

Gender Differences in Internet Usage and Task Preferences

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INTRODUCTION

How people use the Internet is an intriguing question to researchers, computer educators, Internet content providers (ICPs), and marketing practitioners. With the expansion of online information resources and the improvement of connection bandwidth, Internet users have been offered more and more choices, at the same time, faced with more and more dilemmas on how to allocate their time and energy online. How much time do people spend on surfing the Internet? What do they do? Are there any traceable patterns to interpret the Internet behavior and to predict future use based on people's demographic, social, or psychological characteristics? These are all interesting questions that researchers attempt to answer.

In 1995, the HomeNet project conducted at the Human Computer Interaction Institute, Carnegie Mellon University, launched a series of field studies to examine the residential Internet behavior. It has found that social demographics—generation, race and gender, rather than socioeconomic factors—like income, education—and psychological factors—like social extraversion and attitude toward computing—were major influences on use (Kraut, Scherlis, Mukhopadhyay, Manning, & Kiesler, 1996). Following the HomeNet project's initial attempt, many empirical studies have been conducted globally to study the Internet behavior and its driving factors.

Among these efforts, a noticeable focus is to resolve the long-lasting controversy, inherited from the similar debate of computer behavior studies, on how gender differences influence the way people use the Internet. Many researchers believe that females are less technology-inclined, less motivated, and therefore less competent in the masculine computer and Internet culture; on the other hand, some other researchers argue females have the ability to be proficient in use of the Internet.

The present study is thereby conducted to provide more empirical evidence of gender effects on Internet usage and task preferences. In particular, we are interested in examining gender influences when users' computer proficiency is controlled for. We believe that the results of this study can provide valuable insights into effective online content delivery, targeted marketing strategies, and customized computer education to encourage use. The close examination of people's actual surfing data can also contribute to a better understanding of how the Internet is actually utilized.

The next section describes the debate about how women and men respond in different ways to computers and the Internet. This is followed by a presentation of our study design: the monitoring software, the content classification schema and method, and the user population that we studied. The findings are presented next, followed by concluding remarks.

BACKGROUND

Research of gender influences on use of computers has generally shown diffused results. Many studies have found that males are more technologically inclined, more likely to perceive learning about computers is fun, more versatile in computer use, and have more confidence in computers than females (Krendl, Broihier, & Fleethood, 1989; Qureshi & Hoppel, 1995; Wilder, Mackie, & Cooper, 1985). Researchers have also found that women tend to use computers for work only, while men use computers for many other tasks (Condry & Keith, 1983, Gattiker, Gutek, & Berger, 1985), and females are more likely to experience techno stress in using PCs compared to males (Elder, Gardner, & Ruth, 1987). However, some other studies have shown evidence that females have the ability to be proficient in computing as their male peers (Turkle, 1995); when the level of experience is controlled for, males and females have similar level of interests in computers (Chen, 1986); and females are even more likely to think that computers are fun compared to males under certain circumstances (Kaplan, 1994).

Similar controversy continues on how gender differences impact the Internet behavior. Many researchers believe that the Internet has been male dominated since its inception: more males than females are using the Internet, males spend longer session online than females, and females lack intrinsic motivation to perceive the Internet as fun (Gackenbach & Ellerman, 1998). However, contradictory voices are also heard. The HomeNet study, along with many other studies, found that females tend to favor computer-mediated communication more than males: they perceive computer-mediated communication to be easier to use, more efficient and more effective than males (Allen, 1995; Kraut et al, 1996; Morahan-Martin & Schumacher 1997). It has also been shown that females use online social clubs and chat rooms more often (Tapscott, 1998); and they perceive certain Internet services more fun and use them more effectively, such as messaging facility, animation and multimedia feature (Teo & Lim, 1998).

The present study aims to examine the gender influences on Internet usage and task preferences in greater details. First, unlike the majority of the previous studies where Internet survey, interview

and pencil-paper questionnaire are predominant methodologies of assessing Internet use, we developed a software program that records people's actual surfing activities. Second, we classify surfing activities into 17 categories, representing various information services and topics (such as e-mail, chatting, and online shopping). Such classification enables us to study gender influences on each of the major Internet components. Finally, our user population is gender and race balanced. Participants have similar social demographic characteristics, such as age, professional backgrounds, and computer proficiency, leaving gender and race the main sources of variation.

The effects of race, or country of origin, are also considered in the present study, because race is one of the most important Internet behavior determinants identified by the HomeNet study, and our user population is composed of multiple ethnic groups.

RESEARCH STUDY

The software program that records surfing activities was installed on participants' computers in early February, 2001. The participants were not informed when the program would be activated to monitor use. We selected three discrete weeks to collect surfing data for analyzing: the first week of March, the second week of April, and the first week of May, each representing a distinct school season that may influence use (in the middle of the semester, towards final exams, and the final week).

The Monitoring Software

We developed a monitoring software program to record both Web browsing and other Internet related activities, such as FTP file transfer, *Napster* music exchange, and use of *Microsoft Outlook* to write e-mails. The monitoring software also transfers the surfing logs to our central data repository automatically via Internet on daily basis.

The Content Classification Schema and Method

Our typology of the Internet mainly evolves from the classification scenario used by major search en-

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