receiver's time differences. It is apparent from the results of these questions that participants in this survey, for the most part, are not concerned about the receiver's time zone when posting email or news. The fact that it is safe to ignore time zones is one of the advantages of Internet communication over the traditional phone call where the time zone is always a consideration, especially with international time

differences. The Internet provides an asynchronous means of quickly sending information.

Table 24

I Ignore the Receiver's Time Difference.

| | n | % |
|---|---|---|
| Strongly disagree | 17 | (7.4%) |
| Disagree | 28 | (12.2%) |
| Are undecided | 40 | (17.5%) |
| Agree | 51 | (22.3%) |
| Strongly agree | 93 | (40.6%) |
| Total | 229 | (100%) |

Table 25 shows the results of whether responders indicated that they use email more than postal mail because of email's speed.

Table 25

I Use Email More Than Postal Mail.

| | n | % |
|---|---|---|
| Strongly disagree | 14 | (6.1%) |
| Disagree | 16 | (7.0%) |
| Are undecided | 34 | (14.8%) |
| Agree | 52 | (22.7%) |
| Strongly agree | 113 | (49.3%) |
| Total | 229 | (100%) |

Of the responders, 13.1 % strongly disagreed (6.1%) or disagreed (7.0%) to using email more than postal mail. However, 72.0% of the responders strongly agreed (49.3%) or agreed (22.7%) that they preferred using email to postal mail. Perhaps because of the knowledge that email and news

posting can be made at any time and time zone differences are not relevant (Tables 23 and 24), along with the fact that email tends to be fast, the majority of the responders prefer using email to postal mail.

The following questionnaire results deal with the use of language on the Internet and elsewhere. Tables 26.1 and 26.2 show the responder's first language and the language used at home. The results contained 18 different first languages and 17 different languages used at home.

Table 26.1

First/Native Language.

| Language | n | % |
|---|---|---|
| English | 143 | (63.3%) |
| Chinese | 37 | (16.4%) |
| Japanese | 17 | (7.5%) |
| Indonesian | 6 | (2.7%) |
| Spanish | 4 | (1.8%) |
| Thai | 4 | (1.8%) |
| Arabic | 3 | (1.3%) |
| German | 2 | (0.9%) |
| Korean | 1 | (0.4%) |
| Portuguese | 1 | (0.4%) |
| Finnish | 1 | (0.4%) |
| Persian | 1 | (0.4%) |
| Taiwanese | 1 | (0.4%) |
| Dutch | 1 | (0.4%) |
| Swedish | 1 | (0.4%) |
| Assyrian | 1 | (0.4%) |
| Tagalog | 1 | (0.4%) |
| Czech | 1 | (0.4%) |
| Total | 226 | (100%) |

The highest percentage of responders answered that English is

their first language (63.3%), the second highest native language of the responders is Chinese (16.4%), and the third highest native language is Japanese (7.5%).

Table 26.2 shows the languages the responders use at home. The language most used frequently at the home is also English (69.3%), then Chinese (13.6%) and Japanese (4.8%).

Table 26.2

The Language Used at Home.

| Language | n | % |
|---|---|---|
| English | 158 | (69.3%) |
| Chinese | 31 | (13.6%) |
| Japanese | 11 | (4.8%) |
| Indonesian | 6 | (2.6%) |
| Thai | 4 | (1.8%) |
| Spanish | 3 | (1.3%) |
| Arabic | 3 | (1.3%) |
| English and Japanese | 2 | (0.9%) |
| English and German | 2 | (0.9%) |
| Korean | 1 | (0.4%) |
| Finnish | 1 | (0.4%) |
| Persian | 1 | (0.4%) |
| Dutch | 1 | (0.4%) |
| Swedish | 1 | (0.4%) |
| Assyrian | 1 | (0.4%) |
| English and Spanish | 1 | (0.4%) |
| English and Chinese | 1 | (0.4%) |
| Total | 228 | (100%) |

Table 26.3 summarizes responses to the question asking about the responder's preferred language on the Internet. Of the responders, 89.9% answered that they use English when they use the Internet. The second highest percentage was Japanese (4.8%); the third was Chinese (2.2%).

Table 26.3

The Language Used on the Internet.

| Language | n | % |
|---|---|---|
| English | 205 | (89.9%) |
| Japanese | 11 | (4.8%) |
| Chinese | 5 | (2.2%) |
| Portuguese | 1 | (0.4%) |
| Swedish | 1 | (0.4%) |
| English and Japanese | 1 | (0.4%) |
| English and German | 1 | (0.4%) |
| Indonesian | 1 | (0.4%) |
| Thai | 1 | (0.4%) |
| English and Chinese | 1 | (0.4%) |
| Total | 228 | (100%) |

A question also was asked how the responders feel using a language other than their native language on the Internet. Table 27 summarizes the answers to this question. 36.9% of the responders strongly disagreed (18.2%) or disagreed (18.7%) that they feel uncomfortable using a non-native language other on the Internet.

Table 27

I Feel Uncomfortable Using Language Other Than My First Language.

| | n | % |
|---|---|---|
| Strongly disagree | 41 | (18.2%) |
| Disagree | 42 | (18.7%) |
| Are undecided | 51 | (22.7%) |
| Agree | 46 | (20.4%) |
| Strongly agree | 45 | (20.0%) |
| Total | 225 | (100%) |

On the other hand, 40.4% of the responders strongly agreed (20.0%) or agreed (20.4%) that they feel uncomfortable using the Internet with a non-native language.

Cross-Tabulation Results: Computer and Internet Knowledge and Skill

Table 28 shows the results of the cross-tabulation of programming ability and the type of platform used to access the Internet.

Table 28

I Cannot Program * Platform

| | Platform | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | UNIX | MacOS | Windows | WindowsNT | DOS | OS/2 | Don't know | Row tot |
| I cannot program | | | | | | | | |
| Count | 6 | 8 | 61 | 2 | 1 | 1 | 28 | 107 |
| Exp Val | 12.8 | 12.8 | 58.7 | 5.2 | 0.9 | 0.9 | 15.6 | 47.3 |
| Row Pct | 5.6% | 7.5% | 57.0% | 1.9% | 0.9% | 0.9% | 26.2% | |
| Col Pct | 22.2% | 29.6% | 49.2% | 18.2% | 50.0% | 50.0% | 84.8% | |
| Tot Pct | 2.7% | 3.5% | 27.0% | 0.9% | 0.4% | 0.4% | 12.4% | |
| I can Program | | | | | | | | |
| Count | 21 | 19 | 63 | 9 | 1 | 1 | 5 | 119 |
| Exp Val | 14.2 | 14.2 | 65.3 | 5.8 | 1.1 | 1.1 | 17.4 | 52.7% |
| Row Pct | 17.6% | 16.0% | 52.9% | 7.6% | 0.8% | 0.8% | 4.2% | |
| Col Pct | 77.8% | 70.4% | 50.8% | 81.8% | 50.0% | 50.0% | 15.2% | |
| Tot Pct | 9.3% | 8.4% | 27.9% | 4.0% | 0.4% | 0.4% | 2.2% | |
| Column Total | 27 | 27 | 124 | 11 | 2 | 2 | 33 | 226 |
| | 11.9% | 11.9% | 54.9% | 4.9% | 0.9% | 0.9% | 14.6% | 100% |

The correlation between these variables was Chi-square

Pearson = 32.78, DF = 6, correlation Pearson r = -.33233, p < .01, n = 226. Of the participants, 12.4% answered that they cannot program computers and didn't know the kind of platform they use for the Internet; and 2.2% of the participants who reported that they can program a computer indicated that they didn't know what their primary Internet platform was. The most common platform reported was Microsoft's Windows. The results suggest that computer programming ability does not relate to the participants' knowledge of the type of platform used to access Internet.

Table 29 shows the results of a cross-tabulation of Internet knowledge and fear of using the computer. Internet knowledge was based on whether or not participants knew what the common Internet acronyms FTP (File Transfer Protocol), FAQ (Frequently Asked Questions), and IRC (Internet Relay Chat) stand for. Participants also were asked if they feared using the computer because they do not know how to operate it.

The correlation between fear of using the computer and FTP was Chi-square Pearson = 60.31590, DF = 4, correlation Pearson r = .45735, p < .01, n = 230. For FAQ, correlation was Chi-square Pearson = 54.54101, DF = 4, correlation Pearson r = .44173, p < .01, n = 230. Finally, for IRC, the correlation was Chi-square Pearson = 50.18762, DF = 4, correlation Pearson r = .40324, p < .01, n = 230. The cross-tabulation between the answers for FTP, FAQ, and IRC were

performed using a group variable.

Table 29

Common Internet Acronyms * Fear of Using the Computer

| | I have a fear of using the Computer | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| True:Right Answer | | | | | | |
| Count | 217 | 27 | 4 | 0 | 2 | 250 |
| Row Pct | 86.8% | 10.8% | 1.6% | 0% | 0.8% | 108.7% |
| Col Pct | 169.5% | 52.9% | 18.2% | 0% | 20.0% | |
| Tab Pct | 94.3% | 11.7% | 1.7% | 0% | 0.9% | |
| Tot Pct | 31.4% | 3.9% | 0.6% | 0% | 0.3% | |
| False:Wrong Answer | | | | | | |
| Count | 162 | 126 | 62 | 57 | 28 | 440 |
| Row Pct | 38.0% | 28.6% | 14.1% | 13.0% | 6.4% | 191.3% |
| Col Pct | 130.5% | 247.1% | 281.8% | 300.0% | 280.0% | |
| Tab Pct | 72.6% | 54.8% | 9.0% | 8.3% | 4.0% | |
| Tot Pct | 24.2% | 18.3% | 9.0% | 8.3% | 4.0% | |
| Column Total | 128 55.7% | 51 22.2% | 22 9.6% | 19 8.3% | 10 4.3% | 230 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly Agree

Of the participants 35.3% who strongly disagreed (31.4%) or disagreed (3.9%) to having a fear of using the computer, all had correct answers for the Internet acronyms section. However, 42.5% of participants who strongly disagreed (24.2%) or disagreed (18.3%) to having a fear of using the computer responded incorrectly to all of the Internet acronyms questions. Only 0.3% of the participants strongly agreed to having a fear of using the computer and also correctly answered the Internet terminology questions. Of the participants, 24.2% strongly disagreed with having a fear of

using the computer, but they did not answer all of the Internet terminology questions correctly. Finally, 4.0% of the participants who strongly agreed to having a fear of using the computer also incorrectly answered the Internet terminology questions. These cross-tabulation results suggest that for the participants, having a fear of using the computer does not relate to knowledge of common Internet acronyms FTP, FAQ, and IRC.

Table 30 shows the results of a cross-tabulation between the Internet terminology (FTP, FAQ, and IRC) questions and the participants' fear of using the Internet. The correlation between fear of using the Internet and correct responses to FTP was Chi-square Pearson = 63.79776, DF = 3, correlation Pearson r = .49355, $p < .01$, n = 229. In the case of FAQ, the correlation was Chi-square Pearson = 60.50554, DF = 3, correlation Pearson r = .48322, $p < .01$, n = 229. Finally, the case of IRC, the correlation was Chi-square Pearson = 51.21702, DF = 3, correlation Pearson r = .405990, $p < .01$, n = 229. Additionally the FTP, FAQ, and IRC questions where analyzed as a group variable.

These results show that 35.4% of participants who indicated that they strongly disagreed (32.2%) or disagreed (3.2%) to having a fear of using the Internet correctly answered all the terminology questions. Only 0.4% of the participants who agreed that they have a fear of using the Internet also answered all of the Internet questions

correctly. However, 41.5% of the responders who strongly disagreed (24.6%) and disagreed (16.9%) to having a fear of using the Internet missed at least one of the Internet terminology questions. Of the participants 12.2% agreed that they have a fear of using the Internet and incorrectly answered the Internet terminologies questions. Thus, these cross-tabulation results indicate that the participants' fear of using the Internet does not relate to knowledge of common Internet acronyms (FTP, FAQ, and IRC).

Table 30

Common Internet Acronyms (Group) * Fear of Using the Internet

| | I have a fear of using the Internet | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | Row Tot |
| True:Right Answer | | | | | |
| Count | 221 | 22 | 2 | 3 | 248 |
| Row Pct | 89.1% | 8.9% | 0.8% | 1.2% | 108.3% |
| Col Pct | 170% | 47.8% | 8.3% | 10.3% | |
| Tab Pct | 96.5% | 9.6% | 0.9% | 1.3% | |
| Tot Pct | 32.2% | 3.2% | 0.3% | 0.4% | |
| False:Wrong Answer | | | | | |
| Count | 169 | 116 | 70 | 84 | 439 |
| Row Pct | 38.5% | 26.4% | 15.9% | 19.1% | 191.7% |
| Col Pct | 130.0% | 252.2% | 291.7% | 289.7% | |
| Tab Pct | 73.8% | 50.7% | 30.6% | 36.7% | |
| Tot Pct | 24.6% | 16.9% | 10.2% | 12.2% | |
| Column | 130 | 46 | 24 | 29 | 229 |
| Total | 56.8% | 20.1% | 10.5% | 12.7% | 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree

Table 31 shows the results of a cross-tabulation between fear of using the computer and computer programming ability.

The correlation between these two variables was Chi-square Pearson = 33.56518, DF = 4, correlation Pearson r = -.30996, $p < .01$, n = 230.

Table 31

I Cannot Program * I Have a Fear of Using the Computer

| | I have a fear of using the computer | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I cannot program | | | | | | |
| Count | 40 | 35 | 16 | 13 | 7 | 111 |
| Exp Val | 61.8 | 24.6 | 10.6 | 9.2 | 4.8 | 48.3% |
| Row Pct | 36.0% | 31.5% | 14.4% | 11.7% | 6.3% | |
| Col Pct | 31.3% | 68.6% | 72.7% | 68.4% | 70.0% | |
| Tot Pct | 17.4% | 15.2% | 7.0% | 5.7% | 3.0% | |
| I can program | | | | | | |
| Count | 88 | 16 | 6 | 6 | 3 | 119 |
| Exp Val | 66.2 | 26.4 | 11.4 | 9.8 | 5.2 | 51.7% |
| Row Pct | 73.9% | 13.4% | 5.0% | 5.0% | 2.5% | |
| Col Pct | 68.8% | 31.4% | 27.3% | 31.6% | 30.0% | |
| Tot Pct | 38.3% | 7.0% | 2.6% | 2.6% | 1.3% | |
| Column Total | 128 55.7% | 51 22.2% | 22 9.6% | 19 8.3% | 10 4.3% | 230 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

Of the participants, 32.6% who strongly disagreed (17.4%) or disagreed (15.2%) to having a fear of using the computer indicated that they cannot computer program. Of the eight percent of the participants who strongly agreed (3.0%) and agreed (5.7%) to having a fear of using the computer answered they cannot computer program. However, 41.3% of the participants who strongly disagreed (38.3%) and disagreed (7.0%) to having a fear of using the computer also reported

that they can computer program. Nearly, 4.0% of the participants strongly agreed (1.3%) or agreed (2.6%) to having a fear of using the computer and also indicated they can program a computer. Therefore, the results did not relate to having a fear of using the computer, regardless of whether or not the participants indicated that they could program.

Table 32 shows the results of the cross-tabulation between the fear of using the Internet and computer programming ability. The correlation in this case was Chi-square Pearson = 40.73559, DF = 3, correlation Pearson r = -.39425, $p < .01$, n = 229.

Table 32

I Cannot Program * I Have a Fear of Using the Internet

| | I have a fear of using the Internet | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | Row Tot |
| I cannot program | | | | | |
| Count | 39 | 30 | 18 | 23 | 110 |
| Exp Val | 62.4 | 22.1 | 11.5 | 13.9 | 48.0% |
| Row Pct | 35.5% | 27.3% | 16.4% | 20.9% | |
| Col Pct | 30.0% | 65.2% | 75.0% | 79.3% | |
| Tot Pct | 17.0% | 13.1% | 7.9% | 10.0% | |
| I can program | | | | | |
| Count | 91 | 16 | 6 | 6 | 119 |
| Exp Val | 67.6 | 23.9 | 12.5 | 15.1 | 52.0% |
| Row Pct | 76.5% | 13.4% | 5.0% | 5.0% | |
| Col Pct | 70.0% | 34.8% | 25.0% | 20.7% | |
| Tot Pct | 39.7% | 7.0% | 2.6% | 2.6% | |
| Column Total | 130 56.8% | 46 20.1% | 24 10.5% | 29 12.7% | 229 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

Over 30.1% of the participants who strongly disagreed (17.0%) and disagreed (13.1%) to having a fear of using the Internet also indicated that they cannot program a computer, and 10.0% of the participants who agreed to having a fear of using the Internet answered they cannot program a computer. However, 46.7% of the participants who strongly disagreed (39.7%) or disagreed (7.0%) to having a fear of using the Internet also reported they can program. Also, 2.6% of the participants who agreed to having a fear of using the Internet answered they can program the computer. Therefore, these results indicate that programming ability does not relate to having a fear of using the Internet.

Tables 33.1 and 33.2 show the result of a cross-tabulation between fear of using the computer and number of days of using the Internet per week. The correlation between fear of using the computer and the number of days using the Internet per week was Chi-square Pearson = 53.48803, DF = 8, correlation Pearson $r = -.29082$, $p < .01$, $n = 227$. 52.4% of the participants using the Internet one day a week strongly disagreed (37.5%) or disagreed (15.0%) to having a fear of using the computer. Also, 70% of the participants who answered that they use the Internet four days a week and strongly disagreed (40.0%) or disagreed (30.0%) to having a fear of using the computer, while 30% the participants who use the Internet four days a week strongly agreed (10.0%) and agreed (20.0%) to having a fear of using the computer.

Table 33.1

Number of Days Per Week Using The Internet * I Have a Fear of Using the Computer.

| | I have a fear of using the computer | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| 1 Day | | | | | | |
| Count | 15 | 6 | 11 | 5 | 3 | 40 |
| Exp Val | 22.4 | 9.0 | 3.9 | 3.3 | 1.4 | 17.6% |
| Row Pct | 37.5% | 15.0% | 27.5% | 12.5% | 7.5% | |
| Col Pct | 11.8% | 11.8% | 50.0% | 26.3% | 37.5% | |
| Tot Pct | 6.6% | 2.6% | 4.8% | 2.2% | 1.3% | |
| 2 Days | | | | | | |
| Count | 8 | 8 | 4 | 1 | 1 | 22 |
| Exp Val | 12.3 | 4.9 | 2.1 | 1.8 | 0.8 | 9.7% |
| Row Pct | 36.4% | 36.4% | 18.2% | 4.5% | 4.5% | |
| Col Pct | 6.3% | 15.7% | 18.2% | 5.3% | 12.5% | |
| Tot Pct | 3.5% | 3.5% | 1.8% | 0.4% | 0.4% | |
| 3 Days | | | | | | |
| Count | 11 | 13 | 1 | 4 | 1 | 30 |
| Exp Val | 16.8 | 6.7 | 2.9 | 2.5 | 1.1 | 13.2% |
| Row Pct | 36.7% | 43.3% | 3.3% | 13.3% | 3.3% | |
| Col Pct | 8.7% | 25.5% | 4.5% | 21.1% | 12.5% | |
| Tot Pct | 4.8% | 5.7% | 0.4% | 1.8% | 0.4% | |
| 4 Days | | | | | | |
| Count | 4 | 3 | 0 | 2 | 1 | 10 |
| Exp Val | 5.6 | 2.2 | 1.0 | 0.8 | 0.4 | 4.4% |
| Row Pct | 40.0% | 30.0% | 0.0% | 20.0% | 10.0% | |
| Col Pct | 3.1% | 5.9% | 0.0% | 10.5% | 12.5% | |
| Tot Pct | 1.8% | 1.3% | 0.0% | 0.9% | 0.4% | |
| 5 Days | | | | | | |
| Count | 24 | 15 | 1 | 0 | 0 | 40 |
| Exp Val | 22.4 | 9.0 | 3.9 | 3.3 | 1.4 | 17.6% |
| Row Pct | 60.0% | 37.5% | 2.5% | 0.0% | 0.0% | |
| Col Pct | 18.9% | 29.4% | 4.5% | 0.0% | 0.0% | |
| Tot Pct | 10.6% | 6.6% | 0.4% | 0.0% | 0.0% | |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

Table 33.2

Number of Days Per Week Using the Internet * I Have a Fear of Using the Computer.

| | I have a fear of using the computer | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| 6 Days | | | | | | |
| Count | 14 | 1 | 0 | 1 | 0 | 16 |
| Exp Val | 9.0 | 3.6 | 1.6 | 1.3 | 0.6 | 7.0% |
| Row Pct | 87.5% | 6.3% | 0.0% | 63% | 0.0% | |
| Col Pct | 11.0% | 2.0% | 0.0% | 5.3% | 0.0% | |
| Tot Pct | 6.2% | 0.4% | 0.0% | 0.4% | 0.0% | |
| 7 Days | | | | | | |
| Count | 39 | 4 | 1 | 0 | 0 | 44 |
| Exp Val | 24.6 | 9.9 | 4.3 | 3.7 | 1.6 | 19.4% |
| Row Pct | 88.6% | 9.1% | 2.3% | 0.0% | 0.0% | |
| Col Pct | 30.7% | 7.8% | 4.5% | 0.0% | 0.0% | |
| Tot Pct | 17.2% | 1.8% | 0.4% | 0.0% | 0.0% | |
| I don't use | | | | | | |
| Count | 12 | 1 | 4 | 6 | 2 | 25 |
| Exp Val | 14.0 | 5.6 | 2.4 | 2.1 | 0.9 | 11.0% |
| Row Pct | 48.0% | 4.0% | 16.0% | 24.0% | 8.0% | |
| Col Pct | 9.4% | 2.0% | 18.2% | 31.6% | 25.0% | |
| Tot Pct | 5.3% | 0.4% | 1.8% | 2.6% | 0.9% | |
| Column | 127 | 51 | 22 | 19 | 8 | 227 |
| Total | 55.9% | 22.5% | 9.7% | 8.4% | 3.5% | 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

However, 20.0% of the participants using the Internet once a week strongly agreed (7.5%) or agreed (12.5%) to having a fear of using the computer. The participants who use the Internet seven days a week, 97.7% of them strongly disagreed (88.6%) and disagreed (9.1%) to have a fear of using the computer, and none of them strongly agreed or agreed to having a fear of using the computer. Therefore, these cross-

tabulation results suggest that the number of days using the Internet per week correlates to fear of using the computer.

Table 34.1

Number of Days Per Week Using the Internet * I Have a Fear of Using the Internet.

| | I have a fear of using the Internet | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | Tot Row |
| 1 Day | | | | | |
| Count | 12 | 9 | 9 | 10 | 40 |
| Exp Val | 22.8 | 8.1 | 4.2 | 4.8 | 17.7% |
| Row Pct | 30.0% | 22.5% | 22.5% | 25.0% | |
| Col Pct | 9.3% | 19.6% | 37.5% | 37.0% | |
| Tot Pct | 5.3% | 4.0% | 4.0% | 4.4% | |
| 2 Days | | | | | |
| Count | 8 | 9 | 4 | 1 | 22 |
| Exp Val | 12.6 | 4.5 | 2.3 | 2.6 | 9.7% |
| Row Pct | 36.4% | 40.9% | 18.2% | 4.5% | |
| Col Pct | 6.2% | 19.6% | 16.7% | 3.7% | |
| Tot Pct | 3.5% | 4.0% | 1.8% | 0.4% | |
| 3 Days | | | | | |
| Count | 12 | 11 | 2 | 4 | 29 |
| Exp Val | 16.6 | 5.9 | 3.1 | 3.5 | 12.8% |
| Row Pct | 41.1% | 37.9% | 6.9% | 13.8% | |
| Col Pct | 6.2% | 19.6% | 16.7% | 3.7% | |
| Tot Pct | 5.3% | 4.9% | 0.9% | 1.8% | |
| 4 Days | | | | | |
| Count | 6 | 2 | 0 | 3 | 11 |
| Exp Val | 6.3 | 2.2 | 1.2 | 1.3 | 12.8% |
| Row Pct | 54.5% | 18.2% | 0.0% | 27.3% | |
| Col Pct | 4.7% | 4.3% | 0.0% | 11.1% | |
| Tot Pct | 2.7% | 0.9% | 0.0% | 1.3% | |
| 5 Days | | | | | |
| Count | 26 | 9 | 4 | 1 | 40 |
| Exp Val | 22.8 | 8.1 | 4.2 | 4.8 | 17.7% |
| Row Pct | 65.0% | 22.5% | 10.0% | 2.5% | |
| Col Pct | 20.2% | 19.6% | 16.7% | 3.7% | |
| Tot Pct | 11.5% | 4.0% | 1.8% | 0.4% | |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree.

Table 34.2

Number of Days Per Week Using the Internet * I Have a Fear of Using the Internet

| | I have a fear of using the Internet | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | Tot Row |
| 6 Days | | | | | |
| Count | 15 | 1 | 0 | 0 | 16 |
| Exp Val | 9.1 | 3.3 | 1.7 | 1.9 | 7.1% |
| Row Pct | 93.8% | 6.3% | 0.0% | 0.0% | |
| Col Pct | 11.6% | 2.2% | 0.0% | 0.0% | |
| Tot Pct | 6.6% | 0.4% | 0.0% | 0.0% | |
| 7 Days | | | | | |
| Count | 40 | 2 | 0 | 1 | 43 |
| Exp Val | 24.5 | 8.8 | 4.6 | 5.1 | 19.0% |
| Row Pct | 93.0% | 4.7% | 0.0% | 2.3% | |
| Col Pct | 31.0% | 4.3% | 0.0% | 3.7% | |
| Tot Pct | 17.7% | 0.9% | 0.0% | 0.4% | |
| I don't use | | | | | |
| Count | 10 | 3 | 5 | 7 | 25 |
| Exp Val | 14.3 | 5.1 | 2.7 | 3.0 | 11.1% |
| Row Pct | 40.0% | 12.0% | 20.0% | 28.0% | |
| Col Pct | 7.8% | 6.5% | 20.8% | 25.9% | |
| Tot Pct | 4.4% | 1.3% | 2.2% | 3.1% | |
| Column | 129 | 46 | 24 | 27 | 226 |
| Total | 57.1% | 20.4% | 10.6% | 11.9% | 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree.

Tables 34.1 and 34.2 show the results of a cross-tabulation of fear of using the Internet and number of days of using the Internet per week. The correlation between the variables, fear of using the Internet and days of using the Internet per week was Chi-square Pearson = 52.16189, DF = 6, correlation Pearson r = -.28615, $p < .01$, n = 226. 5.3% of the participants who use the Internet one day a week strongly

disagreed to having a fear of using the Internet while 4.4% of the participants agreed to having a fear of using the Internet. However, 17.7% of participants using the Internet seven days per week strongly disagreed to having a fear of using the Internet, while only 0.4% of them agreed to having a fear of using the Internet. Therefore, days of using the Internet per week negatively correlated to having a fear of using the Internet.

The results from the cross-tabulations for the first hypothesis indicate that for the majority of tests, CMC culture shock is not related to an individual's knowledge and skill in operating a computer. Table 35 shows the summary of cross-tabulation results.

Table 35.

Summary of Tables 28 to 34

| Cross-tabulation | Probability | Supports Hypothesis |
|---|---|---|
| Table 28: I cannot program * Platform | P < .01 | Yes |
| Table 29: Fear of comp * Written question | P < .01 | Yes |
| Table 30: Fear of Internet * Written question | P < .01 | Yes |
| Table 31:I cannot program * fear of comp. | P < .01 | Yes |
| Table 32:I cannot program * fear of Internet | P < .01 | Yes |
| Table 33: Days/week * fear of comp. | P < .01 | Yes |
| Table 34: Days/week * fear of Internet | P < .01 | Yes |

Table 28 compares participants' computer programming ability and knowledge of type of platform used to access the Internet. This test supports the hypothesis because the result shows that the participants computer programming ability did not relate to their knowledge of the type of platform being used to access the Internet.

Likewise, the results summarized in Table 29 support the hypothesis because they show that the participants have a fear of using the computer because of lack the computer skill. Their knowledge of the common Internet acronyms FTP, FAQ, and IRC are not related.

The results in Table 30 support the hypothesis because the results tend to show that the participants' knowledge of common Internet acronyms FTP, FAQ, and IRC were not related to their fear of using the Internet because of a lack of computer skill.

The results in Table 31 also support the hypothesis because they show that the majority of subjects indicated not having a fear of using the computer regardless of programming ability.

Likewise, as Table 32 shows, the participants' fear of using the Internet did not depend on programming ability. Thus this result supports the hypothesis.

The results in Table 33 show that for these participants, the number of days per week of using the Internet does relate to fear of using the computer. These

results support the hypothesis possibly because frequent users do not fear using the computer. They have grown accustomed to the environment. Specific computer knowledge or skill is not an issue.

Table 34 also supports this result by comparing the number of the participants' days per week using the Internet and their fear of using the computer. The results support the hypothesis because they show frequent users of the Internet have less fear of the computer than infrequent users. It is apparent that fear of using the Internet does not relate to Internet knowledge and skill either.

Cross-Tabulation Results: FTF Communication and Global Awareness

Table 36 shows the results of the cross-tabulation between whether or not participants care about the nationality and gender of other users when communicating via the Internet. The correlation between these two variables yields Chi-square Pearson = 354.76660, DF = 16, correlation Pearson r = .65808, $p < .01$, n = 230. Of the participants, 7.8% responded to both nationality and gender by strongly disagreeing (2.2%), strongly disagree-disagreeing (0.4%), and disagreeing (5.2%) that they do not care about the other user's gender or nationality. However, 66.9% of the participants answered that they strongly agree-strongly agree (43.5%), agree-strongly agree (0.4%), strongly agree-agree (3.0%), and agree-agree (20.0%) that they don't care about

Table 36

I Don't Care About Other User's Gender * I Don't Care About Other User's Nationality.

| | I don't care about other user's nationality | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I don't care other user's gender | | | | | | |
| Strongly disagree | | | | | | |
| Count | 5 | 0 | 0 | 0 | 2 | 7 |
| Exp Val | 0.3 | 0.6 | 0.8 | 1.8 | 3.5 | 3.0% |
| Row Pct | 71.4% | 0.0% | 0.0% | 0.0% | 28.6% | |
| Col Pct | 55.6% | 0.0% | 0.0% | 0.0% | 1.7% | |
| Tot Pct | 2.2% | 0.0% | 0.0% | 0.0% | 0.9% | |
| Disagree | | | | | | |
| Count | 1 | 12 | 3 | 7 | 2 | 25 |
| Exp Val | 1.0 | 2.2 | 2.7 | 6.5 | 12.6 | 10.9% |
| Row Pct | 4.0% | 48.0% | 12.0% | 28.0% | 8.0% | |
| Col Pct | 11.1% | 60.0% | 12.0% | 11.7% | 1.7% | |
| Tot Pct | 0.4% | 5.2% | 1.3% | 3.0% | 0.9% | |
| Are undecided | | | | | | |
| Count | 1 | 12 | 3 | 7 | 2 | 25 |
| Exp Val | 1.1 | 2.5 | 3.2 | 7.6 | 14.6 | 12.6% |
| Row Pct | 3.4% | 3.4% | 55.2% | 20.7% | 17.2% | |
| Col Pct | 11.1% | 5.0% | 64.0% | 10.0% | 4.3% | |
| Tot Pct | 0.4% | 0.4% | 7.0% | 2.6% | 2.2% | |
| Agree | | | | | | |
| Count | 1 | 3 | 4 | 46 | 7 | 29 |
| Exp Val | 2.4 | 5.3 | 6.6 | 15.9 | 30.8 | 26.5% |
| Row Pct | 1.6% | 4.9% | 6.6% | 75.4% | 11.5% | |
| Col Pct | 11.1% | 15.0% | 16.0% | 76.7% | 6.0% | |
| Tot Pct | 0.4% | 1.3% | 1.7% | 20.0% | 3.0% | |
| Strongly agree | | | | | | |
| Count | 1 | 4 | 2 | 1 | 100 | 108 |
| Exp Val | 4.2 | 9.4 | 11.7 | 28.2 | 54.5 | 47.0% |
| Row Pct | 0.9% | 3.7% | 1.9% | 0.9% | 92.6% | |
| Col Pct | 11.1% | 20.0% | 8.0% | 1.7% | 86.2% | |
| Tot Pct | 0.4% | 1.7% | 0.9% | 0.4% | 43.5% | |
| Column Total | 9 3.9% | 20 8.7% | 25 10.9% | 60 26.1% | 116 50.4% | 230 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

the other user's gender and nationality. This cross-tabulation result indicates that the communication bias between users because nationality and gender do not relate.

Table 37 shows the results of the cross-tabulation between whether or not participants care about another user's appearance and gender when communicating on the Internet. The correlation between these variables was Chi-square Pearson = 281.59679, DF = 16, correlation Pearson r = .69131, $p < .01$, n = 231. Only 4.3% of the participants indicated with strongly disagree-strongly disagree (1.3%), disagree-strongly disagree (0.4%), strongly disagree-disagree (0.4%) or disagree-disagree (2.2%) that they do not care about other user's appearance and gender. However, 71.0% of the participants responded that they strongly agree-strongly agree (44.2%), agree-strongly agree (2.2%), strongly agree-agree (6.9%), and agree-agree (17.7%) that they do not care about the other user's appearance or gender on the Internet. Thus, this result suggests that the participants' communication bias between other users based on appearance and gender over the Internet are not related.

Table 38 shows the cross-tabulation of whether participants care about the nationality and appearance of other users when communicating on the Internet. The correlation for these variables was Chi-square Pearson = 285.04469, DF = 16, correlation Pearson r = .59850, $p < .01$, n = 231.

Table 37

I Don't Care About Other User's Gender * I Don't Care About Other User's Appearance

| | I don't care about other user's appearance | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I don't care other user's gender | | | | | | |
| Strongly disagree | | | | | | |
| Count | 3 | 1 | 1 | 1 | 1 | 7 |
| Exp Val | 0.1 | 0.2 | 0.8 | 2.0 | 3.9 | 3.0% |
| Row Pct | 42.9% | 14.3% | 14.3% | 14.3% | 14.3% | |
| Col Pct | 75.0% | 16.7% | 3.8% | 1.5% | 0.8% | |
| Tot Pct | 1.3% | 0.4% | 0.4% | 0.4% | 0.4% | |
| Disagree | | | | | | |
| Count | 1 | 5 | 3 | 12 | 4 | 25 |
| Exp Val | 0.4 | 0.6 | 2.8 | 7.0 | 14.1 | 10.8% |
| Row Pct | 4.0% | 20.0% | 12.0% | 48.0% | 16.0% | |
| Col Pct | 25.0% | 83.3% | 11.5% | 18.5% | 3.1% | |
| Tot Pct | 0.4% | 2.2% | 1.3% | 5.2% | 1.7% | |
| Are undecided | | | | | | |
| Count | 0.0 | 0.0 | 16 | 6 | 7 | 29 |
| Exp Val | 0.5 | 0.8 | 3.3 | 8.2 | 16.3 | 12.6% |
| Row Pct | 0.0% | 0.0% | 55.2% | 20.7% | 24.1% | |
| Col Pct | 0.0% | 0.0% | 61.5% | 9.2% | 5.4% | |
| Tot Pct | 0.0% | 0.0% | 6.9% | 2.6% | 3.0% | |
| Agree | | | | | | |
| Count | 0 | 0 | 5 | 41 | 16 | 62 |
| Exp Val | 1.1 | 1.6 | 7.0 | 17.4 | 34.9 | 26.8% |
| Row Pct | 0.0% | 0.0% | 8.2% | 66.1% | 25.8% | |
| Col Pct | 0.0% | 0.0% | 19.2% | 63.1% | 12.3% | |
| Tot Pct | 0.0% | 0.0% | 2.2% | 17.7% | 6.9% | |
| Strongly agree | | | | | | |
| Count | 0 | 0 | 1 | 5 | 102 | 108 |
| Exp Val | 1.9 | 2.8 | 12.2 | 30.4 | 60.8 | 46.8% |
| Row Pct | 0.0% | 0.0% | 0.9% | 4.6% | 94.4% | |
| Col Pct | 0.0% | 0.0% | 3.8% | 7.7% | 78.5% | |
| Tot Pct | 0.0% | 0.0% | 0.4% | 2.2% | 44.2% | |
| Column | 4 | 6 | 26 | 65 | 130 | 230 |
| Total | 1.7% | 2.6% | 11.3% | 28.1% | 56.3% | 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

Table 38

I Don't Care About Other User's Nationality * I Don't Care About Other User's Appearance

| | I don't care about other user's appearance. | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I don't care other user's nationality | | | | | | |
| Strongly disagree | | | | | | |
| Count | 3 | 1 | 1 | 1 | 3 | 9 |
| Exp Val | 0.2 | 0.2 | 1.0 | 2.5 | 5.1 | 3.9% |
| Row Pct | 33.3% | 11.1% | 11.1% | 11.1% | 33.3% | 3.9% |
| Col Pct | 75.0% | 16.7% | 3.8% | 1.6% | 2.3% | |
| Tot Pct | 1.3% | 0.4% | 0.4% | 0.4% | 1.3% | |
| Disagree | | | | | | |
| Count | 1 | 5 | 3 | 3 | 9 | 21 |
| Exp Val | 0.4 | 0.5 | 2.4 | 5.8 | 11.9 | 9.1% |
| Row Pct | 4.8% | 23.8% | 14.3% | 14.3% | 42.9% | |
| Col Pct | 25.0% | 83.3% | 11.5% | 4.7% | 6.9% | |
| Tot Pct | 0.4% | 2.2% | 1.3% | 1.3% | 3.9% | |
| Are undecided | | | | | | |
| Count | 0 | 0 | 15 | 5 | 5 | 25 |
| Exp Val | 0.4 | 0.6 | 2.8 | 6.9 | 14.2 | 10.8% |
| Row Pct | 0.0% | 0.0% | 60.0% | 20.0% | 20.0% | |
| Col Pct | 0.0% | 0.0% | 57.7% | 7.8% | 3.8% | |
| Tot Pct | 0.0% | 0.0% | 6.5% | 2.2% | 2.2% | |
| Agree | | | | | | |
| Count | 0 | 0 | 3 | 47 | 10 | 60 |
| Exp Val | 1.0 | 1.6 | 6.8 | 16.6 | 34.0 | 26.0% |
| Row Pct | 0.0% | 0.0% | 5.0% | 78.3% | 16.7% | |
| Col Pct | 0.0% | 0.0% | 11.5% | 73.4% | 7.6% | |
| Tot Pct | 0.0% | 0.0% | 1.3% | 20.3% | 4.3% | |
| Strongly agree | | | | | | |
| Count | 0 | 0 | 4 | 8 | 104 | 116 |
| Exp Val | 2.0 | 3.0 | 13.1 | 32.1 | 65.8 | 50.2% |
| Row Pct | 0.0% | 0.0% | 3.4% | 6.9% | 89.7% | |
| Col Pct | 0.0% | 0.0% | 1.7% | 3.5% | 45.0% | |
| Column Total | 4 | 6 | 26 | 64 | 131 | 231 |
| | 1.7% | 2.6% | 11.3% | 27.7% | 56.7% | 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

Only 4.3% of the participants responded that they strongly disagree-strongly disagree (1.3%), disagree-strongly disagree (0.4%), strongly disagree-disagree (0.4%), or disagree-disagree (2.2%) to the question that they do not care about the appearance or nationality of another user. However, 71.3% of the participants answered that they strongly agree-strongly agree (45.0%), agree-strongly agree (3.5%) to not caring about an other user's nationality and gender. Thus, the results indicate that another user's appearance and nationality tend not to be a factors in communicating via the Internet.

Table 39 shows the results from a cross-tabulation between the variables of which address whether or not participants care about the age and gender of other users when they communicate on the Internet. These variables yield a correlation of Chi-square Pearson = 437.60309, DF = 16, correlation Pearson r = .75649, $p < .01$, n = 230. Only 9.9% of the participants responded that they do care about the other user's age or gender when communicating on the Internet by answering that they strongly disagree-strongly disagree (2.6%), disagree-strongly disagree (0.4%), strongly disagree-disagree (0.4%), and disagree-disagree (6.5%) to the questions. In contrast, 66.9% of the participants strongly agree-strongly agree (39.6%), agree-strongly agree (3.0%), strongly agree-agree (1.7%), or agree-agree (22.6%) that they do not care about the other user's age or nationality when

Table 39

I Don't Care About Other User's Gender * I Don't Care About Other User's Age.

| | I don't care about other users age | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I don't care about other user's gender | | | | | | |
| Strongly disagree | | | | | | |
| Count | 6 | 1 | 0 | 0 | 0 | 7 |
| Exp Val | 0.3 | 0.7 | 0.9 | 2.2 | 3.0 | 3.0% |
| Row Pct | 85.7% | 14.3% | 0.0% | 0.0% | 0.0% | |
| Col Pct | 66.7% | 4.2% | 0.0% | 0.0% | 0.0% | |
| Tot Pct | 2.6% | 0.4% | 0.0% | 0.0% | 0.0% | |
| Disagree | | | | | | |
| Count | 1 | 15 | 1 | 8 | 0 | 25 |
| Exp Val | 1.0 | 2.6 | 3.0 | 7.8 | 10.5 | 10.9% |
| Row Pct | 4.0% | 60.0% | 4.0% | 32.0% | 0.0% | |
| Col pct | 11.1% | 62.5% | 3.6% | 11.1% | 0.0% | |
| Tot Pct | 0.4% | 6.5% | 0.4% | 3.5% | 0.0% | |
| Are undecided | | | | | | |
| Count | 0 | 3 | 19 | 5 | 2 | 29 |
| Exp Val | 1.1 | 3.0 | 3.5 | 9.1 | 12.2 | 12.6% |
| Row Pct | 0.0% | 10.3% | 65.5% | 17.2% | 6.9% | 2.1% |
| Col Pct | 0.0% | 12.5% | 67.9% | 6.9% | 2.1% | |
| Tot Pct | 0.0% | 1.3% | 8.3% | 2.2% | 0.9% | |
| Agree | | | | | | |
| Count | 0 | 3 | 3 | 52 | 4 | 62 |
| Exp Val | 2.4 | 6.5 | 7.5 | 19.4 | 26.1 | 27.0% |
| Row Pct | 0.0% | 4.8% | 4.8% | 83.9% | 6.5% | |
| Col Pct | 0.0% | 12.5% | 10.7% | 72.2% | 4.1% | |
| Tot Pct | 0.0% | 1.3% | 1.3% | 22.6% | 1.7% | |
| Strongly agree | | | | | | |
| Count | 2 | 2 | 5 | 7 | 91 | 107 |
| Exp Val | 4.2 | 11.2 | 13.0 | 33.5 | 45.1 | 46.5% |
| Row Pct | 1.9% | 1.9% | 4.7% | 6.5% | 85.0% | |
| Col Pct | 22.2% | 8.3% | 17.9% | 9.7% | 93.8% | |
| Tot Pct | 0.9% | 0.9% | 2.2% | 3.0% | 39.6% | |
| Column Total | 9 3.9% | 24 10.4% | 28 12.2% | 72 31.3% | 97 42.2% | 230 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

communicating on the Internet. Note that 39.6% of participants strongly agreed that they do not care about a user's age and gender, the highest percentage of any question. Therefore, neither the age or gender of other users appears to bias communication via the Internet.

Table 40 shows the results of the cross-tabulation between a participant's use of email to make contact with users in another country and whether or not they send email and/or post to newsgroups regardless of the time of day or night. The correlation between these two variables yielded Chi-square Pearson = 128.42354, DF = 16, correlation Pearson $r = .38615$, $p < .01$, $n = 221$. Ten percent of the participants indicated that they both use email and/or post to newsgroups to make contact with users in other countries and that they send email and/or post to newsgroups even if it is late night or early morning by answering that they strongly disagree-strongly disagree (5.0%), disagree-strongly disagree (1.4%) and disagree-disagree (3.6%). However, 46.1% of the participants responded that they strongly agree-strongly agree (29.4%), agree-strongly agree (3.6%), agree-strongly agree (4.1%), and agree-agree (9.0%) to these questions. Thus, participants that send email and/or post to newsgroups to contact users from other countries did not relate to whether the participants send and/or post to newsgroups late at night and/or early in the morning.

Table 40

I Use Email to Contact the Users From Other Countries * I Send Email Even If It Is Late at Night.

| | Use email to contacts the user from other countries | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I send email even its late night | | | | | | |
| Strongly disagree | | | | | | |
| Count | 11 | 3 | 10 | 13 | 16 | 53 |
| Exp Val | 3.8 | 3.6 | 7.4 | 13.4 | 24.7 | 24.0% |
| Row Pct | 20.8% | 5.7% | 18.9% | 24.5% | 30.2% | |
| Col Pct | 68.8% | 20.0% | 32.3% | 23.2% | 15.5% | |
| Tot Pct | 5.0% | 1.4% | 4.5% | 5.9% | 7.2% | |
| Disagree | | | | | | |
| Count | 0 | 8 | 2 | 11 | 8 | 2.1 |
| Exp Val | 2.1 | 2.0 | 4.1 | 7.3 | 13.5 | 13.1% |
| Row Pct | 0.0% | 27.6% | 6.9% | 37.9% | 27.6% | |
| Col pct | 0.0% | 53.3% | 6.5% | 19.6% | 7.8% | |
| Tot Pct | 0.0% | 3.6% | 0.9% | 5.0% | 3.6% | |
| Are undecided | | | | | | |
| Count | 1 | 0 | 12 | 4 | 5 | 22 |
| Exp Val | 1.6 | 1.5 | 3.1 | 5.6 | 10.3 | 10.0% |
| Row Pct | 4.5% | 0.0% | 54.5% | 18.2% | 22.7% | |
| Col Pct | 6.3% | 0.0% | 38.7% | 7.1% | 4.9% | |
| Tot Pct | 0.5% | 0.0% | 5.4% | 1.8% | 2.3% | |
| Agree | | | | | | |
| Count | 1 | 1 | 4 | 20 | 9 | 35 |
| Exp Val | 2.5 | 2.4 | 4.9 | 8.9 | 16.3 | 15.8% |
| Row Pct | 2.9% | 2.9% | 11.4% | 57.1% | 25.7% | |
| Col Pct | 6.3% | 6.7% | 12.9% | 35.7% | 8.7% | |
| Tot Pct | 0.5% | 0.5% | 1.8% | 9.0% | 4.1% | |
| Strongly agree | | | | | | |
| Count | 3 | 3 | 3 | 8 | 65 | 82 |
| Exp Val | 5.9 | 5.6 | 11.5 | 20.8 | 38.2 | 37.1% |
| Row Pct | 3.7% | 3.7% | 3.7% | 9.8% | 79.3% | |
| Col Pct | 18.8% | 20.0% | 9.7% | 14.3% | 63.1% | |
| Tot Pct | 1.4% | 1.4% | 1.4% | 3.6% | 29.4% | |
| Column Total | 16 | 15 | 31 | 56 | 103 | 221 |
| | 7.2% | 6.8% | 14.0% | 25.3% | 46.6% | 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly Agree

Table 41 shows the results of the cross-tabulation regarding whether participants indicated having a fear of using the computer because they do not know how to operate it versus whether they use email and/or post to newsgroups to contact users in other countries. The correlation between these two variables was Chi-square Pearson = 63.74574, DF = 16, correlation Pearson r = -.36686, $p < .01$, n = 226. Of the participants, 11.5% indicated that they strongly disagree to having a fear of using the computer because they do not know how to operate it, but that they use email and/or post to newsgroups to contact users in other countries. Furthermore, no participant strongly agreed to both questions that they do not have a fear of using the computer and they use email and/or post to newsgroups to contact users in another country. However, 30.1% of participants indicated that they do not have a fear of using the computer by answering that they strongly disagree, and yet strongly agreed that they use email and/or post to newsgroups to contact users in other countries. This represents the most common case. Thus, although some participants have a fear of using the computer, the results show that the fear of using the computer did not relate to using email and/or posting to newsgroups to make contact with users from other countries.

Table 42 shows the cross-tabulation results of whether participants fear using the computer versus if they fear facing an unknown user on the Internet. The correlation

Table 41

I Use Email to Contact the User From Other Countries * I Have a Fear of Using the Computer.

| | Use email to contact with users from other countries | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I have a fear of using the computer | | | | | | |
| Strongly disagree | | | | | | |
| Count | 26 | 7 | 8 | 8 | 6 | 55 |
| Exp Val | 30.9 | 12.2 | 5.1 | 4.4 | 2.4 | 24.3% |
| Row Pct | 47.3% | 12.7% | 14.5% | 14.5% | 10.9% | |
| Col Pct | 20.5% | 14.0% | 38.1% | 44.4% | 60.0% | |
| Tot Pct | 11.5% | 3.1% | 3.5% | 3.5% | 2.7% | |
| Disagree | | | | | | |
| Count | 9 | 12 | 4 | 5 | 0 | 30 |
| Exp Val | 16.9 | 6.6 | 2.8 | 2.4 | 1.3 | 13.3% |
| Row Pct | 30.0% | 40.0% | 13.3% | 16.7% | 0.0% | |
| Col pct | 7.1% | 8.0% | 23.8% | 16.7% | 10.0% | |
| Tot Pct | 4.0% | 1.8% | 2.2% | 1.3% | 0.4% | |
| Are undecided | | | | | | |
| Count | 9 | 4 | 5 | 3 | 1 | 22 |
| Exp Val | 12.4 | 4.9 | 2.0 | 1.8 | 1.0 | 9.7% |
| Row Pct | 40.9% | 18.2% | 22.7% | 13.6% | 4.5% | |
| Col Pct | 7.1% | 8.0% | 23.8% | 16.7% | 10.0% | |
| Tot Pct | 4.0% | 1.8% | 2.2% | 1.3% | 0.4% | |
| Agree | | | | | | |
| Count | 15 | 13 | 3 | 1 | 3 | 35 |
| Exp Val | 19.7 | 7.7 | 3.3 | 2.8 | 1.5 | 15.5% |
| Row Pct | 42.9% | 37.1% | 8.6% | 2.9% | 8.6% | |
| Col Pct | 11.8% | 26.0% | 14.3% | 5.6% | 30.0% | |
| Tot Pct | 6.6% | 5.8% | 1.3% | 0.4% | 1.3 | |
| Strongly agree | | | | | | |
| Count | 68 | 14 | 1 | 1 | 0 | 84 |
| Exp Val | 47.2 | 18.6 | 7.8 | 6.7 | 3.7 | 37.2% |
| Row Pct | 81.0% | 16.7% | 1.2% | 1.2% | 0.0% | |
| Col Pct | 53.5% | 28.0% | 4.8% | 5.6% | 0.0% | |
| Tot Pct | 30.1% | 6.2% | 0.4% | 0.4% | 0.0% | |
| Column Total | 127 56.2% | 50 22.1% | 21 9.3% | 18 8.0% | 10 4.4% | 226 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

Table 42

I Have a Fear of Facing an Unknown User on the Internet * I Have a Fear of Using the Computer.

| | I have a fear of using the computer | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I have a fear of facing an unknown user on the Internet | | | | | | |
| Strongly disagree | | | | | | |
| Count | 56 | 8 | 4 | 1 | 2 | 71 |
| Exp Val | 39,5 | 15.7 | 6.8 | 5.9 | 3.1 | 30.9% |
| Row Pct | 78.9% | 11.3% | 5.6% | 1.4% | 2.8% | |
| Col Pct | 43.8% | 15.7% | 18.2% | 5.3% | 20.0% | |
| Tot Pct | 24.3% | 3.5% | 1.7% | 0.4% | 0.9% | |
| Disagree | | | | | | |
| Count | 33 | 34 | 3 | 7 | 1 | 78 |
| Exp Val | 43.4 | 17.3 | 7.5 | 6.4 | 3.4 | 33.9% |
| Row Pct | 42.3% | 43.6% | 3.8% | 9.0% | 1.3% | |
| Col pct | 25.8% | 66.7% | 13.6% | 36.8% | 10.0% | |
| Tot Pct | 14.3% | 14.8% | 1.3% | 3.0% | 0.4% | |
| Are undecided | | | | | | |
| Count | 18 | 4 | 10 | 4 | 2 | 38 |
| Exp Val | 21.1 | 8.4 | 3.6 | 3.1 | 1.7 | 16.5% |
| Row Pct | 47.4% | 10.5% | 26.3% | 10.5% | 5.3% | |
| Col Pct | 14.1% | 7.8% | 45.5% | 21.1% | 20.0% | |
| Tot Pct | 7.8% | 1.7% | 4.3% | 1.7% | 0.9% | |
| Agree | | | | | | |
| Count | 15 | 4 | 4 | 5 | 3 | 31 |
| Exp Val | 17.3 | 6.9 | 3.0 | 2.6 | 1.3 | 13.5% |
| Row Pct | 48.4% | 12.9% | 12.9% | 16.1% | 9.7% | |
| Col Pct | 11.7% | 7.8% | 18.2% | 26.3% | 30.0% | |
| Tot Pct | 6.5% | 1.7% | 1.7% | 2.2% | 1.3% | |
| Strongly agree | | | | | | |
| Count | 6 | 1 | 1 | 2 | 2 | 12 |
| Exp Val | 6.7 | 2.7 | 1.1 | 1.0 | 0.5 | 5.2% |
| Row Pct | 50.0% | 8.3% | 8.3% | 16.7% | 16.7% | |
| Col Pct | 4.7% | 2.0% | 4.5% | 10.5% | 20.0% | |
| Tot Pct | 2.6% | 0.4% | 0.4% | 0.9% | 0.9% | |
| Column Total | 128 55.7% | 51 22.2% | 22 9.6% | 19 8.3% | 10 4.3% | 230 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

between these variables was Chi-square Pearson = 66.07816, DF = 16, correlation Pearson = .29021, $p < .01$, n = 230. Nearly 47% of the participants responded that they have a fear of using the computer and have a fear of facing an unknown user on the Internet by responding that they strongly disagreed-strongly disagreed (24.3%), strongly disagree-disagree (3.5%), disagree-strongly disagree (14.3%), disagree-disagree (14.8%). Only 5.3% of the participants answered that they fear using the computer and fear facing an unknown user on the Internet by answering that they strongly agree-strongly agree (0.9%), strongly agree-agree (0.9%), agree-strongly agree (1.3%), and agree-agree (2.2%). The cross-tabulation results show that these questions of having fear of using the computer and facing an unknown user on the Internet do not relate.

Table 43 shows the results of the cross-tabulation between fear of using the Internet and whether or not the participant uses email and/or newsgroup posts to contact users in other countries. The correlation between these variables was Chi-square Pearson = 58.42386, DF = 12, correlation Pearson r = -.34387, $p < .01$, n = 225. 47.0% of the participants responded to both having fear of using the Internet and using email and/or newsgroup posts to contact the users in other countries by answering strongly disagree-strongly agree (31.1%), strongly disagree-agree (7.1%), disagree-strongly agree (4.4%), and disagree-agree (4.4%).

8.0% of participants agree-strongly disagree (5.3%) or agree-disagree (2.7%) to having a fear of using the Internet and using email and/or newsgroup posts to contact users in other countries. Therefore, there was no relation between a

Table 43

I Have a Fear of Using the Internet * Use Email/Newsgroups to Contact Users From Other Countries

| Use email/newsgroups to contact users from other countries | | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I have a fear of using the Internet | | | | | | |
| Count | 26 | 11 | 6 | 16 | 70 | 129 |
| Exp Val | 31.5 | 17.8 | 12.0 | 19.5 | 48.2 | 57.3% |
| Row Pct | 20.2% | 8.5% | 4.7% | 12.4% | 54.3% | |
| Col Pct | 47.3% | 35.5% | 28.6% | 47.1% | 83.3% | |
| Tot Pct | 11.6% | 4.9% | 2.7% | 7.1% | 31.1% | |
| Disagree | | | | | | |
| Count | 8 | 12 | 5 | 10 | 10 | 45 |
| Exp Val | 11.0 | 6.2 | 4.2 | 6.8 | 16.8 | 20.0% |
| Row Pct | 17.8% | 16.7% | 11.1% | 22.2% | 22.2% | |
| Col pct | 14.5% | 38.7% | 23.8% | 29.4% | 11.9% | |
| Tot Pct | 3.6% | 5.3% | 2.2% | 4.4% | 4.4% | |
| Are undecided | | | | | | |
| Count | 9 | 2 | 7 | 3 | 2 | 28 |
| Exp Val | 6.8 | 3.9 | 2.6 | 4.2 | 10.5 | 12.4% |
| Row Pct | 42.9% | 21.4% | 10.7% | 17.9% | 7.1% | |
| Col Pct | 21.8% | 19.4% | 14.3% | 14.7% | 2.4% | |
| Tot Pct | 5.3% | 2.7% | 1.3% | 2.2% | 0.9% | |
| Agree | | | | | | |
| Count | 12 | 6 | 3 | 5 | 2 | 28 |
| Exp Val | 6.8 | 3.9 | 2.6 | 4.2 | 10.5 | 12.4% |
| Row Pct | 42.9% | 21.4% | 10.7% | 17.9% | 7.1% | |
| Col Pct | 21.8% | 19.4% | 14.3% | 14.7% | 2.4% | |
| Tot Pct | 5.3% | 2.7% | 1.3% | 2.2% | 0.9% | |
| Column Total | 55 24.4% | 31 13.8% | 21 9.3% | 34 15.1% | 84 37.3% | 225 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree

participant's fear of using the Internet and the participants' use of email and/or newsgroup posts to contact users in other countries.

Table 44 shows the results of the cross-tabulation between whether participants use email and/or newsgroup posts to contact users in other countries, versus if they prefer using email to postal mail because email is faster than postal mail. The correlation between these variables yielded Chi-square Pearson = 94.72440, DF = 16, correlation Pearson r = .43670, $p < .01$, n = 225. Of the participants, 9.8% indicated strongly disagree-strongly disagree (4.9%), strongly disagree-disagree (3.1%), and disagree-disagree (1.8%) that they use email and/or newsgroup posts to contact users in other countries, and that they prefer email more than postal mail. However, 47.6% of the participants responded that they strongly agree-strongly agree (29.8%), strongly agree-agree (5.8%), strongly agree-agree (5.3%), and agree-agree (6.7%) that they use email and/or newsgroup posts to contact users in other countries and that they prefer to use email more than postal mail because email is faster than postal mail. Thus, the results indicate that participants who use email and/or post to newsgroups to make contact with users in other countries tend to prefer to use email more than postal mail.

Table 45 shows the results of the cross-tabulation between willingness to send email and/or post to a newsgroup

Table 44

I Use Email More Than Postal Mail * I Use Email/Newsgroups to Contact Users From Other Countries

| Use email/newsgroup to contact users from other countries | | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| I use email more than postal mail | | | | | | |
| Strongly disagree | | | | | | |
| Count | 11 | 0 | 0 | 1 | 2 | 14 |
| Exp Val | 3.4 | 1.9 | 1.4 | 2.2 | 5.2 | 6.2% |
| Row Pct | 78.6% | 0.0% | 0.0% | 7.1% | 14.3% | |
| Col Pct | 20.4% | 0.0% | 0.0% | 2.8% | 2.4% | |
| Tot Pct | 4.9% | 0.0% | 0.0% | 0.4% | 0.9% | |
| Disagree | | | | | | |
| Count | 7 | 4 | 1 | 3 | 1 | 16 |
| Exp Val | 3.8 | 2.1 | 1.6 | 2.6 | 5.9 | 7.1% |
| Row Pct | 43.8% | 25.0% | 6.3% | 18.8% | 6.3% | |
| Col pct | 13.0% | 13.3% | 4.5% | 8.3% | 1.2% | |
| Tot Pct | 3.1% | 1.8% | 0.4% | 1.3% | 0.4% | |
| Are undecided | | | | | | |
| Count | 9 | 7 | 10 | 4 | 1 | 31 |
| Exp Val | 7.4 | 4.1 | 3.0 | 5.0 | 11.4 | 13.8% |
| Row Pct | 29.0% | 22.6% | 32.3% | 12.9% | 3.2% | |
| Col Pct | 16.7% | 23.3% | 45.5% | 11.1% | 1.2% | |
| Tot Pct | 4.0% | 3.1% | 4.4% | 1.8% | 0.4% | |
| Agree | | | | | | |
| Count | 9 | 9 | 6 | 15 | 12 | 51 |
| Exp Val | 12.2 | 6.8 | 5.0 | 8.2 | 18.8 | 22.7% |
| Row Pct | 17.6% | 17.6% | 11.8% | 29.4% | 23.5% | |
| Col Pct | 16.7% | 30.0% | 27.3% | 41.7% | 14.5% | |
| Tot Pct | 4.0% | 4.0% | 2.7% | 6.7% | 5.3% | |
| Strongly agree | | | | | | |
| Count | 18 | 10 | 5 | 13 | 67 | 113 |
| Exp Val | 27.1 | 15.1 | 11.0 | 18.1 | 41.7 | 50.2% |
| Row Pct | 15.9% | 8.8% | 44% | 11.5% | 59.3% | |
| Col Pct | 33.3% | 33.3% | 22.7% | 36.1% | 80.7% | |
| Tot Pct | 8.0% | 4.4% | 2.2% | 5.8% | 29.8% | |
| Column Total | 54 24.0% | 30 13.3% | 22 9.8% | 36 16.0% | 83 36.9% | 225 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

even during late night and/or early morning hours versus whether or not participants care about the receiver's time difference. The correlation between these two variables was Chi-square Pearson = 210.22484, DF= 16, correlation Pearson r = .50928, $p < .01$, n = 224. Eight percent of the participants indicated that they send email and/or post to newsgroups during late night and/or early morning hours and that they consider the receiver's time difference by answering that they strongly disagree-strongly disagree (3.6%), disagree-strongly disagree (0.4%), and disagree-disagree (4.0%). However, 55.3% of the participants indicated that they strongly agree-strongly agree (33.9%), agree-strongly agree (3.1%), strongly agree-agree (3.6%), agree-agree (14.7%) to these questions. The participants that answered strongly disagree (33.9%) made up the highest percentage of answers to these questions. These results indicate that participants tend to use email and newsgroups regardless of time and that this does not relate to whether or not consideration for the receiver's time difference is made when using the Internet.

Table 46 shows the cross-tabulation results of participants who send email and/or post to newsgroups even if it is late at night and/or early in the morning and participants who prefer to use email more than postal mail because email is faster than postal mail. The correlation between these two variables was chi-square Pearson =

Table 45

I Send Email and/or Post to Newsgroups Late at Night or Early in the Morning * I Don't Care About the Receiver's Time Difference.

| | I don't care about the receiver's time difference | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| Send email/post to newsgroups late night/early morning | | | | | | |
| Strongly disagree | | | | | | |
| Count | 8 | 1 | 2 | 2 | 2 | 15 |
| Exp Val | 1.1 | 1.9 | 2.7 | 3.3 | 6.1 | 6.7% |
| Row Pct | 53.3% | 6.7% | 13.3% | 13.3% | 13.3% | |
| Col Pct | 50.0% | 3.6% | 5.0% | 4.1% | 2.2% | |
| Tot Pct | 3.6% | 0.4% | 0.9% | 0.9% | 0.9% | |
| Disagree | | | | | | |
| Count | 0 | 9 | 4 | 2 | 2 | 17 |
| Exp Val | 1.2 | 2.1 | 3.0 | 3.7 | 6.9 | 7.6% |
| Row Pct | 0.0% | 52.9% | 23.5% | 11.8% | 11.8% | |
| Col pct | 0.0% | 32.1% | 10.0% | 4.1% | 2.2% | |
| Tot Pct | 0.0% | 4.0% | 1.8% | 0.9% | 0.9% | |
| Are undecided | | | | | | |
| Count | 1 | 4 | 19 | 5 | 3 | 32 |
| Exp Val | 2.3 | 4.0 | 5.7 | 7.0 | 13.0 | 14.3% |
| Row Pct | 3.1% | 12.5% | 59.4% | 15.6% | 9.4% | |
| Col Pct | 6.3% | 14.3% | 47.5% | 10.2% | 3.3% | |
| Tot Pct | 0.4% | 1.8% | 8.5% | 2.2% | 1.3% | |
| Agree | | | | | | |
| Count | 2 | 6 | 8 | 33 | 8 | 57 |
| Exp Val | 4.1 | 7.1 | 10.2 | 12.5 | 23.2 | 25.4% |
| Row Pct | 3.5% | 10.5% | 14.0% | 57.9% | 14.0% | |
| Col Pct | 12.5% | 21.4% | 20.0% | 67.3% | 8.8% | |
| Tot Pct | 0.9% | 2.7% | 3.6% | 14.7% | 3.6% | |
| Strongly agree | | | | | | |
| Count | 5 | 8 | 7 | 7 | 76 | 103 |
| Exp Val | 7.4 | 12.9 | 18.4 | 22.5 | 41.8 | 46.0% |
| Row Pct | 4.9% | 7.8% | 6.8% | 6.8% | 73.8% | |
| Col Pct | 31.3% | 28.6% | 17.5% | 14.3% | 83.5% | |
| Tot Pct | 2.2% | 3.6% | 3.1% | 3.1% | 33.9% | |
| Column Total | 16 7.1% | 28 12.5% | 40 17.9% | 49 21.9% | 91 40.6% | 224 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

Table 46

I Send Email and/or Post to Newsgroups Late at Night or Early in the Morning * I Use Email More Than Postal Mail.

| | I use email more than postal mail | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| Send email and/or post to newsgroups late night or morning | | | | | | |
| Strongly disagree | | | | | | |
| Count | 5 | 0 | 3 | 4 | 3 | 15 |
| Exp Val | 0.9 | 1.1 | 2.1 | 3.5 | 7.4 | 6.7% |
| Row Pct | 33.3% | 0.0% | 20.0% | 26.7% | 20.0% | |
| Col Pct | 38.5% | 0.0% | 9.4% | 7.7% | 2.7% | |
| Tot Pct | 2.2% | 0.0% | 1.3% | 1.8% | 1.3% | |
| Disagree | | | | | | |
| Count | 1 | 3 | 2 | 6 | 5 | 17 |
| Exp Val | 1.0 | 1.2 | 2.4 | 3.9 | 8.4 | 7.6% |
| Row Pct | 5.9% | 17.6% | 11.8% | 35.3% | 29.4% | |
| Col pct | 7.7% | 18.8% | 6.3% | 11.5% | 4.5% | |
| Tot Pct | 0.4% | 1.3% | 0.9% | 2.7% | 2.2% | |
| Are undecided | | | | | | |
| Count | 1 | 3 | 11 | 9 | 8 | 32 |
| Exp Val | 1.9 | 2.3 | 4.6 | 7.4 | 15.9 | 14.3% |
| Row Pct | 3.1% | 9.4% | 34.4% | 28.1% | 25.0% | |
| Col Pct | 7.7% | 18.8% | 34.4% | 17.3% | 7.2% | |
| Tot Pct | 0.4% | 1.3% | 4.9% | 4.0% | 3.6% | |
| Agree | | | | | | |
| Count | 3 | 7 | 9 | 22 | 16 | 57 |
| Exp Val | 3.3 | 4.1 | 8.1 | 13.2 | 28.2 | 25.4% |
| Row Pct | 5.3% | 12.3% | 15.8% | 38.6% | 28.1% | |
| Col Pct | 23.1% | 43.8% | 28.1% | 42.3% | 14.4% | |
| Tot Pct | 1.3% | 3.1% | 4.0% | 9.8% | 7.1% | |
| Strongly agree | | | | | | |
| Count | 3 | 3 | 7 | 11 | 79 | 103 |
| Exp Val | 6.0 | 7.4 | 14.7 | 23.9 | 51.0 | 46.0% |
| Row Pct | 2.9% | 2.9% | 6.8% | 10.7% | 76.7% | |
| Col Pct | 23.1% | 18.8% | 21.9% | 21.2% | 71.2% | |
| Tot Pct | 1.3% | 1.3% | 3.1% | 4.9% | 35.3% | |
| Column Total | 13 | 16 | 32 | 52 | 111 | 224 |
| | 5.8% | 7.1% | 14.3% | 23.2% | 49.6% | 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

86.51026, DF = 16, correlation Pearson r = .38194, p < .01, n = 224. Only 3.9% of the participants indicated that they use email or newsgroups late at night and/or early in the morning and that they prefer using email over postal mail by answering that they strongly disagree-strongly disagree (2.2%), strongly disagree-disagree (0.4%), disagree-disagree (1.3%). However, 57.0% of the participants indicated that they strongly agree-strongly agree (35.3%), agree-strongly agree (4.9%), strongly agree-agree (7.1%), and agree-agree (9.8%) to the questions. Therefore, users that send email and/or post to newsgroups -- even if it is late at night or early in the morning -- positively correlated to using email over postal mail.

Table 47 shows the results of the cross-tabulation of participants that indicated that they prefer the use of email to postal mail, and the participants who do not consider the receiver's time difference when using email. The correlation between these variables yielded Chi-square Pearson = 83.28759, DF = 19, correlation Pearson r = .32837, p < .01, n = 228. Only 4.9% of the participants indicated that they do not consider the receiver's time difference and that they prefer the use of email to postal mail by answering that they strongly disagree-strongly disagree (2.2%), disagree-strongly disagree (0.9%), and disagree-disagree (1.8%). However, 50.4% of the participants reported that they strongly agree-strongly agree (31.1%), agree-strongly agree (5.7%), strongly

Table 47

I Use Email More Than Postal Mail * I Ignore Receiver's Time Difference.

| I use email/newsgroup to contact the users from other countries | 1 | 2 | 3 | 4 | 5 | Row Tot |
|---|---|---|---|---|---|---|
| I use email more than postal mail | | | | | | |
| Strongly disagree | | | | | | |
| Count | 5 | 2 | 3 | 1 | 3 | 14 |
| Exp Val | 1.0 | 1.7 | 2.5 | 3.1 | 5.7 | 6.1% |
| Row Pct | 35.7% | 14.3% | 21.4% | 7.1% | 21.4% | |
| Col Pct | 31.3% | 7.1% | 7.5% | 2.0% | 3.2% | |
| Tot Pct | 2.2% | 0.9% | 1.3% | 0.4% | 1.3% | |
| Disagree | | | | | | |
| Count | 0 | 4 | 6 | 6 | 0 | 16 |
| Exp Val | 1.1 | 2.0 | 2.8 | 3.6 | 6.5 | 7.0% |
| Row Pct | 0.0% | 25.0% | 37.5% | 37.5% | 0.0% | |
| Col pct | 0.0% | 14.3% | 15.0% | 11.8% | 0.0% | |
| Tot Pct | 0.0% | 1.8% | 2.6% | 2.6% | 0.0% | |
| Are undecided | | | | | | |
| Count | 3 | 1 | 11 | 10 | 9 | 34 |
| Exp Val | 2.4 | 4.2 | 6.0 | 7.6 | 13.9 | 14.9% |
| Row Pct | 8.8% | 2.9% | 32.4% | 29.4% | 26.5% | |
| Col Pct | 18.8% | 3.6% | 27.5% | 19.6% | 9.7% | |
| Tot Pct | 1.3% | 0.4% | 4.8% | 4.4% | 3.9% | |
| Agree | | | | | | |
| Count | 2 | 9 | 9 | 21 | 10 | 51 |
| Exp Val | 3.6 | 6.3 | 8.9 | 11.4 | 20.8 | 22.4% |
| Row Pct | 3.9% | 17.6% | 17.6% | 41.2% | 19.6% | |
| Col Pct | 12.5% | 32.1% | 22.5% | 41.2% | 10.8% | |
| Tot Pct | 0.9% | 3.9% | 3.9% | 9.2% | 4.4% | |
| Strongly agree | | | | | | |
| Count | 6 | 12 | 11 | 13 | 71 | 113 |
| Exp Val | 7.9 | 13.9 | 19.8 | 25.3 | 46.1 | 49.6% |
| Row Pct | 5.3 | 10.6% | 9.7% | 11.5% | 62.8% | |
| Col Pct | 37.5% | 42.9% | 27.5% | 25.5% | 76.3% | |
| Tot Pct | 2.6% | 5.3% | 4.8% | 5.7% | 31.1% | |
| Column Total | 16 7.0% | 28 12.3% | 40 17.5% | 51 22.4% | 93 40.8% | 228 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

agree-agree (4.4%), and agree-agree (9.2%) to the questions that they do not consider the receiver's time difference and that they prefer the use of email to postal mail. Therefore, whether or not participants tended to consider the receiver's time difference related to use of email over postal mail.

Table 48 shows the result of the cross-tabulation of participants who indicated that they use the Internet to communicate with others because they feel more comfortable communicating this way than with FTF communication and the participants who reported that they feel more comfortable when expressing themselves on the Internet than when talking in front of people. The correlation between these variables yielded Chi-square Pearson = 213.77259, DF = 16, correlation Pearson r = .66252, $p < .01$, n = 226. Of the participants, 52.6% indicated that they feel more comfortable communicating using the Internet instead of FTF communication, and feel more comfortable when expressing themselves on the Internet than in front of people by answering that they strongly disagree-strongly disagree (26.5%), disagree-strongly disagree (5.3%), strongly disagree-disagree (4.4%), and disagree-disagree (16.4%). However, 10.6% of the participants indicated that they strongly agree-strongly agree (3.1%), agree-strongly agree (1.3%), strongly agree-agree (0.9%), and agree-agree (5.3%) to these questions. These results indicate that participants who feel more comfortable communicating in person than communicating over

Table 48

I Feel Comfortable Communicating on the Internet More Than FTF * I Feel Comfortable When Expressing Myself on the Internet.

| I feel comfortable when expressing myself on the Internet | 1 | 2 | 3 | 4 | 5 | Row Tot |
|---|---|---|---|---|---|---|
| Feel more comfortable communicating on the Internet than FTF | | | | | | |
| Strongly disagree | | | | | | |
| Count | 60 | 12 | 3 | 3 | 3 | 81 |
| Exp Val | 26.2% | 21.9% | 15.8% | 12.5% | 4.7% | 35.8% |
| Row Pct | 74.1% | 14.8% | 3.7% | 3.7% | 3.7% | |
| Col Pct | 82.2% | 19.7% | 6.8% | 8.6% | 23.1% | |
| Tot Pct | 26.5% | 5.3% | 1.3% | 1.3% | 1.3% | |
| Disagree | | | | | | |
| Count | 10 | 37 | 11 | 8 | 0 | 81 |
| Exp Val | 21.3 | 17.8 | 12.8 | 10.2 | 3.8 | 29.2% |
| Row Pct | 15.2% | 56.1% | 16.7% | 12.1% | 0.0% | |
| Col pct | 13.7% | 60.7% | 25.2% | 22.9% | 0.0% | |
| Tot Pct | 4.4% | 16.4% | 4.9% | 3.5% | 0.0% | |
| Are undecided | | | | | | |
| Count | 3 | 6 | 20 | 9 | 1 | 39 |
| Exp Val | 12.6 | 10.5 | 7.6 | 6.0 | 2.2 | 17.3% |
| Row Pct | 7.7% | 15.4% | 51.3% | 23.1% | 2.6% | |
| Col Pct | 4.1% | 9.8% | 45.5% | 25.7% | 7.7% | |
| Tot Pct | 1.3% | 2.7% | 8.8% | 4.0% | 0.4% | |
| Agree | | | | | | |
| Count | 0 | 5 | 8 | 12 | 2 | 27 |
| Exp Val | 8.7 | 73 | 5.3 | 4.2 | 1.6 | 11.9% |
| Row Pct | 0.0% | 18.5% | 29.6% | 44.4% | 7.4% | |
| Col Pct | 0.0% | 8.2% | 18.2% | 34.3% | 15.4% | |
| Tot Pct | 0.0% | 2.2% | 3.5% | 5.3% | 0.9% | |
| Strongly agree | | | | | | |
| Count | 0 | 1 | 2 | 3 | 7 | 13 |
| Exp Val | 4.2 | 3.5 | 2.5 | 2.0 | 0.7 | 5.8% |
| Row Pct | 0.0% | 7.7% | 15.4% | 23.1% | 53.8% | |
| Col Pct | 0.0% | 1.6% | 4.5% | 8.6% | 53.8% | |
| Tot Pct | 0.0% | 0.4% | 0.9% | 1.3% | 3.1% | |
| Column Total | 73 32.3% | 61 27.0% | 44 19.5% | 35 15.5% | 13 5.8% | 226 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

the Internet tend to feel less comfortable when expressing themselves on the Internet than in front of people.

Table 49.1 and Table 49.2 show the cross-tabulation results of native language and whether the participants indicated that they feel uncomfortable when they have to communicate in a language other than their first/native language on the Internet. It also lists the native languages that were reported during the survey. Although a total of 18 languages were reported, the most common responses were English 137, Chinese 36, and Japanese 17.

Table 49.1

Native/First Language.

| Language | n | % |
|---|---|---|
| English | 143 | (63.3) |
| Chinese | 37 | (16.4%) |
| Japanese | 17 | (7.5) |
| Indonesian | 6 | (2.7%) |
| Spanish | 4 | (1.8%) |
| Thai | 4 | (1.8%) |
| Arabic | 3 | (1.3%) |
| German | 2 | (0.9) |
| Korean | 1 | (0.4) |
| Portuguese | 1 | (0.4%) |
| Finnish | 1 | (0.4%) |
| Persian | 1 | (0.4%) |
| Taiwanese | 1 | (0.4%) |
| Dutch | 1 | (0.4%) |
| Swedish | 1 | (0.4%) |
| Assyrian | 1 | (0.4%) |
| Tagalog | 1 | (0.4%) |
| Czech | 1 | (0.4%) |
| Total | 226 | (100%) |

The correlation between the variables yielded Chi-square Pearson = 30.18704, DF = 8, correlation Pearson r = -.32491, $p < .01$, n = 218. Of the participants that answered English as their first language, 27.0% of them strongly disagreed (12.4%) or disagreed (14.6%) that they feel uncomfortable using a language other than their first language on the Internet. However, 49.7% of participants who answered English as their first language indicated that they strongly agreed (28.5%) and agreed (21.2%) that they feel uncomfortable using a language other than English on the Internet. Also, 23.4% of the participants from this group were undecided whether they are comfortable or uncomfortable using a language other than English on the Internet. Thus, the majority of participants who consider English as their first/native language indicated that they feel uncomfortable using a language other than their first/native language on the Internet.

Of the participants who answered Chinese as their first language, 55.6% of them either strongly disagreed (25.0%) or disagreed (30.6%) that they feel uncomfortable using a language other than their first language. Over 22% of the participants indicated that they either strongly agreed (8.3%) or agreed (13.9%) that they feel uncomfortable, while 22.2% of the participants from this group were undecided. Therefore, about one quarter of participants whose first language is Chinese tend to feel uncomfortable using a

Table 49.2

First Language * I Feel Uncomfortable Using the Language Other Than My First Language.

| I feel uncomfortable using other than first language | | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| First language | | | | | | |
| English | | | | | | |
| Count | 17 | 20 | 32 | 29 | 39 | 137 |
| Exp Val | 25.1 | 25.8 | 30.8 | 28.3 | 27.3 | 62.8% |
| Row Pct | 12.4% | 14.6% | 23.4% | 21.2% | 28.5% | |
| Col Pct | 42.5% | 48.8% | 65.3% | 64.4% | 90.7% | |
| Tot Pct | 7.8% | 9.2% | 14.7% | 13.3% | 17.9% | |
| Spanish | | | | | | |
| Count | 1 | 1 | 2 | 0 | 0 | 4 |
| Exp Val | 0.7 | 0.8 | 0.9 | 0. | 0.8 | 1.8% |
| Row Pct | 25.0% | 25.0% | 50.0% | 0.0% | 0.0% | |
| Col pct | 2.5% | 2.4% | 4.1% | 0.0% | 0.0% | |
| Tot Pct | 0.5% | 0.5% | 0.9% | 0.0% | 0.0% | |
| Japanese | | | | | | |
| Count | 4 | 2 | 4 | 6 | 1 | 17 |
| Exp Val | 3.1 | 3.2 | 3.8 | 3.5 | 3.4 | 7.8% |
| Row Pct | 23.5% | 11.8% | 23.5% | 53.3% | 5.9% | |
| Col Pct | 10.0% | 4.9% | 8.2% | 13.3% | 2.3% | |
| Tot Pct | 1.8% | 0.9% | 1.8% | 2.8% | 0.5% | |
| Chinese | | | | | | |
| Count | 9 | 11 | 8 | 5 | 3 | 36 |
| Exp Val | 6.6 | 6.8 | 8.1 | 7.4 | 7.1 | 16.5% |
| Row Pct | 25.0% | 30.6% | 22.2% | 13.9% | 8.3% | |
| Col Pct | 22.5% | 26.8% | 16.3% | 11.1% | 7.0% | |
| Tot Pct | 4.1% | 5.0% | 3.7% | 2.3% | 1.4% | |
| Indonesian | | | | | | |
| Count | 2 | 2 | 1 | 1 | 0 | 0 |
| Exp Val | 1.1 | 1.1 | 1.3 | 1.2 | 1.2 | 2.8% |
| Row Pct | 33.3% | 33.3% | 16.7% | 16.7% | 0.0% | |
| Col Pct | 5.0% | 4.9% | 2.0% | 2.2% | 0.0% | |
| Tot Pct | 0.9% | 0.9% | 0.5% | 0.5% | 0.0% | |
| Thai | | | | | | |
| Count | 0 | 3 | 0 | 1 | 0 | 4 |
| Exp Val | 0.7 | 0.8 | 0.9 | 0.8 | 0.8 | 1.8% |
| Row Pct | 0.0% | 75.0% | 0.0% | 25.0% | 0.0% | |
| Col Pct | 0.0% | 7.3% | 0.0% | 2.2% | 0.0% | |
| Tot Pct | 0.0% | 1.4% | 0.0% | 0.5% | 0.0% | |
| Column Total | 40 18.3% | 41 18.8% | 49 22.5% | 45 20.6% | 43 18.7% | 218 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

language other than Chinese on the Internet. However, more than half of the participants from this group (55.6%) responded that they feel comfortable using a language other than Chinese on the Internet.

Of the participants whose first language is Japanese, 35.3% of them either strongly disagreed (23.5%) or disagreed (11.8%) that they feel uncomfortable using a language other than Japanese on the Internet. Over 41% of the participants from this group answered either strongly agree (5.9%) or agree (35.5%) that they feel uncomfortable using a language other than Japanese on the Internet; 23.5% answered that they are undecided. Thus, most participants whose first language is Japanese indicated that they feel uncomfortable using a language other than Japanese on the Internet.

Tables 50.1, 50.2, and 50.3 show the cross-tabulation results between the number of days per week of Internet use versus hours per session. The correlation between these variables yielded Chi-square Pearson = 231.05509, DF = 16, correlation Pearson r = .44524, $p < .01$, n = 230. Over 63% of the participants answered that they use the Internet one day a week and less than 30 minutes per session, and 18.2% of participants answered that they use the Internet four days per week, but less than 30 minutes per session. Moreover, of the participants who use the Internet once a week, none of them use the Internet more than six hours per session. This is the same result for participants who use the Internet four

Table 50.1

Number of Days Per Week * Hours Per Session.

| | Hours per session | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Row |
| 1 day | | | | | | | | | | |
| Count | 26 | 9 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 41 |
| Exp Val | 18.0 | 11.2 | 9.6 | 2.3 | 1.8 | 1.4 | 0.7 | 1.6 | 4.3 | 17.8 % |
| Row Pct | 63.4 % | 22.0 % | 9.8% | 2.3% | 0.0% | 0.0% | 0.0% | 0.0% | 2.4% | |
| Col Pct | 57.8 % | 14.3 % | 7.4% | 7.7% | 0.0% | 0.0% | 0.0% | 0.0% | 4.2% | |
| Tot Pct | 11.3 % | 3.9% | 1.7% | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.4% | |
| 2 days | | | | | | | | | | |
| Count | 1 | 10 | 8 | 2 | 0 | 0 | 0 | 1 | 0 | 22 |
| Exp Val | 4.3 | 6.0 | 5.2 | 1.2 | 1.0 | 0.8 | 0.4 | 0.9 | 2.3 | 9.6% |
| Row Pct | 4.5% | 45.5 % | 36.4 % | 9.1% | 0.0% | 0.0% | 0.0% | 4.5% | 0.0% | |
| Col Pct | 2.2% | 15.9 % | 14.8 % | 15.4 % | 0.0% | 0.0% | 0.0% | 11.1 % | 0.0% | |
| Tot Pct | 0.4% | 4.3% | 3.5% | 0.9% | 0.0% | 0.0% | 0.0% | 0.4% | 0.0% | |
| 3 days | | | | | | | | | | |
| Count | 2 | 9 | 14 | 2 | 0 | 2 | 0 | 1 | 0 | 30 |
| Exp Val | 5.9 | 8.2 | 7.0 | 1.7 | 1.3 | 1.0 | 0.5 | 1.2 | 3.1 | 13.0 % |
| Row Pct | 6.7% | 30.0 % | 46.7 % | 6.7% | 0.0% | 6.7% | 0.0% | 3.3% | 0.0% | |
| Col Pct | 4.4% | 14.3 % | 25.9 % | 15.4 % | 0.0% | 25.0 % | 0.0% | 3.3% | 0.0% | |
| Tot Pct | 0.9% | 3.9% | .1% | 0.9% | 0.0% | 0.9% | 0.0% | 0.4% | 0.0% | |

Note. 1 = Less than 30 min, 2 = 30 min to 1hr, 3 = 1 hr to 2 hrs, 4 = 2 hrs to 3 hrs, 5 = 3 hrs to 4 hrs, 6 = 4 hrs to 5 hrs, 7 = 5 hrs to 6 hrs, 8 = More than 6 hrs, 9 = None

Table 50.2

Number of Days Per Week * Hours Per Session.

| | Hours per session | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Row |
| 4 days | | | | | | | | | | |
| Count | 2 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Exp Val | 2.2 | 3.0 | 2.6 | 0.6 | 0.5 | 0.4 | 0.2 | 0.4 | 1.1 | 4.8% |
| Row Pct | 1.82% | 63.6% | 18.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| Col Pct | 4.4% | 11.1% | 3.7% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| Tot Pct | 0.9% | 3.0% | 0.9% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| 5 days | | | | | | | | | | |
| Count | 9 | 10 | 12 | 3 | 3 | 2 | 1 | 1 | 0 | 41 |
| Exp Val | 8.0 | 11.2 | 9.6 | 2.3 | 1.8 | 1.4 | 0.7 | 1.6 | 4.3 | 17.8% |
| Row Pct | 22.0% | 24.4% | 29.3% | 7.3% | 7.3% | 4.9% | 2.4% | 2.4% | 0.0% | |
| Col Pct | 20.0% | 15.9% | 22.2% | 23.1% | 30.0% | 25.0% | 25.0% | 11.1% | 0.0% | |
| Tot Pct | 0.4% | 2.2% | 1.7% | 0.9% | 0.4% | 0.9% | 0.4% | 0.4% | 0.0% | |
| 6 days | | | | | | | | | | |
| Count | 1 | 5 | 4 | 2 | 1 | 3 | 0 | 0 | 0 | 16 |
| Exp Val | 3.1 | 4.4 | 3.8 | 0.9 | 0.7 | 0.6 | 0.3 | 0.6 | 1.7 | 7.0% |
| Row Pct | 6.3% | 31.3% | 25.0% | 12.5% | 6.3% | 4.9% | 2.4% | 2.4% | 0.0% | |
| Col Pct | 2.2% | 7.9% | 7.4% | 15.4% | 10.0% | 37.5% | 0.0% | 0.0% | 0.0% | |
| Tot Pct | 0.4% | 2.2% | 1.7% | 0.9% | 0.4% | 1.3% | 0.0% | 0.0% | 0.0% | |

Note. 1 = Less than 30 min, 2 = 30 min to 1hr, 3 = 1 hr to 2 hrs, 4 = 2 hrs to 3 hrs, 5 = 3 hrs to 4 hrs, 6 = 4 hrs to 5 hrs, 7 = 5 hrs to 6 hrs, 8 = More than 6 hrs, 9 = None

Table 50.3

Number of Days Per Week * Hours Per Session

| | Hours per session | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Row |
| 7 days | | | | | | | | | | |
| Count | 3 | 12 | 10 | 3 | 6 | 1 | 3 | 6 | 0 | 44 |
| Exp Val | 8.6 | 12.1 | 10.3 | 2.5 | 1.9 | 1.5 | 0.8 | 1.7 | 4.6 | 19.1 % |
| Row Pct | 6.8% | 27.3 % | 22.7 % | 6.8% | 13.6 % | 2.3% | 6.8% | 13.6 % | 0.0% | |
| Col Pct | 6.7% | 19.0 % | 18.5 % | 23.1 % | 60.0 % | 12.5 % | 75.0 % | 66.7 % | 0.0% | |
| Tot Pct | 1.3% | 5.2% | 4.3% | 1.3% | 2.6% | 0.4% | 1.3% | 2.6% | 0.0% | |
| I don't use | | | | | | | | | | |
| Count | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 25 |
| Exp Val | 4.9 | 6.8 | 5.9 | 1.4 | 1.1 | 0.9 | 0.4 | 1.0 | 2.6 | 10.9 % |
| Row Pct | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 92.0 % | |
| Col Pct | 2.2% | 1.6% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 95.8 % | |
| Tot Pct | 0.4% | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 10.0 % | |
| Col-umn | 45 | 63 | 54 | 13 | 10 | 8 | 4 | 9 | 24 | 230 |
| To-tal | 19.6 % | 27.4 % | 23.5 % | 5.7% | 4.3% | 3.5% | 1.7% | 3.9% | 10.4 % | 100% |

Note. 1 = Less than 30 min, 2 = 30 min to 1hr, 3 = 1 hr to 2 hrs, 4 = 2 hrs to 3 hrs, 5 = 3 hrs to 4 hrs, 6 = 4 hrs to 5 hrs, 7 = 5 hrs to 6 hrs, 8 = More than 6 hrs, 9 = None

days per week. However, 13.6% of the participants who use the Internet seven days a week also indicated that they use the Internet more than six hours per session. Therefore, the participants who use the Internet more times per week tend to also use it in longer sessions.

The second hypothesis asserts that CMC diminishes FTF communication and raises global awareness. Table 51 summarizes how each of the cross-tabulation results support this claim.

Table 51

Summary of Tables 36 to 50.3

| Cross-tabulation | Probability | Supports Hypothesis |
|---|---|---|
| Table:36 Gender * nationality | P < .01 | Yes |
| Table:37 Gender * appearance | P < .01 | Yes |
| Table:38 Nationality * appearance | P < .01 | Yes |
| Table:39 Age * gender | P < .01 | Yes |
| Table:40 Late night * contact | P < .01 | Yes |
| Table:41 Fear of comp * contact | P < .01 | Yes |
| Table:42 Fear of comp * fear of unknown | P < .01 | Yes |
| Table:43 Fear of Internet * contact | P < .01 | Yes |
| Table:44 Email than postal mail * contact | P < .01 | Yes |
| Table:45 Late night * ignore time | P < .01 | Yes |
| Table:46 Late night * email than postal | P < .01 | Yes |
| Table:47 Email than postal * ignore time | P < .01 | Yes |
| Table:48 Net communication than FTF | P < .01 | No |
| Table:49.1 & 49.2 No 1st language * 1st language | P < .01 | English:No, Japanese:No, Chinese:Yes |
| Table:50.1, 50.2 & 50.3 Days/week * hours/session | P < .01 | Yes |

Table 36 compares communication bias on the Internet in relation to gender and nationality when communicating on the Internet. The result supports the hypothesis because they show that bias regarding nationality and gender on the Internet do not relate.

Table 37 compares communication bias on the Internet in relation to the appearance and gender of other users. Because these two biases were found not to relate, the results support the hypothesis.

Table 38 compares communication bias on the Internet in relation to the nationality and appearance of other users. The cross-tabulation results indicated that these two variables also do not relate to each other; therefore, this test supports the hypothesis.

Table 39 compares communication bias on the Internet in relation to the age and gender of other users on the Internet. Because bias regarding age and gender appear not to relate, this result supports the hypothesis.

Table 40 shows cross-tabulation between whether or not participants send email and/or post to newsgroups to make contact with users from other countries and whether or not they send email and/or post to newsgroups even during late night and/or early morning hours. The results indicate that both variables do relate. This test supports the hypothesis because it demonstrates how the Internet solves the problem of distance and time differences when communicating with

people in foreign countries.

Table 41 shows the cross-tabulation results between fear of using a computer because of lack of computer skill and whether or not participants indicated that they send email and/or post to newsgroups to contact users in other countries. The result supports the hypothesis because both variables were shown not to relate to each other.

Table 42 shows the cross-tabulation results between fear of using the computer and facing an unknown user on the Internet. These variables were found to be unrelated, thus supporting the hypothesis.

Table 43 shows the cross-tabulation results between fear of using the Internet and the use of email and/or newsgroups to contact users in other countries. These variables were found to be unrelated, again supporting the hypothesis.

Table 44 compares the use of email and/or posts to newsgroups to make contact with users in other countries with the preference of using email over postal mail. This result indicates that the variables relate to each other. If the participants use email and newsgroups to contact users from other countries, they also prefer using email to postal mail; therefore, this result supports the hypothesis.

Table 45 shows the cross-tabulation results between sending email and/or posts to newsgroups regardless of the night and/or early morning hours, and whether or not the receiver's time difference is considered when using the

Internet. This test supports the hypothesis because it shows that the results relate to each other.

Table 46 shows the cross-tabulation results between sending email and/or posting to newsgroups regardless of late night and/or early morning hours and preference of email to postal mail. Participants that indicated that they would use email and/or post to newsgroups regardless of time of day positively correlated with a preference to use email over postal mail. Therefore, this result supports the hypothesis.

Table 47 shows the cross-tabulation results between preference to email over postal mail and consideration for a receiver's time difference when sending email and/or posting to newsgroups. The result supports the hypothesis as it indicates that they do not relate. This demonstrates how the Internet solves the time and distance problem when communicating with users from other countries.

Table 48 shows the cross-tabulation result between comfort when communicating in person versus communicating over the Internet. Although the results run counter to the hypothesis that CMC diminishes FTF communication and raises global awareness, they contain some ambiguity. Even though the majority of participants indicated that they do not fear facing unknown users, Figure 46 shows that FTF is preferred to CMC. A possible explanation is that participants use the Internet because CMC offers the advantage of speed without the need to worry about a receiver's time difference.

However, in some cases, FTF communication is simply a preferred medium even with its limitations of distance and time.

Tables 49.1 and 49.2 show the cross-tabulation results of whether or not participants feel uncomfortable communicating in a language other than their native/first language on the Internet versus what they reported their first/native language to be. The participants who consider English as their first language in general feel uncomfortable using a language other than their first language. Also, participants who reported their first language to be Chinese for the most part showed that they do not feel uncomfortable using a language other than Chinese on the Internet. For participants whose first language was reported as Japanese, the majority answered that they feel uncomfortable using a language other than Japanese on the Internet.

Participants whose first language is not English or Japanese supported the hypothesis that CMC facilitates global communication. English and Japanese speakers indicated that they feel uncomfortable communicating in a non-native language on the Internet. This could be attributed to other factors, such as foreign language proficiency, which the survey did not measure.

Tables 50.1, 50.2, and 50.3 show the cross-tabulation results of frequency of use of the Internet in days per week and hours per session. These variables were found to

positively correlate. As the number of days per week increased, so did the number of hours per session.

Advanced Data Treatment

Two hypotheses were tested by cross-tabulating variables relating to computer and Internet knowledge and skill versus FTF communication and intercultural communication. However, the results of these cross-tabulations raised other questions which prompted further cross-tabulation analysis.

The emphasis of this section focuses on the number of days per week of Internet usage and use of language. Participants were divided into two groups: frequent and infrequent Internet users. The infrequent users group was defined as participants who reported using the Internet one to four days per week, while the frequent users group was defined as participants who reported using the Internet five to seven days per week. These groups were cross-tabulated with the variables for computer and Internet knowledge and skill.

Another focus of this section is to examine how a participant's language background affected responses to questions regarding FTF communication and global awareness when using the Internet. For this analysis, participants were divided into three groups: English, Japanese, and other. The previous cross-tabulation results of these three languages, the participants' first language, the language use on the Internet, and the language used at home, were

statistically significant. Therefore, another advanced cross-tabulation would emphasize these three language groups.

Days of Using the Internet and Computer, and Internet Knowledge and Skill.

Table 52 shows the division between frequent and infrequent Internet use. Infrequent users were defined as those who use the Internet one to four days per week while frequent users were defined as those who use the Internet five to seven days per week. Over 45% of the participants answered that they use the Internet between one to four days per week, and 43.9% of the responders answered that they use the Internet between five to seven days per week.

Table 52
Frequent and Infrequent Use of the Internet Per Week.

| Days | n | % |
|---|---|---|
| 1 - 4 days | 104 | (45.2%) |
| 5 - 7 days | 101 | (43.9%) |
| No | 25 | (10.9%) |
| Total | 230 | (100%) |

Table 53 shows the results of the cross-tabulation between days of Internet use per week and hours of Internet use per session. The correlation between these variables was $n = 230$, Pearson $r = .44524$, and $P < .01$. The 63.5% that reported using the Internet between one to four days per week (infrequent users) also reported that they used the Internet less than one hour per session. More than 31% of infrequent users used the Internet between one hour to three hours per

Table 53

Number of Days Per Week * Hours Per Session.

| | Hours per session | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Row |
| Numbers days per week | | | | | | | | | | |
| 1-4 days | | | | | | | | | | |
| Count | 31 | 35 | 28 | 5 | 0 | 2 | 0 | 2 | 1 | 104 |
| Exp Val | 20.3 | 28.5 | 24.4 | 5.9 | 4.5 | 3.6 | 1.8 | 4.1 | 10.9 | 45.2 % |
| Row Pct | 29.8 % | 33.7 % | 26.9 % | 4.8% | 0.0% | 1.9% | 0.0% | 1.9% | 1.0% | |
| Col Pct | 68.9 % | 55.6 % | 51.9 % | 38.5 % | 0.0% | 25.0 % | 0.0% | 22.2 % | 4.2% | |
| Tot Pct | 13.5 % | 15.2 % | 12.2 % | 2.2% | 0.0% | 0.9% | 0.0% | 0.9% | 0.4% | |
| 5-7 days | | | | | | | | | | |
| Count | 13 | 27 | 26 | 9 | 10 | 6 | 4 | 7 | 0 | 101 |
| Exp Val | 19.8 | 27.7 | 23.7 | 5.7 | 4.4 | 3.5 | 1.8 | 4.0 | 10.5 | 43.9 % |
| Row Pct | 12.9 % | 26.7 % | 25.7 % | 7.9% | 9.9% | 5.9% | 4.0% | 6.9% | 0.0% | |
| Col Pct | 28.9 % | 42.9 % | 48.1 % | 61.5 % | 100% | 75.0 % | 100% | 77.8 % | 0.0% | |
| Tot Pct | 5.7% | 11.7 % | 11.3 % | 3.5% | 4.3% | 2.6% | 1.7% | 3.0% | 0.0% | |
| No | | | | | | | | | | |
| Count | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 25 |
| Exp Val | 4.9 | 6.8 | 5.9 | 1.4 | 1.1 | 0.9 | 0.4 | 1.0 | 2.6 | 10.9 % |
| Row Pct | 4.0% | 4.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 92.0 % | |
| Col Pct | 2.2% | 1.6% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 95.8 % | |
| Tot Pct | 0.4% | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 10.0 % | |
| Col-umn | 45 | 63 | 54 | 13 | 10 | 8 | 4 | 9 | 24 | 230 |
| To-tal | 19.6 % | 27.4 % | 23.5 % | 5.7% | 4.35 % | 3.5% | 1.7% | 3.9% | 10.4 % | 100% |

Note. 1 = Less than 30 min, 2 = 30 min to 1hr, 3 = 1 hr to 2 hrs, 4 = 2 hrs to 3 hrs, 5 = 3 hrs to 4 hrs, 6 = 4 hrs to 5 hrs, 7 = 5 hrs to 6 hrs, 8 = More than 6 hrs, 9 = None

session. Only 1.9% of infrequent users reported using the Internet between three to five hours, while another 1.9% of infrequent users answered they used the Internet more than five hours per session. However, 39.6% of the participants who reported using the Internet between five to seven days per week (frequent users) also reported using the Internet less than one hour per session. Over 32% of frequent users answered they used the Internet between one to three hours per session, and 15.8% reported between three to five hours per session. Finally 10.9% of the frequent users answered they used the Internet more than five hours per session. The result of this cross-tabulation shows 97.0% of infrequent users reported using the Internet less than three hours per session while the other 3.8% answered they used the Internet more than three hours per session. However, 72.2% of infrequent users answered they used the Internet less than three hours, while the remaining 26.7% answered use that they the Internet more than three hours per session. These results indicate that frequent users of the Internet tend to have longer Internet sessions than infrequent users.

Table 54 shows the results of the cross-tabulation between the number days per week the Internet is used and fear based on not knowing how to operate a computer. The correlation between these variables was $n = 227$, Pearson $r = -.29082$, and $P < .01$. Nearly 30% of the participants who used the Internet one to four days a week (infrequent users)

reported they strongly disagree (16.7%) or disagree (13.2%) to having a fear of using the computer, while 7.9% of the infrequent users reported that they strongly agree (2.6%) or agree (5.3%). However, participants who reported using the Internet between five to seven days per week (frequent users), answered they strongly disagree (33.9%) or disagree (8.8%) to having a fear of using the computer. Only 0.4% of this group responded they disagree (0.4%). The cross-

Table 54

Number of Days Per Week * Fear of Using the Computer.

| | Fear of using the Computer | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | Row Tot |
| Numbers days per week | | | | | | |
| 1-4days | | | | | | |
| Count | 38 | 30 | 16 | 12 | 6 | 102 |
| Exp Val | 57.1 | 22.9 | 9.9 | 8.5 | 3.6 | 44.9% |
| Row Pct | 37.3% | 29.4% | 15.7% | 11.8% | 5.8% | |
| Col Pct | 29.9% | 58.8% | 72.7% | 63.2% | 75.0% | |
| Tot Pct | 16.7% | 13.2% | 7.0% | 5.3% | 2.6% | |
| 5-7days | | | | | | |
| Count | 77 | 20 | 2 | 1 | 0 | 100 |
| Exp Val | 55.9 | 22.5 | 9.7 | 8.4 | 3.5 | 44.1% |
| Row Pct | 77.0% | 20.0% | 2.0% | 1.0% | 0.0% | |
| Col Pct | 60.0% | 39.2% | 9.1% | 5.3% | 0.0% | |
| Tot Pct | 33.9% | 8.8% | 0.9% | 0.4% | 0.0% | |
| NO | | | | | | |
| Count | 12 | 1 | 4 | 6 | 2 | 25 |
| Exp Val | 14.0 | 5.6 | 2.4 | 2.1 | 0.9 | 11.0 |
| Row Pct | 48.0% | 4.0% | 16.0% | 24.0% | 8.0% | |
| Col Pct | 9.4% | 2.0% | 18.2% | 31.6% | 25.0% | |
| Tot Pct | 5.3% | 0.4% | 1.8% | 2.6% | 0.9% | |
| Column Total | 127 55.9% | 51 22.5% | 22 9.7% | 19 8.4% | 8 3.5% | 227 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree, 5 = Strongly agree

tabulation results show that 72.6% of frequent (42.7%) and infrequent (29.9%) users do not have a fear of using the computer. Therefore, for the most part, days of Internet use per week is not related to fear of using the computer.

Table 55 shows the results of the cross-tabulation between the number of days per week the Internet is used and fear of using the Internet because of not knowing how to operate a computer. The correlation between these two variables was $n = 226$, Pearson $r = -.28615$, and $P < .01$. Of the participants using the Internet between one to four days, 30.5% responded that they strongly disagree (16.8%) or disagree (13.7%) that they fear using the Internet because of not knowing how to operate a computer. Eight percent of the participants from this group responded that they agree with this question, and 41.1% of participants that fell into the frequent user category answered that they strongly disagree (35.8%) or disagree (5.3%) to having a fear of using the Internet. Only 0.9% of these users agreed that they have a fear of using the Internet because they don't know how to operate the computer. Over 71% of infrequent (30.5%) and frequent users (41.1%) do not fear using the Internet because of a lack of computer literacy.

Table 56 shows the results of the cross-tabulation between the number of days per week the Internet is used versus whether or not the participant could use the file transfer protocol(FTP). The correlation between these two

variables was n = 230, Pearson r = -.48328, and P < .01. 6.1% of the participants that answered they use the Internet

Table 55

Number of Days Per Week * Fear of Using the Internet.

| | Fear of using the Internet | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | Row Tot |
| Number of days per week | | | | | |
| 1-4days | | | | | |
| Count | 38 | 31 | 15 | 18 | 102 |
| Exp Val | 58.2 | 20.8 | 10.8 | 12.2 | 45.1% |
| Row Pct | 37.3% | 30.4% | 14.7% | 17.6% | |
| Col Pct | 29.5% | 67.4% | 62.5% | 66.7% | |
| Tot Pct | 16.8% | 13.7% | 6.6% | 8.0% | |
| 5-7days | | | | | |
| Count | 81 | 12 | 4 | 2 | 99 |
| Exp Val | 56.5 | 20.2 | 10.5 | 11.8 | 43.8% |
| Row Pct | 81.8% | 12.1% | 4.0% | 2.0% | |
| Col Pct | 62.8% | 26.1% | 16.7% | 7.4% | |
| Tot Pct | 35.8% | 5.3% | 1.8% | 0.9% | |
| NO | | | | | |
| Count | 10 | 3 | 5 | 7 | 25 |
| Exp Val | 14.3 | 5.1 | 2.7 | 3.0 | 11.1% |
| Row Pct | 40.0% | 12.0% | 20.0% | 28.0% | |
| Col Pct | 7.8% | 6.5% | 20.8% | 25.9% | |
| Tot Pct | 4.4% | 1.3% | 2.2% | 3.1% | |
| Column Total | 129 57.1% | 46 20.4% | 24 10.6% | 27 11.9% | 226 100.0% |

Note. 1 = Strongly disagree, 2 = Disagree, 3 = Are undecided, 4 = Agree

between one to four days per week (infrequent users) answered that they can use FTP, while 86.5% of this group responded that they cannot use FTP. Over 33% of the participants who use the Internet between five to seven days per week (frequent users) answered that they can use FTP, while only 10.4% of them answered that they cannot. These cross-

tabulation results indicate that frequent users tend to be able to operate FTP while infrequent users cannot.

Table 56

Number of Days Per Week * I Can Use FTP

| | I can use FTP | | |
|---|---|---|---|
| | Yes | No | Row Total |
| 1-4days | | | |
| Count | 14 | 90 | 104 |
| Exp Val | 42.5 | 61.5 | 45.2% |
| Row Pct | 13.5% | 86.5% | |
| Col Pct | 14.9% | 66.2% | |
| Tot Pct | 6.1% | 39.1% | |
| 5-7days | | | |
| Count | 77 | 24 | 101 |
| Exp Val | 41.3 | 59.7 | 43.9% |
| Row Pct | 76.2% | 23.8% | |
| Col Pct | 81.9% | 17.6% | |
| Tot Pct | 33.5% | 10.4% | |
| No | | | |
| Count | 3 | 22 | 25 |
| Exp Val | 10.2 | 14.8 | 10.9% |
| Row Pct | 12.0% | 88.0% | |
| Col Pct | 3.2% | 16.2% | |
| Tot Pct | 1.3% | 9.6% | |
| Column Total | 94 40.9% | 136 59.1% | 230 100.0% |

Table 57 shows the results of the cross-tabulation between the number of days per week the Internet is used and whether or not the participant can program HTML. The correlation between these two variables was $n = 230$, Pearson $r = -.38561$, and $P < .01$. Nearly 6% of the participants using the Internet between one to four days per week (infrequent users) answered that they can program HTML, while 39.6% of the participants from this group answered that they

cannot. On the other hand, 26.5% of the participants who use the Internet between five to seven days per week (frequent users) answered that they can program HTML while only 17.4% of these answered that they cannot. These cross-tabulation results indicate that participants who use the Internet frequently can program in HTML, more than infrequent users.

Table 57

Number of Days Per Week * I Can Program HTML.

| | I can program HTML | | |
|---|---|---|---|
| | Yes | No | Row Total |
| Number of days per week | | | |
| 1-4days | | | |
| Count | 13 | 91 | 104 |
| Exp Val | 34.8 | 69.2 | 45.2% |
| Row Pct | 12.5% | 87.5% | |
| Col Pct | 16.9% | 59.5% | |
| Tot Pct | 5.7% | 39.6% | |
| 5-7days | | | |
| Count | 61 | 40 | 101 |
| Exp Val | 33.8 | 67.2 | 43.9% |
| Row Pct | 60.4% | 39.6% | |
| Col Pct | 79.2% | 26.1% | |
| Tot Pct | 26.5% | 17.4% | |
| No | | | |
| Count | 3 | 22 | 25 |
| Exp Val | 8.4 | 16.6 | 10.9% |
| Row Pct | 12.0% | 88.0% | |
| Col Pct | 3.9% | 14.4% | |
| Tot Pct | 1.3% | 9.6% | |
| Column Total | 77 | 153 | 230 |
| | 33.5% | 66.5% | 100.0% |

Table 58 shows the results from the cross-tabulation of the days the Internet is used per week versus whether or not the participant can program. The correlation between these variables was n = 230, Pearson r = .31001. Thirty percent of

the participants who use the Internet between one to four days per week (infrequent users) responded that they cannot computer program, while 15.2% from this group answered they can. Ten percent of the participants who answered they use the Internet between five to seven days per week (frequent users) answered they cannot computer program, while 33.9% of the participants from this group answered they can. These cross-tabulation results show that if participants use the Internet frequently, they tend also to know more about how to program a computer than infrequent users.

Table 58

Number of Days Per Week * I Cannot Program.

| | I cannot program | | |
|---|---|---|---|
| | Yes | No | Row Total |
| 1-4days | | | |
| Count | 69 | 35 | 104 |
| Exp Val | 50.2 | 53.8 | 45.2% |
| Row Pct | 66.3% | 33.7% | |
| Col Pct | 62.2% | 29.4% | |
| Tot pct | 30.0% | 15.2% | |
| 5-7days | | | |
| Count | 23 | 78 | 101 |
| Exp Val | 48.7 | 52.3 | |
| Row Pct | 22.8% | 77.2% | |
| Col Pct | 20.7% | 65.5% | |
| Tot Pct | 10.0% | 33.9% | |
| No | | | |
| Count | 19 | 6 | 25 |
| Exp Val | 12.1 | 12.9 | 10.9% |
| Row Pct | 76.0% | 24.0% | |
| Col Pct | 17.1% | 5.0% | |
| Tot Pct | 8.3% | 2.6% | |
| Column | 111 | 119 | 230 |
| Total | 48.3% | 51.7% | 100.0% |

Language Utilization

Tables 59.1, 59.2, and 59.3 show the language usage frequencies divided into the groups English, Japanese, and other languages. Of the participants, 63.3% answered that their first language was English, 7.5% answered Japanese, while 29.2% responded that it is another language. Almost 90% of the participants answered that they use English when using the Internet, 4.8% answered Japanese, and 5.3% responded that they use a language other than English or Japanese. When they are at home, 69.3% use English, 4.8% of them use Japanese, and 25.9% of them responded that they use a language other than English or Japanese at home.

Table 59.1

First/Native Language

| Language | n | % |
|---|---|---|
| English | 143 | (63.3%) |
| Japanese | 17 | (7.5%) |
| Other | 66 | (29.2%) |
| Total | 226 | (100%) |

Table 59.2

Language Used on the Internet.

| Language | n | % |
|---|---|---|
| English | 205 | (89.9%) |
| Japanese | 11 | (4.8%) |
| Other | 12 | (5.3%) |
| Total | 228 | (100%) |

Table 59.3

Language Used at Home.

| Language | n | % |
|---|---|---|
| English | 158 | (69.3%) |
| Japanese | 11 | (4.8%) |
| Other | 59 | (25.9%) |
| Total | 228 | (100%) |

Table 60 shows the result of the cross-tabulation between a participant's first language and the language used on the Internet. The correlation between these variables was n = 222, Pearson r = .38936, and P < .01. For participants who answered that English is their first language, 99.3% of them indicated that they use English when they use the Internet, while only 0.7% reported using a language other than English or Japanese. Of the participants who answered that Japanese is their first language, 29.4% of them reported using English on the Internet, 64.7% reported Japanese, and 5.9% answered that they use a language other than English or Japanese when using the Internet. Of the participants who reported that their first language is one other than English or Japanese, 84.6% answered that they use English as their primary language on the Internet, while 15.4% answered that they use a language other than English or Japanese on the Internet.

This cross-tabulation indicates that if English is the first language, English is the language of choice(99.3%) on

the Internet. The same is true for languages other than English and Japanese; English is the preferred language. However, in the case where the participant's first language is Japanese, he/she also tends to use Japanese (64.7%) on the Internet.

Table 60

First Language * Internet Language.

| | Internet language | | | |
|---|---|---|---|---|
| | English | Japanese | Other | Row Total |
| English | | | | |
| Count | 139 | 0 | 1 | 140 |
| Exp Val | 125.5 | 6.9 | 7.6 | 63.1% |
| Row Pct | 99.3% | 0.0% | 0.7% | |
| Col Pct | 69.8% | 0.0% | 8.3% | |
| Tot Pct | 62.6% | 0.0% | 0.5% | |
| Japanese | | | | |
| Count | 5 | 11 | 1 | 17 |
| Exp Val | 15.2 | 0.8 | 0.9 | 7.7% |
| Row Pct | 19.4% | 64.7% | 5.9% | |
| Col Pct | 2.5% | 100.0% | 8.3% | |
| Tot Pct | 2.3% | 5.0% | 0.5% | |
| Other | | | | |
| Count | 55 | 0 | 10 | 65 |
| Exp Val | 58.3 | 3.2 | 3.5 | 29.3% |
| Row Pct | 84.6% | 0.0% | 15.4% | |
| Col Pct | 27.6% | 0.05 | 83.3% | |
| Tot Pct | 24.8% | 0.05 | 4.5% | |
| Column | 199 | 11 | 12 | 222 |
| Total | 89.6% | 5.0% | 5.4% | 100.0% |

Table 61 shows the results of the cross-tabulation between first language when using the Internet versus whether or not participants feel uncomfortable communicating in a language other than their native language. The correlation between these two variables was n = 218, Pearson r = -.32491,

$P < .01$. Twenty seven percent of the participants whose first language is English responded that they strongly disagree (12.4%) or disagree (14.6%) that they feel uncomfortable if they have to communicate in a language other than their first language. Nearly 50% from this group responded that they strongly agree (28.5%) or agree (21.2%) that they feel uncomfortable using a language other than their first language on the Internet. Of the participants whose first language was reported to be Japanese, 35.3% of them responded strongly disagree (23.5%) or disagree (11.8%) that they feel uncomfortable using a language other than Japanese on the Internet, and 41.2% of this group responded strongly agree (5.9%) or agree (35.3%) that they feel uncomfortable communicating in a language other than Japanese on the Internet. However, for participants whose first language is not English or Japanese, 59.4% of them reported strongly disagree (29.7%) or disagree (29.7%) that they feel uncomfortable using a language other than their first language on the Internet, while 20.3% of them answered strongly agree (4.7%) or agree (15.6%).

These cross-tabulation results indicate that participants whose first language is English or Japanese feel uncomfortable using a language other than their native language on the Internet. However, for participants whose first language is not English or Japanese, more than half of them (59.4%) indicated that they do not feel uncomfortable

using a language other than their first language on the Internet.

Table 61

I Feel Uncomfortable Using Language Other Than My First Language * First Language.

| | First language | | | |
|---|---|---|---|---|
| | English | Japanese | Other | Row Tot |
| Strongly disagree | | | | |
| Count | 17 | 4 | 19 | 40 |
| Exp Val | 25.1 | 3.1 | 11.7 | 18.3% |
| Row Pct | 42.5% | 10.0% | 47.5% | |
| Col Pct | 12.4% | 23.5% | 29.7% | |
| Tot Pct | 7.8% | 1.8 | 8.7% | |
| Disagree | | | | |
| Count | 20 | 2 | 19 | 41 |
| Exp Val | 25.8 | 3.2 | 12.0 | 18.8% |
| Row Pct | 48.8% | 4.9% | 46.3% | |
| Col Pct | 14.6$ | 11.8% | 29.7% | |
| Tot Pct | 9.2% | 0.9% | 8.7% | |
| Are undecided | | | | |
| Count | 32 | 4 | 13 | 49 |
| Exp Val | 30.8 | 3.8 | 14.4 | 22.5% |
| Row Pct | 65.3% | 8.2% | 26.5% | |
| Col Pct | 23.4% | 23.5% | 20.3% | |
| Tot Pct | 14.7% | 1.8% | 6.0% | |
| Agree | | | | |
| Count | 29 | 6 | 10 | 45 |
| Exp Val | 28.3 | 3.5 | 13.2 | 20.6% |
| Row Pct | 64.4% | 13.3% | 22.2% | |
| Col Pct | 21.2% | 35.3% | 15.6% | |
| Tot Pct | 13.3% | 2.8% | 4.6% | |
| Strongly agree | | | | |
| Count | 39 | 1 | 3 | 43 |
| Exp Val | 27.0 | 3.4 | 12.6 | 19.7% |
| Row Pct | 90.7% | 2.3% | 7.0% | |
| Col Pct | 28.5% | 5.9% | 4.7% | |
| Tot Pct | 17.9% | 0.5% | 1.4% | |
| Column | 137 | 17 | 64 | 218 |
| Total | 62.8% | 7.8% | 29.4% | 100.0% |

The results of these cross-tabulations are summarized in Table 62.

Table 62

Summary of Tables 52 to 61

| Cross-tabulation | Probability | Supports Hypothesis |
|---|---|---|
| Table:52 Days/week frequency | -- | -- |
| Table:53 Days/week * hours/session | P < .01 | Yes |
| Table:54 Days/week * fear of comp | P < .01 | Yes |
| Table:55 Days * fear of Internet | P < .01 | Yes |
| Table:56 Days * FTP | P < .01 | Yes |
| Table:57 Days * HTML | P < .01 | Yes |
| Table:58 Days * I cannot program | P < .01 | Yes |
| Table:59.1, 59.2 & 59.3 Language frequency | -- | -- |
| Table:60 1st language * Internet language | P < .01 | |
| Table:61 1st language * no 1st language | P < .01 | |

Table 52 shows the frequency results of days per week of using the Internet. Over 45% of the participants used the Internet between one to four days; 43.9% of them used the Internet between five to seven days.

Table 53 shows the cross-tabulation between number of days of using the Internet per week and hours per session. The results indicate that frequent users tend to have longer Internet sessions than infrequent users. This supports the

hypothesis that the amount of CMC culture shock does not relate to an individual's knowledge or skill in operating a computer.

Table 54 shows the cross-tabulation results between days of using the Internet per week with fear of using the computer because of a lack of computer operation skill. Days of using the Internet per week was inversely related to fear of using the computer. This is because increased use of the Internet environment makes participants more familiar and less afraid of the computer. This explanation supports the hypothesis that the amount of CMC culture shock does not relate to an individual's knowledge and skill in operating a computer.

Table 55 shows the cross-tabulation results between days of using the Internet per week versus fear of using the Internet because of a lack of computer operation skill. The results suggest that the number of days of using the computer is inversely related to fear of using the Internet. Again, this result supports the hypothesis that the amount of CMC culture shock does not relate to an individuals knowledge and skill in operating a computer. Rather, as the participant becomes familiar with the Internet environment, fear is reduced.

Table 56 shows the cross-tabulation results between the number of days the Internet is used per week and if the participants can use FTP. These cross-tabulation results

suggest that the number of days of use relates to being able to use FTP. This result supports the hypothesis that the amount of CMC culture shock does not relate to an individual's knowledge and skill in operating a computer. If the participant's Internet usage is increased, there is greater opportunity to use FTP.

Table 57 shows the cross-tabulation results between days per week the Internet is used versus whether or not the participant can program in HTML. The results indicate that the days of using the Internet per week are related to programming ability in HTML. This result supports the hypothesis that the amount of CMC culture shock does not relate to an individual's knowledge and skill in operating a computer. Frequent users have more opportunity than infrequent users to experience and acquire HTML programming ability.

Table 58 shows the cross-tabulation results between days of per week of Internet usage and whether participants can computer program. The result shows that the number of days Internet use relates to computer programming ability. This result does not support the hypothesis that the amount of CMC culture shock is not related to an individual's knowledge and skill in operating a computer because the results show that participants who use the Internet frequently tend to also know how to program a computer in more cases than infrequent users. Thus, these results relate to an individual's

knowledge and skill in operating a computer. Therefore, this result does not support the hypothesis.

Tables 59.1, 59.2, and 59.3 show the frequency of participants' first/native language, the language used on the Internet, and the language used at home. Of the participants, 63.3% have English as their first/native language, 7.5% have Japanese, and 29.2% have some other language as their first/native language. The language they used on the Internet is English (89.9%), Japanese (4.8%), and an other language (5.3%), respectively. Finally, the participants' language used at home is English (69.3%), Japanese (4.8%), and an other language (25.9%).

Table 60 shows the cross-tabulation results between participants' first/native language and the language used on the Internet. English and Japanese native speakers tend to use their native language on the Internet. However, for languages other than English and Japanese, the native language was not found to be the language of choice on the Internet. These cross-tabulation results suggest that a participant's native/first language determines global communication. English and Japanese native speakers, in general, do not support the hypothesis because they do not prefer to use a non-native language, limiting interaction to those that speak their native language. For participants whose native language is not English or Japanese, the language used on the Internet was a non-native language. This

result supports the hypothesis that Internet communication fosters global communication.

Table 61 shows the cross-tabulation results between the first language and whether or not participants feel comfortable communicating in a language other than their first/native language. These results parallel those of Table 57. English and Japanese speakers indicate, for the most part, that they are uncomfortable, those who speak other languages indicate that they feel comfortable. Thus, those who speak a native language other than English or Japanese support the hypothesis that Internet communication raises global awareness.

Discussion

The main focus of this survey is to examine how CMC fits the paradigm model. To identify the paradigm model, frequency count and two hypotheses are used for testing cross-tabulation data treatment: (a) computer, Internet knowledge and skill, and (b) Face-to-Face (FTF) communication and global awareness. The results from these cross-tabulations raised other questions. The questions examined (a) days per week of Internet usage and use of language, and (b) how a participant's language background affects the response to questions regarding FTF communication and global awareness when using the Internet.

In the first section, seven cross-tabulations tested the hypothesis that the amount of CMC culture shock is inversely

proportional to an individual's knowledge and skill in operating a computer. The results show that

1. The participants' computer programming ability did not relate to their knowledge of the type of platform being used and access to the Internet;
2. Participants' fear of using the Internet because of the computer skill and their knowledge of the common Internet acronyms FTP, FAQ, and IRC are not related;
3. The participants' Internet knowledge of common Internet acronyms FTP, FAQ, and IRC are not relating to their fear of using the Internet because of a lack of computer skill;
4. The participants' fear of using the Internet does not depend on programming ability;
5. The number of days per week the participants use the Internet does relate to fear of using the computer.

Therefore, the results from cross-tabulation suggest that computer and Internet knowledge and skill does not relate to the amount of CMC culture shock.

In the second section, 16 cross-tabulations addressed the second hypothesis that CMC diminishes FTF communication and raises global awareness. The results were:

1. Communication biases regarding age, gender, physical appearance, and nationality on the Internet do not relate to communicating with others;
2. Participants who do not have a fear of using the

computer send email and/or post to newsgroups to contact users from other countries. Also, they do not have a fear of facing unknown users on the Internet;

3. The participants who do not have a fear of using the Internet send and/or post to newsgroups to contact users from other countries;
4. Many participants answered that they prefer to use email more than postal mail, and they do not care about the receiver's time difference. Thus, they send email and/or post to newsgroups even if it is late at night and/or early in the morning, and use the Internet to make contact users from the other countries;
5. If the participant answered that they send email and/or post to newsgroup even if it is late at night and/or early in the morning, they do not care about the other user's time difference;
6. Many participants prefer communicating in person rather than communicating on the Internet;
7. If participants' native/first language is English or Japanese, they feel uncomfortable using a language other than their native/first language on the Internet. However, if participants' native/first language is other than English or Japanese, they do not feel uncomfortable using a language other than

their own on the Internet;

8. The participants who use the Internet more days per week tend to also use it in longer sessions.

Therefore, the results from the second section show that CMC diminishes FTF communication, but the other user's age, gender, physical appearance, and nationality are not significant factors to communicating on the Internet. Also, if the participants do not have a fear of using the computer and the Internet, they tend to use the Internet to make contact with users from other countries because of the advantages of the Internet usage: faster and more accurate delivery system than postal mail, no geographical restrictions, and no time restrictions.

The third section of the eight cross-tabulations were raised from the results of the other two sections. The cross-tabulations were emphasizing (a) the numbers of days per week of Internet usage and language utilization, and (b) how a participant's language background affected responses to the questions regarding FTF communication and global awareness when using the Internet. The results suggested that

1. Frequent Internet users (five to seven days per week) tend to have longer Internet sessions, have less fear of using the computer and the Internet, are able to use FTP, program HTML, and have more computer programming ability than infrequent Internet users

(one to four days);

2. Participants whose first/native language is English and/or Japanese particularly prefer to use their first/native language on the Internet.
3. Participants whose first/native language is English and/or Japanese feel uncomfortable using a language other than their first/native language on the Internet.

Therefore, the results from the third section show that the amount of CMC culture shock does not relate to an individual's knowledge and skill in operating a computer. When frequent Internet users become familiar with the Internet environment, the fear of using the computer and the Internet are diminished. Then, the users familiarity with the Internet increases the motivation and capability to use FTP and HTML programming more than infrequent users.

Also, the other result from this third section is if the user's native/first language is English or Japanese, they insist on using their native/first language on the Internet because they feel uncomfortable using another language. However, if the user's native/first language is other than English or Japanese, it is not important to use the native/first language on the Internet. Therefore, the results indicate that if the user's native/first language is English or Japanese, they have trouble with other language utilization on the Internet.

# CHAPTER FIVE

## Conclusion

This chapter presents an overview of the history of media and the conclusion of this study. It summarizes how Computer-Mediated Communication (CMC) fits the paradigm model, focusing on communication media from a technological perspective.

The development of communication media and computer networks has greatly influenced both business and education. Innovations in computer network technology have created a new and distinct method of human communication known as CMC. This new methodology can be considered a new paradigm as defined by Kuhn (1970). As such, it exposes and attempts to overcome problems found in traditional communication methodologies. Initially, as with all new paradigms, it is not universally adopted but encounters significant outside resistance.

When considering how CMC fits the paradigm model and in identifying the causes for resistance to it, two hypotheses emerged from the study. The first hypothesis is that the amount of CMC culture shock is inversely proportional to an individual's knowledge and skill in operating a computer; the second hypothesis is that CMC diminishes FTF communication and raises global awareness. After examining these two hypotheses, five primary observations emerged from the study.

1. CMC solves problems of traditional communication paradigms;

2. An individual's skill in computer operation and Internet knowledge has no direct relationship with Internet utilization anxiety;
3. CMC paradigm resistance is mostly related to human communication problems;
4. CMC reduces human communication biases and expands the user's global awareness; and
5. CMC paradigm resistance is related to language use.

The first major conclusion of this study is that CMC solves problems of the traditional communication paradigms, especially those associated with distance and time. Traditional communication technologies include postal mail, telephone, and FAX. The Internet is faster, less expensive, and makes distance and time zone differences irrelevant to the equation. Not surprisingly, many of the participants answered that they send email or post to newsgroups regardless of the time of day because they can ignore the receiver's time difference. Also, many participants indicated that they use email more than postal mail, and use email to contact users from other countries. Just as Kuhn's definition of a new paradigm dictates, CMC overcomes problems of traditional methodologies and provides new opportunities for its users.

The second primary conclusion of this study is that, regardless of an individual's skill in computer operation and Internet knowledge, there is no real correlation to Internet

utilization anxiety. Results from questionnaire in this study show that many participants do not have a fear of using the computer or the Internet. Before the rise of CMC, utilization of the Internet required detailed network protocol knowledge and computer programming ability. However, much of this complexity has been reduced to a simplified point-and-click interface. Once computers and Internet use were simplified, even users who did not have a strong computer background started using the Internet as their communication tool. Therefore, innovations of the computer and network technologies provide abundant Internet use opportunities to the nonprofessional.

A third significant conclusion is that CMC paradigm resistance is mostly related to human communication problems. An important distinction must be made between using a computer in isolation and using the Internet. Using the Internet involves communication with other people. The resistance shown by infrequent users is analogous to "culture shock" which results from living or participating in an unknown, unfamiliar environment. The results of this study show that the numbers of days per week spent using the Internet relates to the degree of computer and Internet anxiety. It does not necessarily relate to the amount of computer knowledge or skill. Using the Internet frequently makes users feel confident and comfortable in using it as a communication tool. However, infrequent Internet users

reported difficulty assimilating into the CMC culture. Some infrequent users are confused conceptually by CMC and do not see it as a valid communication tool. When exposed to CMC, such individuals express that they feel disoriented or lost, much like being lost in a foreign country. This fear becomes a major obstacle in allowing communication to exceed the barrier of required computer skills. However, many infrequent users with limited computer skills and knowledge do not fear using the Internet primarily because they have grown accustomed to it. For these individuals, the Internet brings familiarity and comfort. Regardless of a participant's technical computer background, frequent Internet users demonstrate a higher level of confidence in adopting CMC than infrequent users.

The fourth primary conclusion is that CMC reduces human communication bias and expands global awareness for the users. The CMC paradigm is intimately related to human communication issues because of restrictions that it imposes. CMC reduces FTF interaction which reduces the communication bias of physical appearance, gender, age, and nationality. The majority of the participants responded that physical appearance, gender, age, and nationality are not important factors when communicating on the Internet. Additionally, many participants agreed that they do not fear facing unknown users when they communicate via the Internet. Moreover, they indicated that they do not feel nervous sending email to

unknown users. At the same time, while CMC decreases FTF communication, it increases opportunities to communicate with users from other countries and expands global awareness by making the borders between countries inconsequential.

The last primary conclusion for this study is that CMC paradigm resistance is related to language utilization. While the CMC paradigm does much to expand global awareness to some extent, it does not overcome all of the difficulties associated with language differences. The survey results show that participants with English as their native language use English at home and when using the Internet. The majority of native English speakers indicated that they feel uncomfortable using other languages on the Internet. This trend, however, was not the case for individuals whose native language was not English or Japanese. Many participants from this group use English regularly on the Internet but speak a different language at home. Hence, language resistance was limited for the most part to native speakers of English and Japanese, but not to speakers of other languages.

Therefore, many users resist adopting CMC not because of a lack of technical knowledge and computer skills but because of each individual's emotions toward unfamiliarity with the CMC culture. Thus, the most significant source of resistance for the users is not technical skills or knowledge but perceptions of the CMC culture.

Implications

With regard to language resistance on the Internet, several obstructions exist. While simplification of the technology does much to advance the status of CMC, language barriers are perhaps the largest single remaining obstacle. Various Internet browsers have been created for users who speak French, Spanish, German, Japanese, Korean, and Chinese. These programs attempt to mitigate resistance caused by language barriers on the Internet. However, content providers typically only provide information in a single language. An organization or company located in an English speaking country, for example, typically provides World-Wide Web (WWW) homepages in English only. Many non-English speaking users only recently have been able to create homepages in their native languages with the advancement of software internationalization. Additionally, larger international companies are beginning to mirror their sites in a variety of languages. Perhaps advancements in version control management and machine translation will help lower this barrier and further the globalization of CMC.

Limitations

The survey questionnaire materials were prepared in English which required the participants to understand English. This built-in bias may have influenced some of the results with regard to questions dealing with preferred language.

Also, this questionnaire study was limited to two forms of sample collection. First, a traditional pen-and-paper type survey was performed. The paper survey only sampled California State University, San Bernardino (CSUSB) students and staff. Thus, geographically and occupationally constrained subject collections produced the sample limitation.

The second method of collection was an online survey via email and the World-Wide Web. Again, materials were only prepared in English, with the rationale being that English remains the dominant language of the Internet.

Recommendations for Further Study

Language barriers could be an important factor in resistance to the Internet and CMC culture because the language problem plays a significant role in intercultural (global awareness) and human communication (interpersonal communication). Thus, if the survey had been prepared in a variety of languages, it could have been posted to non-English speaking newsgroups, broadening the survey baseline. Such a baseline would be useful in analyzing the CMC culture shock problem from a border perspective.

Therefore, further study which focuses on language problems would provide information on how individuals react when faced with a foreign language and culture on the Internet. Further study should assist in our appreciation of this and contribute to our understanding of resistance to the

CMC paradigm.

APPENDIX A: Offline questionnaire

**Questionnaire**

1)I am (age)
1:12-18 2:19-25 3:26-31 4:32-38 5:39-45 6:46-52
7:52-58 8:59-65 9:Older than 65

2)How many days do you use the Internet a week? (Select One)
1:1 day 2:2 days 3:3 days 4:4 days 5:5 days 6:6 days
7:7 days 8:I don't use it

3)How many hours do you usually use the Internet each session? (Select One)
1:Less than 30min 2:30min-1hr 3:1-2hrs 4:2-3hrs
5:3-4hrs 6:4-5hrs 7:5-6hrs 8:More than 6hrs 9:None

4)Where did you primarily learn how to use the computer?(Select One)
1:School 2:At work 3:By myself 4:From friend 5:Training course
6:Never

5)Where did you primarily learn how to use the Internet?(Select One)
1:School 2:At work 3:By myself 4:From friend 5:Training course
6:Never

6)I can use(operate), (Check all that apply)
1:Email 2:WWW(netscape/mosaic/lynx) 3:FTP 4:Gopher
5:Chat 6:Newsgroups 7:I cannot use any of them

7)I can program, (Check all that apply)
1:Pascal 2:C/C++ 3:Basic 4:Perl/awk/sed 5:HTML 6:Java
7:Assembly 8:I cannot program

8)When I use the Internet, the platform I use most is, (Select One)
1:UNIX 2:VAX 3:MacOS 4:Windows 5:WindowsNT 6:DOS
7:OS/2 8:I don't know

9)FTP stands for _____

10)FAQ stands for _____

11)IRC stands for _____

12)When you are doing via anonymous FTP, you should type your login name as your password [True/False]

13)".mov" file is a movie/video file. [True/False]

14)".gif" file is a sound file. [True/False]

15)When you would like to see list of your file(s) in a shell account, the commands "ls" or "dir" are typical. [True/False]

16)Email address is <Your_name>@machine-name.sub-domain.domain. [True/False]

17)Lynx is only text oriented WWW browser. [True/False]

YOUR COMMUNICATION WITH OTHER PEOPLE. INDICATE THE DEGREE TO WHICH EACH STATEMENT APPLIES TO YOU:

5:Strongly agree 4:Agree 3:Are undecided 2:Disagree 1:Strongly disagree

THERE ARE NO RIGHT OR WRONG ANSWERS. JUST RECORD YOUR FIRST IMPRESSION.

18)When sending email to an unknown user I feel very nervous. (5.4.3.2.1)

19)I have fear of facing an unknown user on the Internet. (5.4.3.2.1)

20)I use the Internet to communicate with others because I feel more comfortable communicating this way than by Face-to-face communication.
(5.4.3.2.1)

21)I feel more comfortable when expressing myself on the Internet than when talking in front of people. (5.4.3.2.1)

22)I don't care about other person's nationality or ethnicity when I communicate on the Internet. (5.4.3.2.1)

23)I don't care about other person's gender when I am communicating on the Internet. (5.4.3.2.1)

24)I don't care about other person's age when I am communicating on the Internet. (5.4.3.2.1)

25)I don't care about other person's physical appearance when communicating on the Internet. (5.4.3.2.1)

26)I have a fear of using computers because I don't know how to operate the computer (5.4.3.2.1)

27)I have a fear of using the Internet because I don't know how to operate the computer. (5.4.3.2.1)

28)I have used email and/or posted to newsgroups to make contact with a user from another country.(5.4.3.2.1)

29)If I wish to send an email or post to newsgroups, I will do it even if it is late night and/or early morning. (5.4.3.2.1)

30)When I send email or post newsgroups, I don't think about the receiver's time difference. (5.4.3.2.1)

31)I prefer to use email more than postal mail because email is faster than postal mail. (5.4.3.2.1)

32)When I use the Internet, I feel uncomfortable if I have to communicate in a language other than my native/first language. (5.4.3.2.1)

33)What is your native/first language? (Select One)
1:English 2:Spanish 3:French 4:German 5:Japanese
6:Korean 7:Chinese 8:Portuguese 9:Arabic
10:Other:_____(Specific)

34)Which language do you prefer to use when you are using the Internet? (Select One)
1:English 2:Spanish 3:French 4:German 5:Japanese
6:Korean
7:Chinese 8:Portuguese 9:Arabic 10:Other:_____(Specific)

35)Which language do you speak at home? (Select One)
1:English 2:Spanish 3:French 4:German 5:Japanese
6:Korean
7:Chinese 8:Portuguese 9:Arabic 10:Other:_____(Specific)

APPENDIX B: Online questionnaire

Informed Consent

The purpose of this study is to identify modes of utilization of computer network systems (such as the Internet) and reasons for resistance to it. This study is being conducted by Kaori Konta under the supervision of Dr. Jandt, professor of Communication studies, Dr .Lin, professor of Information management, and Dr. Jackson, Associate Dean of Extended Education. This study has been approved by the Institutional Review Board of California State University San Bernardino.

Please be assured that any information you provide will be held in strict confidence by the researcher. At no time will your name or userid (or electric mail address) be reported along with your responses. All data will be reported in group form only. At the conclusion of this study, you will receive a copy by addressing a separate request to researcher Kaori Konta via e-mail, kkonta@acme.csusb.edu or konta@kaiwan.com or by marking the appropriate place on the answer form.

Please understand that your participation in this research is totally voluntary and you are free to withdraw at anytime during this study without penalty, and to remove any data at any time during this study. I acknowledge that I have been informed of, and understand, the nature and purpose of this study, and I freely consent to participate. I agree not to discuss the content of the survey until after August 10, 1996. By completing and returning this questionnaire by email, your consent is assumed.

Go To Questionnaire Page.

Online Survey

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Real name (optional):

Email address (required):

This questionnaire asks about how you utilize the computer and the Internet.

1: Age:
O1:12-18 O2:19-25 O3:26-31 O4:32-38 O5:39-45 O6:46-52
O7:53-58 O8:59-65 O9:Older than 65

2: How many days a week do you usually use the Internet a week?
O1:1 day O2:2 days O3:3 days O4:4 days O5:5 days O6:6 days
O7:7 days O8:I don't use it.

3: How many hours do you usually use the Internet each session?
O1:Less than 30min O2:30min-1hr O3:1-2hrs O4:2-3hrs O5:3-4hrs 6:4-5hrs O7:5-6hrs O8:More than 6hrs O9:None

4: Where did you primarily learn how to use the computer?
O1:School O2:At work O3:By myself O4:From friend
O5:Training course O6:Never

5: Where did you learn how to use the Internet?
O1:School O2:At work O3:By myself O4:From friend
O5:Training course O6:Never

6: I can use(operate):
□1:Email □2:WWW(Netscape/Mosaic/Lynx) □3:FTP □4:Gopher
□5:Chat □6:Newsgroups □7:I cannot operate any of them.

7: I can program:
□1:Pascal □2:C/C++ □3:Basic □4:Perl/awk/sed □5:HTML □6:Java
□7:Assembly □8:I cannot program.

8: When I using the Internet, the platform I use most is:
O1:UNIX O2:VAX O3:MacOS O4:Windows O5:WindowsNT O6:Dos
O7:OS/2 O8:I don't know.

9: :FTP stands for:

10: FAQ stands for:

11: IRC stands for:

12: When you are doing anonymous FTP, you should type your login name as your password.
OTrue OFalse

13: ".mov" file is a movie file. OTrue OFalse

14: ".gif" file is a sound file. OTrue OFalse

15: When you would like to list of your file(s) in a shell account, the commands "ls" or "dir" are typical.
OTrue OFalse

16: Email address is (Your_name)@machine-name.sub-domain.domain OTrue OFalse

17: Lynx is only text oriented WWW browser. OTrue OFalse

YOUR COMMUNICATION WITH OTHER PEOPLE. INDICATE THE DEGREE TO WHICH EACH
STATEMENT APPLIES TO YOU:

5:Strongly agree 4:Agree 3:Are undecided 2:Disagree
1:Strongly disagree

THERE ARE NO RIGHT OR WRONG ANSWERS. JUST RECORD YOUR FIRST IMPRESSION.

18: When sending email to an unknown user I feel very nervous.
O5 O4 O3 O2 O1

19: I have fear of facing an unknown user on the Internet.
O5 O4 O3 O2 O1

20: :I use the Internet to communicate with others because I feel more comfortable communicating this way than by face-to-face communication.
O5 O4 O3 O2 O1

21: I feel more comfortable when expressing myself on the Internet than when talking in front of people.
O5 O4 O3 O2 O1

22: I don't care about other person's nationality or ethnicity when I have communicate with the others on the Internet.
O5 O4 O3 O2 O1

23: I don't care about other person's gender when I am communicating with others on the Internet.
O5 O4 O3 O2 O1

24: I don't care about other person's age when I am communicating with others on the Internet.
O5 O4 O3 O2 O1

25: I don't care about other person's physical appearance when I communicate with others on the Internet.
O5 O4 O3 O2 O1

26: I have a fear of using the computers because I don't know how to operate the computer.
O5 O4 O3 O2 O1

27: I have a fear of using the Internet because I don't know how to operate the computer.
O5 O4 O3 O2 O1

28: I have used email and/or posted to newsgroups making contact with a user from another country.
O5 O4 O3 O2 O1

29: If I wish to send an email or post to newsgroups, I will do it even if its late night and/or early morning.
O5 O4 O3 O2 O1

30: When I send email or post newsgroups, I don't think about the receiver's time difference.
O5 O4 O3 O2 O1

31: I prefer to use email more than postal mail because email is faster than postal mail.
O5 O4 O3 O2 O1

32: When I use the Internet, I feel uncomfortable if I have to communicate in a language other than my native/first language.
O5 O4 O3 O2 O1

33: What is your native/first language? O1:English O2:Spanish O3:French O4:German O5:Japanese O6:Korean O7:Chinese O8:Portuguese O9:Arabic O10:Other:(please specify)

34: Which language do you prefer to use when you are using

the Internet?
O1:English O2:Spanish O3:French O4:German O5:Japanese
O6:Korean O7:Chinese O8:Portuguese O9:Arabic
O10:Other:(please specify)

35: Which language do you speak at home? O1:English
O2:Spanish O3:French O4:German O5:Japanese O6:Korean
O7:Chinese O8:Portuguese O9:Arabic O10:Other:(please
specify)

Would you like to receive the result of this questionnaire?
O1:Yes O2:No

---

Send it | Start over

---

Thank you for your participation!

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The purpose of the study you have just participated in is to investigate the usage of a computer network systems in human communication and to identify reasons for resistance to it. Participants in this research are expected to range from infrequent to frequent Internet users. Also, participants' Internet knowledge, degree of resistance to the operation of the technology, and global awareness via computer network is expected to vary. This sheet provides you the initial data you need to better understand why the study was undertaken. Please read the following paragraph and then sign this sheet to indicate (1) that you have been debriefed and had an opportunity to ask questions concerning the research by either the investigator or his/her representative and (2) (because the project will run over several days) that you will refrain from discussing the research project until the date specified has passed.

This study seeks to identify correlations between frequency of Internet utilization, resistance to it, and perspectives in human communication. Your responses will be treated confidentially and will in no way will be made public. By sending a separate email message request (or checking the correct box in the survey form), you have the opportunity to obtain the conclusions made by the researcher in this study.

By submitting the form you indicate that you have read the debriefing statement and have been given a chance to have any questions answered. Your signature or completion of the questionnaire indicates that you agree not to disclose what you have seen or the scales you completed until 8/10/96. Please direct further comments, questions, and concerns to Kaori Konta.kkonta@acme.csusb.edu Thanks again!

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