"I Am Not Sure How Much It Will Be Helpful for Me": Factors for Digital Inclusion among Middle-Class Women in India

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ABSTRACT

The ability of the individual to participate fully in society is increasingly tied to the ability to access and to use digital technologies in a meaningful way for social, political, and economic participation, making digital inclusion a key component of modern social justice. This article explores digital inclusion issues beyond physical access to digital information technology. The research is based on a series of in-depth interviews with women in Kerala, India, who have had access to digital information technologies for at least 5 years. The collected data were analyzed for evidence of factors beyond physical access to technology and basic literacy skills that affect information and communication technology access and use.

The concept of social justice centers on the idea that everyone has an equal right to fulfill their potential in society (Rawls 1971). More and more, the ability of the individual to participate fully in society is tied to the ability to access and to use digital technologies in a meaningful way. Hence digital inclusion—or social, economic, and political inclusion through use of digital technologies—becomes a key component of modern social justice (Thompson et al. 2014). As has been established in literature and policy, digital inclusion is more complex than access to devices and strong Internet connections—it is about fair opportunity. Countries have made great strides in providing infrastructures for physical access to digital technologies needed for information access and use; however, it has been shown that simple physical access to digital technology does not automatically produce a state of digital inclusion (e.g., Warschauer 2003). Factors, such as training in digital literacies and technology skills, as well as social and cultural assumptions about age, gender, and so forth,

greatly impact access to and use of digital technologies once physical access is available (Burnett, Jaeger, and Thompson 2008; Jaeger and Burnett 2011; Thompson et al. 2014).

Although literature about gender and information and communication technology (ICT) access and use is extensive, much of the research is keenly focused on technology solely in terms of development, public access to computers and the Internet, or economic advancement. New conversations are emerging as we seek to gain a clear understanding of the specific needs of different user groups, including women, children, and other disadvantaged groups (e.g., Savolainen 1995; Fisher, Durrance, and Hinton 2004; Livingstone and Helsper 2007; Hargittai 2010). For this study, we aimed to explore factors beyond basic lack of physical access that influence personal attitudes toward ownership and regular use of smartphones, tablets, and laptops. When a middle-class, well-educated woman has technology at her fingertips, what are factors that encourage or discourage use in her everyday life?

The World Summit on the Information Society in Geneva in 2003 noted the importance of promoting gender equality in ICT access and use: "We are committed to ensuring that the Information Society enables women's empowerment and their full participation on the basis of equality in all spheres of society and in all decision-making processes. To this end, we should mainstream a gender equality perspective and use ICTs as a tool to that end" (par. 12). In light of this statement, understanding factors that affect ICT adoption and use for women is important for societies the world over. And though the factors identified may apply to men, children, and other users as well as women, we do not see this as a shortcoming of this study but rather as a benefit to the understanding of ICT use in general. We do not suggest that digital inclusion need be a mandatory requirement for social inclusion. Studies such as Selwyn's (2006) "Digital Division or Digital Decision?" identify a range of reasons individuals choose to use ICTs rarely or not at all, such as lack of interest, lack of time, and lack of need. However, with worldwide increases in digital governance, online health information, online education opportunities, online commerce, and online social networks, the need for digital access for full social, economic, and political involvement increases, and with it the need to understand factors affecting that access and use.

In order to explore issues of access and use that extend beyond poverty and lack of education but also look beyond "WEIRD" (Western, educated, industrialized, rich, and democratic) nations (Henrich, Heine, and Norenzayan 2010), we have chosen to investigate factors affecting digital inclusion among middle- and upper-middle-class, well-educated women in Kerala, an Indian province known for its high literacy rate and a high status of women in terms of education and professional positions (Government of Kerala 2011, 2015). The global middle classes are growing "twice as fast as the overall world population" (World Bank 2007, 75), and India and China are the two countries in which this growth is most evident (Kharas and Gertz 2010). In addition, India is the country with the third-highest number of Internet

users—after the United States and China—worldwide (Telecom Regulatory Authority of India 2013), making this a population that merits study.

Access to the Internet in India is vastly skewed toward wireless access, with a reported 88.97% of India's Internet users accessing the Internet with mobile devices (Telecom Regulatory Authority of India 2013) and 59% of users accessing the Internet only via mobile devices (Bughin and Manyika 2012). Smartphones and feature phones (low-end smartphones with limited features) are helping to overcome some of the physical barriers to digital inclusion in India, as a smartphone or feature phone has a lower initial purchase cost than a laptop or desktop computer, and publicly available wireless access to the Internet in hotels, restaurants, airports, shops, and railway stations (Government of India Ministry of Communications and IT 2009) or low-cost pay-per-minute services brings mobile access to the Internet within reach. Notwithstanding the increase in wireless and wireline connectivity in India, still only 15.1% of the populace is accessing the Internet (International Telecommunication Union 2013), and only one-quarter of this subgroup is female (Intel 2013).

Cultural norms play a significant role in ICT adoption by Indian women (Paul 2015). A recent report by Intel (2013) entitled "Women and the Web" reports that "one in five women in India . . . believe the Internet is 'not appropriate' for them. . . . These women believe engaging online would not be useful for them, and if they did, their families would disapprove" (12). Intel's study also indicates that, although women with very recent access to the Internet tend to use it for recreational purposes such as gaming, music listening, and movie downloads, "women with more than five years of online experience are twice as likely to seek out information on financial services and banking, or related to their source of income, than women who have joined the Internet within the last year. They are also 50 percent more likely to buy things online" (13). Based on this finding, we selected participants who had at least 5 years' experience using ICTs and the Internet.

Although there are few agreed-upon definitions of "middle class" in India, in India someone from the middle class will "typically own a television, a refrigerator, a mobile phone and perhaps even a scooter or a car. Although their budgets are stretched, they scrimp and save for their children's education and their own retirement"; the upper middle class in India "tend to be senior government officials, managers of large businesses, professionals and rich farmers. They are highly brand-conscious, buying the latest foreign-made cars and electronic gadgets. They are likely to have air conditioning, and can indulge in an annual vacation, usually somewhere in India" (Farrell and Beinhocker 2007). When questioned about their socioeconomic class, each of the participants in this study self-identified as either middle or upper middle class, and the descriptions they gave of their lifestyles, number of cars owned, and professional lives as well as the professional lives of their husbands (all of the participants were married) supported their claims in light of Diana Farrell and Eric Beinhocker's definition.

Little is known about digital inclusion among this demographic, although it is a demographic that is rapidly increasing in number in India (Meyer and Birdsall 2012). In addition, this study of eight women who are not economically marginalized and who have high levels of English proficiency and high levels of formal education and professional attainment attempts to examine nuances of digital inclusion beyond limitations to inclusion or access that rely squarely on economic power and basic literacy or English-language skills.

Methodology

Exploratory research is a way to provide insights into a problem or situation that is not clearly defined as yet, allowing the researcher to familiarize herself with the situation and perhaps generate research questions or hypotheses based on these explorations. As the purpose of this study is to explore factors affecting digital inclusion within the purviews of daily life, semistructured interviewing was used to allow "descriptions of the life world of the subject with respect to interpretation of their meaning" (Kvale 1996, 124). The semistructured interview format also allows the interviewers to discuss the topics in sequence while still providing openness to the discussion wherein the participants can tell personal stories "about their experiences, feelings, and hopes and the world they live in" (Kvale 1996, 5).

The initial interview with each participant was conducted face-to-face and lasted approximately 1 hour. Any follow-up discussions to elaborate on topics that required more data were conducted by telephone except with one participant who has a hearing impairment and prefers not to communicate by phone; any additional discussion with her was face-to-face or via text. All interviews were audio-recorded and transcribed for analysis. Nvivo 10 was used for extensively coding the data and identifying emergent themes.

The participants in this study were recruited using word of mouth and snowball sampling; that is, each participant was asked after the interview if she could recommend another woman from her social class who might be willing to be interviewed for this study. Her recommendation led us to the next participant, and so forth. Pseudonyms are used here for each of the participants. The findings of this study are intended to add to the discussion of what factors beyond physical access to technology might affect digital inclusion.

Participants

The participants in this study have each had strong educational and employment opportunities, earning university degrees and finding gainful employment outside the home (see table 1). Their careers include entrepreneur, information technology specialist, medical doctor, dentist, and journalist. Each of the participants occupies multiple roles as a professional, mother, sister, daughter, daughter-in-law, sister, sister-in-law, and so forth. Each woman interviewed lives in a nuclear or extended family setting with her husband and at least one child, and some households include additional extended family and/or serving personnel in

Table 1. Participants and Participant Attributes

Participant	Age	Profession/Industry	Years of Experience with ICT	ICT Ownership
Anu (P1)	32	Entrepreneur/hotel	17	iPod, smartphone, tablet, desktop
Beena (P2)	35	Anesthetist and faculty/medicine	13	iPod, smartphone, desktop, laptop
Charu (P3)	34	Dentist and entrepreneur/medicine	8	Smartphone, desktop, laptop
Diya (P4)	35	Bookseller and radio-announcer/ media and publishing	5	Feature phone, desktop
Ela (P5)	33	IT professional/education	14	Smartphone, laptop
Farha (P6)	43	IT professional/telecommunications	20+	Smartphone, tablet, desktop, laptop
Gayatri (P7)	45	Pediatrician/medicine	13	Smartphone, tablet, laptop
Hiya (P8)	47	Ophthalmologist/medicine	8	Smartphone, desktop

the home. Each participant personally owns and uses digital technologies both at home and in the workplace, albeit with differing degrees of interest and skill. All have used the most modern of personal-use information technologies for at least 5 years, with use ranging from 5 to 20+ years.

Findings and Discussion

Each of the women interviewed has physical access to very up-to-date ICTs and has Internet access. In fact, several of the participants mentioned that they own functioning computers and other devices at home that they no longer use because of their preference for another device. Some of the participants mentioned that they occasionally face technical issues with maintaining constant Internet access; however, these were due to infrastructural shortcomings such as Internet service provider failures in service, temporary lapses in online access due to broken technology undergoing repair, or a recent change in phone or other device that slowed down use because of the need to reconnect or download apps and other materials in order to use the new technology to full advantage—access problems that could occur in any technology environment worldwide.

The participants ranged across a spectrum of use. For example, Anu, an entrepreneur, indicated a preference for using multiple tools for different digital needs throughout her day, including a smartphone to communicate and check e-mail; a tablet for online browsing, shopping, and work-related information searches; and an iPod to store and listen to her music. She said she is online at least 8 hours a day, and she seldom uses her personal computer anymore except for printing. She notes that she has even found a phone app for scanning.

At the other end of the spectrum of use, Diya, a journalist/book-shop employee, said she feels she can get through her daily life without online information or technology, although she does find her mobile phone or desktop computer convenient for locating some information for her work or everyday information needs. She said her first choice for information seeking is her desktop computer; her mobile phone is second choice, then magazines or friends and other resources. So even though she does not think of herself as someone who needs technology much, she does use it regularly. Some of the factors affecting ICT access and use are discussed further.

Digital Literacy Factors

The participants expressed a range of self-perceptions about their own expertise that indicates that their interest in and adoption of new technologies were influenced by their understanding of the usefulness of information technology and their own levels of digital literacy. And although all the participants have access to a range of information technology, they showed preference for one tool over another based on their comfort with use. For example, Charu, a dentist, talked about how she uses her desktop computer for online searches related to work, for chatting with her sister and parents via Skype, and to check e-mail, but when asked to rate her expertise with digital technology on a scale of 1 to 10, she rated herself as "just pass . . . 5 or 6." When asked how her life might be without her smartphone, she responded, "I don't know much about [my smartphone], and I am not sure how much it will be helpful for me, that's a fact . . . [and] for the same reason I don't think I'll be in trouble if anything like that is not there." So although she regularly uses ICTs and is comfortable with the software and device she uses frequently, adapting to a new device appears to make her feel that her digital literacy skills are not high.

Hiya, an ophthalmologist, also does not feel very digitally literate. She said she uses her smartphone to access WhatsApp regularly throughout the day to keep in touch with friends, but "So far I haven't felt like I need to use the Net." She mentioned a number of times that she is not good with ICT use. Some of her comments included: "I am not at all technology savvy, I am not at all"; "I am not Net savvy. I wouldn't know how to go into this [the Internet] and order a book"; and "He [her 20-year-old son] has to come down and help me." She reasons that this may be because of her age: "Because [computers] came into our lives so late, [the Internet] came into our life so late, but [the new generation] have been like, even when they were teenagers, all this was there in their lives, so they have been more addicted to it than us, obviously." Hiya uses ICT constantly via her smartphone, and she is able to use computers in a pinch to access travel information or to help her 15-year-old daughter with schoolwork, but she feels she is not digitally literate overall, and so she has built a social network of savvy technology users that allows her to remain quite comfortable with her nonuse.

Having a support system seemed to enable participant disuse of technology. Another example of this was Farha, an information technology professional who said she likes to delegate online searches to her husband because she believes he does a better job than she in online information gathering. She recalls instances where she was able to only scratch the surface of information, whereas her husband was able to delve into more details and also did more follow-up work.

In contrast, Ela, another information technology professional, expressed that she is very happy to use ICT, as it helps her avoid long queues, plan and book tickets and hotel accommodation for ease in travel, and so forth, and her knowledge allows her to provide help to family, friends, and other community members who frequently ask her for help in their ICT use and management. She rates herself high in digital literacy—an 8 or 9 out of 10—and her confidence with ICT and her belief in her own digital literacy may influence her interest in and frequent use of technology. And so, as might be expected, we observed a range of digital literacy skills tempered by self-identification and social behaviors.

Everyday-Life Factors

As each participant has had access to and used ICTs for at least 5 years, it is not surprising that these devices have become a part of what can be referred to as a "way of life," or everyday-life information seeking (Savolainen 1995, 261). Each participant noted that she feels motivated to use ICT in her daily life. For some, the motivation was based on professional duties or their roles as a mother, wife, and member of the family or community. The women noted their use of ICTs to meet their own work-related needs or help colleagues with similar needs, help their busy husbands check e-mail, help their children with schoolwork, support the local community or friends and extended family with e-commerce activities, or to keep in touch with family and friends.

The women spoke of their personal motivations for using ICT as including leisure activities and hobbies, online shopping, searching for reviews, reading news on different topics of interest, finding contacts, making reservations, using navigation applications (GPS), and photography. They use ICT for everyday needs such as finding recipes, doing online banking, and to seek health information. They noted use of apps such as WhatsApp, YouTube, Facebook, TripAdvisor, and other social media apps and review sites. Charu, who expressly noted that she did not engage in e-commerce transactions herself, still acknowledged the time-saving role of online information contained on e-commerce sites when she said, "Even for small things like, you know, a furniture set or dining set . . . [before using technology] we knew some specific shops in our town and [used to] go there [to buy] things . . . now we know [that] there is a variety [of options]. Before buying we'll just go and search whatever varieties there are [online] to get an idea, that's it, not for buying it, but just to get an idea

about what-all things we are going to buy and if we have time we go and search [in the stores]." Ela said, "If I want to buy something, even household things . . . I'll search on the Net whether it is useful, other people's comments, what will happen, what is the best, what is the cheaper price, the better one, and all. I am searching [for information about it online] before buying it, even a school bag, I am searching [for information about it online]."

Each of the participants mentioned gaming and other online entertainment (e.g., Paint, streaming films) as some of their earliest use of ICT. For some, this occurred when they were children and had their first exposure to pre-Internet personal computers. In fact, although all the participants had postgraduate levels of formal education, for the most part their digital literacy had been learned not in formal education milieus but rather through their own experience with advancing technologies over the past 5 or more years. Gayatri said she "didn't need it till now" and so felt that "maybe next year onwards when I'm forced to [for helping daughter in her studies], I'll start using it more [for work as well]." The participants gained ICT experience through playing games; searching for information about hobbies, personal needs, and entertainment; helping their children with school assignments; asking questions of more experienced colleagues; troubleshooting their own gadgets; and helping their husbands, other family members, and friends navigate new sites and apps as well as helping them meet their information needs.

Professional-Use Factors

The women who use ICT frequently in their professional lives were more confident in their digital literacy skills than are those who use ICT less in their employment. Anu (entrepreneur), Ela, and Farha (both information technology professionals) have careers that require frequent use of ICT in their work lives, and each of these women expressed high levels of confidence and ability. Beena, Gayatri, and Hiya, all medical doctors, use ICT in their professional work, but with less frequency and less interest than Anu, Ela, and Farha. When using technology for work-related information, Beena, Gayatri, and Hiya said they used authoritative databases and particular apps and sites that are known in their profession, such as apps for determining dosage of medicines. They said they also sometimes use Google to lead them to more authoritative resources with information about particular syndromes or diseases.

Beena was the medical doctor most comfortable with digital apps, online databases, and other Internet resources for work-related information needs, either for her own work or to help colleagues. She is an anesthesiologist who is also employed as an assistant professor. She uses the Internet in her work with students and said that although she feels ICT is an important part of her life and work and is her first port of call when serving her own information needs, she does not feel she is influencing her students in ICT use in any way, because, she said, "I'm not that tech savvy compared to them."

Gayatri (pediatrician) and Hiya (ophthalmologist) use ICT with less frequency and less interest than Beena. Charu (dentist) and Diya (journalist) both said they were moderate users of digital technology in their workplaces and both expressed that their use of the Internet outside work was mainly limited to basic information searches and social media and entertainment. In the case of our eight participants, the more ICT was used in professional work, whether voluntarily or by demand, the more comfortable and expert the women seemed to feel.

Social-Networking Factors

All of the women interviewed spoke of social connections that influence their acceptance of and use of ICT in their everyday lives in different ways. The social networks that the participants maintain through their technology use are relationships they have created with family members or as students, at work, or in other offline settings, not relationships begun online.

The women spoke about their use of ICT and tools such as Skype, Facebook, and WhatsApp as well as phone, text, and e-mail to keep in touch with family members, friends, colleagues, and employees. For example, Diya and Hiya both said they do not think of themselves as strong or savvy users of ICT; however, both spoke of frequent use of the Internet and digital technology to keep in touch with family members and friends. Hiya said that she feels "lost" without her mobile phone, which she said she carries with her wherever she goes, even when she is not using it. She said, "I think maybe I am missing a phone call. Phone calls are the most important thing in my phone. All my friends call me only on my mobile, and I also call them on their mobile, so I feel I would have missed a phone call or I would have missed a message or something like that." Staying in touch with her social network encourages her use of ICT more than any other factor.

Interestingly, Diya and Hiya also noted that their social circles, made up of friends and family who use ICT quite a lot, have not influenced them to use digital technology, but, as noted in the earlier section about digital literacy, rather they feel that they are able to rely on these social networks to allow themselves to reduce their own interaction with ICT. This phenomenon of relying on social networks to allow one to avoid ICT was mentioned by three of the women interviewed. Hiya relies on office staff, her husband, her son, and friends to help her find information and to help her learn how to use newly acquired technology such as her smartphone. Charu and Diya said their biggest barrier to ICT use is that they are always forgetting passwords, so Charu relies heavily on her husband or father and Diya relies on close friends to navigate e-commerce and banking sites for her. She said, "It makes a lot of difference . . . if I want a train ticket, sometimes I can just say to my friend or I can use her password and I can do that, and for some, if I want some money I can say so to one of my friends and he transfers his money to, not to my account, sometimes to my friend's account, like that." At the same time, Diya said she does use the Internet often for informa-

tion related to travel and her work. Her social networks allow her to modify her ICT use to suit her own preference.

Other participants mentioned that they themselves are the ones who are relied upon by others as a sort of "help desk" for technology and information needs. Anu said her siblings often call her for tech support and suggestions for advice about new technology. She said, "You know just yesterday, in fact, my sister called up and asked [me for help] because she wants to buy an iPod for my brother."

Ela said that over the years she has been the one in her own social network encouraging her family members and others in her community to purchase computers and use them for everyday information needs. She said, "My sisters were not using the Internet and all, and I only told them the importance of using it and how it will benefit in their life and all. So that, from my inspiration only, they bought new computers and they started studying it." She noted that her two sisters—one a lawyer and the other a schoolteacher—did not see the usefulness of ICT when she encouraged them to purchase their own computers some years ago, but now they are very grateful they did as she suggested, as not long after they bought their own computers, their workplaces began using computers, and having a computer at home apparently added some benefit to the sisters in their professional work. Ela also exhorted a neighbor to buy a computer for her school-aged children.

Thus, among the eight participants interviewed, it was clear that some of the women were reliant on others for ICT support and instruction, and others were relied upon. Social-network apps and tools seem to be a key factor in encouraging the participants to engage in ICT use, enabling the women to keep in touch with family and friends and so forth; however, social networks also were used to help some avoid technology. This practice of social reliance on others to help us meet information and other needs (e.g., gatekeepers, opinion leaders, secretaries, librarians) has long been observed (e.g., Chatman 1987; Metoyer-Duran 1993) and is arguably one of the main reasons we have social relationships—to lighten our load and share the responsibilities of daily life with others (e.g., Sumner 1906).

Time Factors

The participant who expressed the highest interest in and confidence with using technology was the same woman who said she had plenty of time for it. Anu, who works part time in the family business, does much of her work online, and has extended family living in the same household as well as domestic help, said she has "a lot of time" and is always online, checking e-mail, looking for new apps, and planning her days. She indicated that she feels her investment of time online is useful, as she gains skills that ultimately benefit the business. Although other participants were clear in their belief that technology was very helpful, they all seemed to fit in ICT use through work or home duties and did not feel they had time for

much leisure use of technology. Even Gayatri and Hiya, who indicated they have more leisure time than others, said they preferred to use that time with their children, and so, again reflecting what was noted in the earlier section on everyday-life factors, their leisure ICT use was in pursuit of child-related information needs.

Privacy and Security Factors

The most frequently mentioned negative influences on online engagement were privacy and security issues and fears of the Internet negatively influencing the participants' lives or the lives of their children or society. They were concerned about encountering strangers online, gaming addictions, obscene material that their children might accidentally access, the impact of online engagement on general public reading abilities and physical activity, and the dehumanization of relationships and communication based on overuse of ICT. As noted previously, all of the women indicated that they do not talk to strangers online or use the Internet to create social networks, only to maintain the social networks they have already established at home, school, work, and in the community.

Interestingly, though some of the participants said they are very happy with the level of access and the use they have for ICT, more than one participant mentioned aversion to the encroaching technology. Although all participants acknowledged that more information is available with the new technologies and that there are many positive effects for research, study, business, education, communication, and so forth, one woman in particular expressed nostalgia for the simplicity of life before she had to use ICT daily. "We had such a lot of fun when there were no phones; actually parents would never find out where we were at that moment" (Hiya).

Conclusion

The purpose of this article has been to identify factors, beyond basic economic and literacy issues, that affect digital inclusion in terms of access to and use of digital ICT. The participants interviewed have all the physical access to ICT they feel they need as well as the related basic literacy skills. They own personal smartphones, feature phones, laptops, desktops, tablets, and other devices. They have no major or chronic issues with Internet connectivity; accessing the technology and the Internet itself was not mentioned as a problem.

As the participants discussed their use of digital technology in their everyday lives, they highlighted an array of factors that shaped their interest in and use of the technology (see fig. 1). These factors included their own feelings of digital literacy, social networks that required online communication to keep in touch, and the time and motivation to use the technology for leisure, entertainment, and to meet professional and everyday needs. In some cases participants had created a network of people who could access ICT for them, allowing
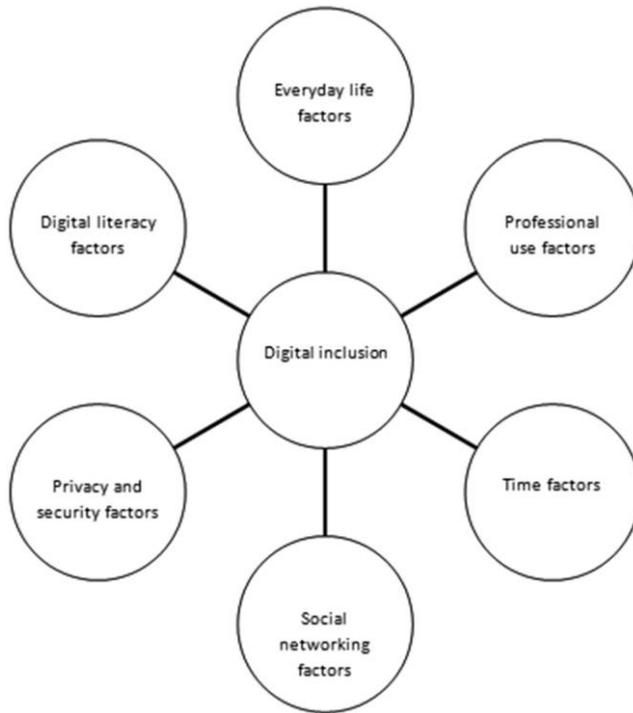
Figure 1. Factors affecting digital inclusion

them to selectively use the tools they desired and avoid others. Factors such as lack of time, lack of ability, and lack of need were mentioned as reasons for nonuse. Concerns about privacy, security, and potential social issues caused by overuse of technology were also mentioned as reasons for nonuse or for cautious attitudes toward e-commerce or allowing their small children to use online technology unsupervised. Hence, digital inclusion, an increasingly important component of social justice, has internal and external factors that can enhance or hamper it.

Possible implications of these findings include further research to understand factors that may affect women in the information age and to design services and programs as well as run campaigns that support digital inclusion. Governments and public enterprises have a role to play in drawing a picture of how women can benefit from the use of ICT. Some of the reservations toward ICT need to be handled at a policy level by encouraging ethical use of ICT and having laws in place to prevent ICT misuse. Ethical discourse on that topic is already occurring. The image of woman is undergoing a transition that can be further enhanced by social encouragement of digital literacy that clarifies the role of ICT in the women's lives for easier acceptance.

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