Gender and the Internet, *Revisited*

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Abstract:

We provide a brief review of the literature on gender and the Internet. Earlier studies on the subject were rather descriptive because the overarching purpose was to identify and to monitor the gaps. The emerging trend in the literature is more reflective and nuanced. The topic has become more interdisciplinary, moving beyond communications and social sciences, and reaching into medicine, health sciences, among others. Owing to more extensive data collection and more precise survey instruments, researchers are applying advanced research methods with convincing results. The empirical evidence is more international, encompassing developing countries in addition to industrialized economies. These advances have cleared a wider field. Gender and the Internet is engaging a broader audience and becoming a more mature area of research, both richer in context and more firmly rooted in theory.

Keywords: Inequality/inequalities, Gender equality, Information technology, Communication, Cyberspace

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Introduction

In the 1990s, concerns over the digital divide prompted researchers to identify and to monitor gaps in Internet access and usage. Unequal access to the Internet, it was presumed, would lead to widening socioeconomic inequalities across the lifecycle, and in society at large. As our lives become more integrated with and more dependent on information and communication technologies, it is vital that all citizens have access to these technologies to ensure that everyone has a chance at upward social mobility.

It is against this backdrop that we authored several articles that examined the divide in Internet access and usage in the early 2000s. We focused on gender in particular because, at the time, there was widespread concern that women may not have been gaining equal access to computers and the Internet. We set out to investigate the persistence of gender differences, if any, in several countries and across different time periods.

Among our studies, the paper "Gender and the Internet" (Ono and Zavodny 2003) in particular received a fair amount of attention, perhaps because of its simple punchline: The gender gap in Internet use, with women less likely to use the Internet at all compared with men, had disappeared by the early 2000s in the U.S. It was a somewhat promising finding that appeased the concerns of technology pessimists who feared that women were at risk of becoming marginalized users. We also discovered, however, that

men were more likely to use the Internet with greater frequency and across a wider range of activities. We concluded the paper by suggesting that future research on the gender divide may want to move beyond the binary distinction of access and use and explore further specific uses of the Internet.

Three trends in the literature

Since our publication, there has been a renewed interest in studying gender differences in online activities. The new wave of studies are more deeply grounded in theory and use more sophisticated methods, thanks largely to better data collection and survey instruments. Scholars across a wide range of disciplines – psychology, economics, sociology, political science, and health science to name a few – are now discovering important patterns and theorizing why men and women behave differently online. We highlight here three main streams of research related to gender and the Internet.

First, the gender gap in access and use appears to be disappearing, but gender gaps remain with respect to the so-called second (or second-level) digital divide (Attewell 2001), i.e. differences in the range of activities that people perform online. This general pattern has been observed not only in the U.S. but also across other developed countries, e.g. Canada (Haight et al 2014), Israel

(Mesch and Talmud 2011), and the UK (Livingstone and Helsper 2007), and to a lesser extent in developing countries (Zainuden et al 2010).

Compared with men, women have lower frequency of use on average (Haight et al 2014; Wasserman and Richmond-Abbott 2005); lower intensity of use, as measured by number of hours online, etc. (Hargittai 2010); a narrower range of online activities (Joiner et al 2012); and a lower likelihood of accessing negative content, such as pornography and violence (Park 2009). Among children, girls are less likely to become addicted to the Internet than boys are, in the case of South Korea (Yoo et al 2004).

Second, as an extension to the research on the second digital divide, studies have revealed that our behavior online is an extension of broader social roles, interests, and expectations in the offline world (Colley and Maltby 2008). If the first research question is *how* do men and women use the Internet differently, then the second research question is *why*?

For example, in their pursuit to verify the stereotype of the talkative female figure, Brajer and Gill (2010) ask, "Do women really talk more than men?" They turn this stylized question into an empirical investigation by conducting an email experiment and find that women use more words than men do to communicate, especially if they are corresponding with other women. In general, their study and others (Colley and Maltby 2008; Cotten and Jelenewicz 2006; Haight et al 2014) reveal that women are more likely to

use the Internet for communication and social support, such as email and social networking sites.

Research has also shown that women are more likely to underestimate their online skills and abilities compared to men. Such attitudinal differences may reflect a deeper societal gender divide, where women feel less secure and less confident in their abilities, as brought to light by the bestselling book *Lean In* (Sandberg and Scovell 2013). A notable example of such study was conducted by Hargittai and Shafer (2006), who uncovered the discrepancy between actual skills and self-assessed skills. The study participants first answered a questionnaire about their self-assessed online skills. They were then asked to perform a number of tasks, e.g. navigate online content, locate information, etc., to assess their true online skills. The researchers find that men and women did not significantly differ in their actual online skills. However, women's self-assessed skills were significantly lower than men's.

A similar result was also reported among participants who were being treated for cardiac rehabilitation in an Australian hospital (Neubeck et al 2011). Participants were asked about their confidence in using online functions such as navigating sites and completing forms. Women's self-reported confidence levels were significantly lower in all categories. As pointed out by Hargittai and Shafer (2006), such perception gaps may

handicap women relative to men with regard to access to online content. Differential access to information can be crucial, especially in health-related areas.

Deficiencies in online skills and literacy, even if they are self-perceived, are alarming because they can have real consequences for online behavior. One area of concern is that women tend to be adopters and users of IT rather than developers and designers (Fountain 2000). In 2012, women occupied 24 percent of chief information officer (CIO) positions at Fortune 100 companies, and were less likely to be enrolled in IT related areas at the university level (National Council for Women & Information Technology 2014). In a close-up study, Hargittai and Shaw (2015) examine why Wikipedia contributions have been dominated by (white) males. They discover that the probability of contributing to Wikipedia can be predicted by gender, Internet skills, and interaction of those two variables. Contributors have higher (self-reported) Internet skills, and women report lower Internet skills than do men. However, women are less likely to contribute, *even among the high-skilled Internet users*, i.e. even after controlling for skill level. The researchers explain that the lower contribution rate among women may be an outcome of less confidence or possibly of less encouragement (to tinker with technologies, etc.) that women may have experienced when growing up. Whatever the reason, their research

points to the possibility that deficiency in Internet skills, actual or perceived, may reproduce social inequalities.

There are, however, indications that gender stereotyping in online activities may also be diminishing, in line with the growing number of female users online. In a study of role playing in multi-user domains, Robinson (2007) explains that the user population was traditionally dominated by white male gamers. In the early years, the gender identity of multi-user domain users was exaggerated to resemble "the types of physical bodies idealized in the offline world" (p.99). Characters that were created in this virtual environment were typecast into rigid gender stereotypes: "Male characters accentuate(d) aggressiveness, while female characters acquire(d) passive and diffident demeanors" (p.99). However, as the number of male and female users reached parity, the stereotyping of gender identities became less pronounced.

And third, gaps in information technology usage reflect, and sometimes enhance, pre-existing social and economic inequalities. Ono and Zavodny (2007) illustrate the mirroring of digital inequality and gender inequality in an international context. They show that the gender gap in information technology use is larger in countries that have greater existing gender inequality at the society level, e.g. Japan and South Korea, compared with countries that are more gender equal, e.g. Sweden. Social and economic inequality therefore carries over to

information technology usage. Pre-existing measures of inequality with regards to socio-economic status and demographics may thus be reasonable predictors of inequality in information technology usage. This mirroring effect between existing social inequality and digital inequality has been confirmed in a number of domains beyond gender, for example immigration status (Haight et al 2014; Ono and Zavodny 2008), ethnicity (Mesch and Talmud 2011), and parental background (Hargittai 2010).

More importantly, digital inequality may perpetuate inequality at the societal level. This was our primary concern when we launched our investigation of the digital divide. In the information age, having access to information technology is a prerequisite for socioeconomic advancement.

Although equal access may have been accomplished in the developed world, it still remains elusive in the developing world. Hilbert (2011) examines data from 12 Latin American and 13 African countries and shows that women are significantly less likely to access and to use information and communication technologies. He surmises that the disadvantage is due largely to women's unfavorable conditions in employment, education and health services in the developing countries. Their lack of access to information and communication technologies in turn deprives them of opportunities for advancement, thereby perpetuating a negative cycle of gender inequality.

Summary and Conclusion

Earlier studies on gender and the Internet, including our own, were rather descriptive in nature because the overarching purpose was to identify and to monitor the gaps. The emerging trend in the literature, though, is more reflective and nuanced. The topic has become more interdisciplinary, moving beyond communications and social sciences, and reaching into medicine, health sciences, among others. Owing to more extensive data collection and more precise survey instruments, researchers are applying advanced research methods with convincing results. The empirical evidence is more international, encompassing developing countries in addition to industrialized economies.

These advances have cleared a wider field. Gender and the Internet is engaging a broader audience and becoming a more mature area of research, both richer in context and more firmly rooted in theory.

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