(Author's final draft) *Recommended citation*: Stark, Laura (2020). Gender, Empowerment, and Mobile Phones in the Developing World. In Ling, Rich; Fortunati, Leopoldina; Goggin, Gerard; Lim, Sun Sun; Li, Yuling (Eds.) The Oxford Handbook of Mobile Communication and Society. New York: Oxford University Press, 529–544.

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Gender, empowerment and mobile phones in the developing world

Introduction

A decade ago, gender and mobile communication for development (M4D) were barely mentioned in the same context. Even when acknowledged, "gender" tended to be just one in a long list of factors that impact the uses and effects of mobile telephony, including age, class, education, household structure, employment, and ethnicity. Only within the last decade have researchers produced a significant body of research on what "gender" really means for mobile phone use. In this chapter, I survey literature from the past decade to ask: *does mobile telephony empower women in so-called developing countries? If so, how and if not, why not?*

The research surveyed here was located through detailed searches through the archived content of mobile-research related and ICT and gender-related online international journals as well as book compilations. Because there is now a body of literature on the mobile communication of more economically and educationally privileged persons in developing countries, I limit my discussion to those who are relatively disempowered, that is, those who perceive themselves to have few options for improving their situation (Kabeer, 2005). In this chapter I use the terms mobile telephony, mobile communication and mobile technology interchangeably, although they have distinct meanings in different fields of research.

The aim of this chapter is to indicate thematic trends that may be useful for future research, seeking to be analytical rather than merely descriptive, and focusing on how gender and M4D researchers can build stronger explanatory or predictive theory (Castells et. al., 2007:4). The nature of mobile communication itself creates unique challenges for the field to accumulate comparable empirical data from around the globe as a basis for theory building, given the speed with which the situation on the ground is continually changing. For example, the interest in ICT and public phone kiosks that were the focus of much research pre-2010 has shifted to the promise of smartphone-mediated Internet, creating a new set of issues and parameters that must be taken into account in models of explanation.

When specific studies are cited within this review, the number of study participants and methods used are given after the first citation. However in general, forward evolution of the field is hampered by insufficient data disaggregation by gender, age, educational status, socio-economic status, and culture. When examining mobile communication technological uptake by women and men, it is of the utmost importance to specify *which* women and *which* men. Higher-income persons with more education in developing countries lead lives that may be unrecognizable to the poorest in the same society.

Mobile telephony for women: benefits and barriers

It is by now axiomatic that women use mobile phones to keep in touch with relatives and friends, and to run businesses more effectively. For some, mobile telephony *is* the business, as in the case of mobile payphones (Kyomuhendo, 2009). There is considerable use of mobile phones among female market traders in Sub-Saharan Africa: to spread their contact information through customers and friends, to inform customers about the availability of products or the arrival of new products, to agree on meeting places with customers in large market areas, to receive payment by distant customers through mobile money, and to

participate in rotating savings and credit associations (Tawah, 2013; Svensson & Wamala Larsson, 2016). In India, mobile phone enabled delivery mechanisms for agricultural information has been well received by female farmers, reducing information asymmetry with regard to male farmers (Balasubramanian et. al., 2010; Mittal, 2016).

As Porter et. al. (2012/ N=2967, surveyed + N=unspecified, interviewed) point out, maintaining contacts with family and friends does not mean that calls, beeping or text messages sent to relatives and friends are merely social chitchat or keeping up with news. In Sub-Saharan Africa, at least, livelihood and resource networks (money for schooling, medical care, housing, jobs in the city, and capital for starting businesses) are dependent on social, usually kinship relationships (see Donner, 2008). In societies where individuals are highly dependent on family and informal networks rather than official social institutions for their well-being and security, social relationships maintained via the mobile are crucial for well-being. These relationships require nurturing, and when key contacts are located at distances that are expensive and hazardous to travel in person, the mobile phone becomes the key enabler of social ties (Porter et. al., 2012). Resource networks maintained through mobile phones are especially important for women, given their relative lack of mobility and lack of access to services in many societies.

For women in India, mobiles are tools for increasing their sense of security when moving away from home for work or study, by being able to contact families to help if necessary (Jouhki, 2013; Tenhunen, 2014b:166). In rural Kenya, mobile phones help families coordinate their activities when they are spread across the farm, the wife's natal family, children's boarding schools and men's work in the towns and cities (Murphy & Priebe, 2011/ N=848 households survey + N=16 in-depth interviews). Women in both India and East Africa who have married into patrilocal marriage arrangements use phone calls to stay in close touch with birth relatives (Murphy & Priebe, 2011; Tenhunen, 2014a, 2014b).

Tenhunen (2014a, 2014b/N=251 interviewed + N=216 surveyed) notes that whereas a decade ago new brides were not allowed contact with their birth families, the phone is now regularly used for this purpose. Through mobile communication, the bride's parents and siblings find out immediately if she is facing hunger or mistreatment in her husband's home. For migrant mothers communicating with families in the Philippines and in rural South Africa, where many children live with grandparents while parents work in distant cities, mobile phones are a communication tool for "stretched households" (Madinou & Miller, 2011; Porter et. al., 2012:14).

New mobile technologies can open up new forms of democratic participation (Huws, 2008: 47; Tenhunen, 2014). Mobiles have enabled rural residents in Tanzania, especially women, to initiate interactive dialogues and to set the agenda of public debates by participating in public service broadcasts. These are particularly effective in discussions of domestic violence and abuse of women's rights in rural areas (Millanga, 2014:291/N=13 in-depth interviews + N=45 focal group interviews). In Kenya, phones have helped rural women run local, voluntary support groups (Murphy & Priebe, 2011).

An important trend in recent research on gender and M4D is the recognition that beyond such measurable benefits as increased income, economic growth, and increased communication, it is important to consider the *subjective and intangible* benefits of mobile telephony for women. There has been a shift from the assumption that financial independence is the best – or even clearest – indicator of empowerment to a recognition that many women have other priorities. Women in rural Kenya emphasized that benefits of mobile telephony in their lives include freedom from hunger, drudgery, fear and danger (Murphy & Priebe, 2011). Indonesian midwives who used mobile phones to communicate with both doctors and patients expressed that their aim was not to increase their economic autonomy, nor did they feel the need to express their status through phone use or achieve power equal to male

doctors. Rather, they wished to feel more competent in handling difficult childbirths to gain satisfaction from serving their communities (Chib and Chen, 2011/ N=60, focal group discussions + 21 in-depth interviews). As a counter-balance to the Western-derived notion of an autonomous individual focused on self-realization, Doron (2012/ 423/ N=unspecified, semi-structured interviews and participant observation) proposes the concept of the "nodal person" to describe the importance of women's and men's positions and roles within networks of persons and objects imbued with agency (Miller, 2005), and the ways in which phones – as agents – facilitate women's roles as "nodes" in numerous gender-patterned networks. These networks can function beyond female mobile users' immediate social context, but they are shaped by cultural ideologies and expectations regarding familial obligations. Women can be disconnected from this nodality when denied access to mobile phones, and such nodality can change through their life cycle: it can disappear, shrink or expand as their familial status shifts (Doron, 2012).

The envisioned benefits of mobile technology can only reach marginalized persons in developing countries if they are not disadvantaged by gaps in access. Despite its benefits, mobile connectivity erases neither poverty nor unequal power relations (Murphy & Priebe, 2011). In the hands of female Cameroonian market traders, mobile phones are not tools for development or empowerment, but for "mere survival" (Tawah 2013/ N=43 interviewed and participant observation). Phones have provided market women with faster and more efficient ways to communicate and organise their trading activities, but they have not reduced the physical workload of having to travel to rural markets on unsafe roads – or the disadvantages of low education, lack of financial capital, and poor physical infrastructure in rural areas (Tawah, 2013). Mobile phones do not necessarily create new networks for resource flows, instead these flows appear to follow pre-existing social and economic patterns in which more educated or higher-class persons hold the majority of high-skilled, value-added jobs or have

access to more useful and lucrative contacts. Mobile telephony is thus being integrated with surprising ease into previous structures (Wallis, 2011; Murphy & Priebe, 2011; Doron, 2012).

Enthusiasm over M4D is rooted in an assumption that mobile phones can function as a "smart catalyst to development" because they are the most complex technological device in rural villages, and the only modern technology owned personally by those in poverty (Dodson et. al., 2013:79; Murphy & Priebe, 2011). Yet cost and affordability are still major challenges. There are still many – especially women – who cannot afford the cost of purchasing a mobile device, and in an increasingly connected world these persons are severely disadvantaged (Abraham, 2009; Wallis, 2011; Murphy & Priebe, 2011). The cost of airtime and calling is also a major barrier for both men and women in using mobile phones (Tenhunen, 2014a). For instance, the Filipina and Indonesian migrant women in Singapore studied by Chib et. al. (2014) spent approximately one-tenth of their salary on mobile phone bills to keep in touch with their families back home, and the cost of calls limits the quality of conversations between Filipino migrant mothers and their families (Cabanes & Acedera, 2012/ N=20, in-depth interviews). At the same time that mobile communication is expensive for the poor, telecom providers in developing countries are reaping large profits (Murphy & Priebe, 2011; Han 2012). Indeed in Sub-Saharan Africa, the main beneficiaries of widespread mobile communication appear to be network providers who provide services which are not targeted at the capabilities of the poor and make it difficult for them to unsubscribe from premium mobile services that automatically deduct airtime (Comfort & Dada, 2009; Wyche et. al., 2016).

Poor eyesight is a widespread barrier to mobile use in developing countries, one that has been little discussed despite the fact that good vision is vitally important in mobile phone use (Wyche et. al., 2016/ N=68 observations and groups interviews). Another obstacle is infrastructure gaps such as lack of reliable electricity or low network coverage, which

disproportionately affect girls and women, especially in rural settings (Comfort & Dada, 2009; Murphy & Priebe, 2011). Porter et. al.'s (2012) study of mobile phone usage among youth in three African countries indicates that where phone usage is low and the technology newly adopted, male users predominate, but as phone usage grows, girls begin to use mobile phones more than boys (Porter et. al., 2012:12). The explanation is that better reception in high-use areas enables women to use phones as part of their busy daily schedule, whereas in places where no network signal is locally available, girls' relative lack of free time and independent mobility put them at a disadvantage (Porter et. al., 2012:13).

The gendered division of labor in home and childcare responsibilities in many societies also create barriers to women's mobile usage in terms of finding the time to learn how to use a phone – especially for less educated women if the phone operates in an unfamiliar language. Even finding the time to join support groups or training sessions can be difficult for lower-income women (Chib & Chen, 2011). Numerous other learning-related barriers also face women with less education: lack of literacy in the language used on menus and interfaces, lack of visual interface literacy in interpreting icons and navigating hierarchical menus (which vary greatly from one handset model to another), and unfamiliarity with memorizing number sequences such as PINs (Dodson et. al., 2013; Wyche et. al., 2016).

There may be as many as 7000 languages spoken today, of which two-thirds do not have a written form; and there are roughly 500 million non-literate and low-literate women in the world (Dodson et. al., 2013). Unlike any other communication medium before it, the basic feature phone has supported strongly oral cultures with low literacy whose languages are not yet digitalized (Comfort & Dada, 2009). Yet users in complex linguistic environments face problems of learning and navigation of mobile devices that do not support the languages or scripts familiar to them. Since the English-language numerals used in Chinese-manufactured phones tend not to be the numerals familiar to users in many societies (such as Arabic-

speaking countries or South Asia), and since smartphones are more complex to use than the older feature phones, it is education levels *rather than gender per se* which are enabling phone use especially among the younger generation (Tenhunen, 2014a).

Phone-sharing can cause problems for especially female household members when children and men in the family – who have more time to explore the phone's functions – change device settings to suit their preferences, lock others out of the family mobile, or program the phone to a T9 predictive text for SMS settings, whose "runaway writing" can be problematic for inexperienced users (Dodson et. al., 2013:85 / N=40, in-depth interviews). The condition of mobile devices themselves are often a problem. Most of the phones used by the Moroccan Berber women studied by Dodson et. al. (2013) had broken and jammed keys, or cracked or cloudy screens. Low quality counterfeit phones were also sold at a higher price to non-literate buyers who were unable to distinguish the correct brand from fake ones, and fake or second-hand models "do not come with instructions or manuals" (Dodson et. al., 2013:84).

Given disparities in access, there are concerns that the benefits of new communication technologies may remain with socio-economically privileged groups in developing countries rather than spreading to more marginalized groups (Zainudeen et. al., 2010). Mobile telephony in India is expanding the social networks, activities, and technological literacy of men more rapidly than those of women, reinforcing patriarchal power relations and increasing informational disparities (Abraham, 2009; Jouhki, 2013).

Mobile telephony and social control

Mobile phones enable secrets to be kept and revealed in new ways, threatening the status quo. Mobile phones can also facilitate the formation of new contacts across household or class boundaries, and the maintenance of old contacts that give the user psychological strength in oppressive situations (Lin & Sun, 2010; Tenhunen, 2014b). Surveillance and even harassment

of female users by family members, intimate partners, or employers came up repeatedly in the literature as a means by which persons sought to control the new flow of information enabled by mobile communication or reduce the time that calls took from women's work and duties (Archambault, 2011; Wallis, 2011; Platt et. al., 2016; Lin & Sun, 2010; Tenhunen, 2014b).

This suggests that an important characteristic of patriarchal gender systems is the fear expressed by men and/or their natal families regarding married women's deception or neglect of their gender-specific domestic tasks. In Sub-Saharan Africa, where women have relatively more independence and autonomy in the public sphere than in South Asia, for instance, husbands and boyfriends still exercise considerable control over household decisions and activities (Svensson & Wamala Larsson, 2016/ N=150, survey + N=45, focal group discussions and participant observation). Men throughout Sub-Saharan Africa have been reported to feel threatened by the new freedoms afforded to women in mobile phone and internet use, and in many cases monitor their partners' mobile and internet use, check their call logs and contact lists, and even refuse to allow wives to own a personal mobile (Abraham, 2009; Kyomuhendo, 2009; Zainudeen et. al., 2010:551; Archambault, 2011; Stark, 2013; Svensson & Wamala Larsson, 2016).

In India, husbands can ban their wives from using the phone to call natal relatives, if they feel that she is abusing this privilege or that talking to her relatives by phone is creating social friction and discord in the marital home (Doron, 2012). The control exercised by husbands over women's access to mobiles is not always direct. Although Handapangoda's and Kumara's (2013/ N=30, mixed methods) study of mobile use among Sri Lankan housewives showed that mobile communication expanded their scope of activity beyond the household and increased their access to information, it also showed that women's use of the mobile was largely controlled by the husband due to his control of household finances.

It is not always male relatives who seek to control women's use of mobile phones. Mothers and mothers-in-law who occupy a relative position of power within many households in patriarchal cultures (Kandiyoti, 1998:147) also seek to control the communicative possibilities of younger women. Among the boatmen in northern India interviewed by Doron (2012), the mother-in-law of the household kept the phone tucked in her sari and supervised its use at all times. The phone use of Moroccan Berber women was monitored by both men and women in the household: men were worried that female relatives would be tempted to use their mobiles to interact with men outside of the family, and mothers monitored their daughters' incoming and outgoing calls – while simultaneously depending on daughters' help in using mobiles (Dodson et. al., 2013:82–83). In West Africa, girls were given limited access to phones by parents, who feared that they would make inappropriate calls to the opposite sex (Porter et. al., 2012).

In areas of India studied in the research covered here, brides with private mobiles and contact numbers for friends, classmates, and teachers sometimes expected to leave their mobile phones at their parents' home when they go to their husband's family to live. Maintaining former contacts are seen to increase the risk of possible infidelities, damaging gossip told by the bride about the husband's family's household, and ideas from outside the family that could influence the bride and cause discord in her marital home (Doron, 2012; Jouhki, 2013). However, the situation can vary in different parts of India. In the village studied by Tenhunen (2014a) in West Bengal, fathers and brothers gave mobile phones to a bride to ensure that she could stay in touch after moving away upon marriage.

Mobile communication can provide a rationale for the restriction of physical mobility. Women with access to mobiles in rural southern India can be encouraged to stay at home rather than undertaking travels to visit others (Jouhki 2013/ N=116 interviews + N=198 surveyed; see also Comfort & Dada, 2009), and there are also reports of women being denied

the chance to meet family and friends because they can be contacted by phone instead (Tacchi et. al., 2012; Doron, 2012).

Surveillance of women's mobile communication can also be carried out by persons other than relatives, the most studied case being employers of transnational migrant female domestic workers (Platt et. al., 2016; Chib et. al., 2014). Singaporean employers still regard owning mobile phones as detrimental to the work of domestic helpers, and phone ownership is a privilege which must be earned. Employers of female foreign domestic workers make various rules to constrain employees' communication with their country of origin, and use mobile phones to keep them under surveillance (and monitor their own children's well-being) by insisting they take it with them everywhere, so they can be called at any time (Platt et. al., 2016/N=38 in-depth interviews + 201 surveyed). This control was resisted and evaded using a variety of strategies, including hiding the phone and leaving the phone at home (Chib et. al., 2014; Platt et. al., 2016).

Foreign domestic workers, in turn, carry out their own "remote mothering" by monitoring their children's caregivers in a similar way in the country of origin (Chib et. al. 2014:84/ N=22 mixed methods). Through mobile phones, they maintain intense day-to-day involvement in children's schoolwork and housework, and enforce discipline and dating guidelines (Chib et. al., 2014; Cabanes and Acedera, 2012). The husbands of migrant domestic workers actually exert the least power and control in the family's communication through mobile phones, since they cannot afford to call and must wait for the mother to call. Fathers felt that mothers "abused" mobile communication by micromanaging and demanding an accounting of all remittance money. This was resisted by some fathers studied, who delayed answering (Cabanes & Acedera, 2012).

Communicative privacy and mobiles as personal space

Privacy is a valued benefit of mobile telephony in many of the studies surveyed. Phones are an easily concealable device that can be used away from the gaze of authority figures, and they offer users the chance to speak to only one listener at a time instead of everyone who gathers to overhear a conversation (Tenhunen, 2014b). Privacy is a resource that tends to be unevenly distributed, however, with men obtaining privacy through mobile technology much more easily than women do. Women's unsupervised communication is seen to be problematic especially in patriarchal cultures, and privacy is not only deterred by family members, but also by a lack of literacy when women must rely on others to help them send text messages or mobile money, and therefore must reveal their communication and financial transactions (Dodson et. al., 2013).

In India, keeping in touch after marriage with relatives in their birth households or with married daughters is important, both for sharing private confidences and for protection against abuse in the marital home (Tenhunen, 2008; Tacchi et. al., 2012). Mobile-enabled privacy helps women pursue their own goals and interests while appearing to be fully committed to the interests of their husband's family. Privacy also helps soon-to-be married brides and grooms whose marriages have been arranged secretly talk on the phone before the wedding in order to get to know each other (Doron, 2012).

Young persons use mobiles more widely to contact boyfriends or girlfriends unknown to the family and thus circumvent restrictions on their intimate behavior, and this has generated concern among parents in many societies. Mobile phones are given as gifts in exchange for sex or used as tools for maintaining premarital sexual relationships outside parents' control (Porter et. al., 2012; Crentsil, 2013; Stark, 2013). Children are often skilled in deleting calls and messages from mobile phones and this allows them to conceal information even if parents are monitoring their phone use (Stark, 2013/ N=145 interviews). In Tanzania, although secret relationships were possible before mobile phones, they required an

intermediary to carry a note, letter or verbal message: the note could be intercepted or lost, the messenger was not always trustworthy. Mobile phones conversations are non-mediated, removing the middleman in message sending. Yet phones are given by boys to girls as gifts for private communication between them, not as personal technologies the girl can use as she chooses or to empower herself. Boyfriends can even demand the phone back if they feel she is using it to contact other young men (Stark, 2013).

Privacy has practical consequences for women's well-being. HIV-positive women are dependent on the support and provision by husbands and in-laws, and some of the patients in Ghana interviewed by Crentsil (2013/ N=101 interviews) refused home visits from HIV counsellors who gave them advice and monitored their retroviral use or gave false addresses. This was because no one in their families knew of their illness, and they feared abandonment or eviction due its stigma.

Private communication through mobiles can be seen as providing a psychological space for the development of a separate sense of self, one less connected (or connected in new ways) to local and household expectations and norms. Technology enables individuals to reflect upon and transform their ways of operating in the world, and mobiles phones have become a "paramount storage space, a repository for everyday life and a memory aid" (Doron, 2012:419). Through contact lists, screensavers, music collection, application and text messages, mobile phones provide a site for personal life (ibid). In societies where the physical privacy to engage autonomously in social relations can be rare, Jouhki (2013) compares ownership and sole control of a mobile phone to "having a room of one's own", an "individual space for social interaction and expansion of personal horizons" (ibid:54).

Currently, more men than women enjoy this privilege. In Doron's (2012) study of northern India, the boatmen's wives did not own their own phones. Men, by contrast, often owned

their own smartphones with passwords and personal contact lists, video-clips, and songs. The household mobiles used by women tended to be older, a used feature phone that was not considered the private property of any one person. Household mobile phones were kept for family use to contact male family members if necessary, and calls were made under the gaze and authority of family elders and overheard by others in the household.

For men in India, the phone therefore tends to be a complete personal technology (for entertainment, work, friends) that increases the owner's autonomy outside the home, whereas for women it is a tool for remaining connected to the household and natal kin, for handling emergencies and the immediate needs of the family, or for feeling protected by the family when needing to travel away from home. In other words, the phone appears to allow male users to cultivate an independent persona, whereas for women it maintains their embeddedness in family networks and the household sphere.

Negotiation of mobile access and use: patriarchal bargains

Research indicates that financial autonomy alone does not guarantee women a position from which they can exercise the kind of agency that is important to them. Economic benefits gained from mobile phones do not always translate into social autonomy for women, because income has little impact on entrenched patriarchal relationships in the home (Svensson & Wamala Larsson, 2016). In many societies, women receive social respect and status primarily through the fact of being married to a man. Kandiyoti (1988, 1998) writes of patriarchal bargains as ways in which a woman can choose to strategically accommodate gendered constraints that disadvantage her in certain respects but maximize her power in areas that are more important to her. This means that the preferences and actions of women in developing countries should not be assumed to arise from ignorance or acceptance of

subordination, but from decisions made about gendered working arrangements (Masika & Bailur, 2015).

Women can decide the extent to which they adopt a technology based on how they think it will affect the gender equilibriums in their lives, using what Masika & Bailur (2015:43/ N=6, in-depth interviews) call "adaptive preference". Newly-married women in West Bengal avoid openly defying the rule of avoiding contact with birth families during the first year of marriage by phoning them when their in-laws are not present (Tenhunen, 2014b:166). Women are ready to give phones they received to family members out of a sense of duty or because they see their own needs as secondary (Comfort & Dada, 2009; Chib & Chen, 2011; Dodson et. al., 2013).

Some women participating in a study in Uganda found it difficult to receive business calls at home, since husbands assume they are talking to lovers. Women chose to maintain peace in the home instead of threatening the spousal relationship (Masika and Bailur, 2015:53). Ugandan business women allowed their husbands to look through their mobile phone when at home, because women described themselves as "kneeling before the husband" (Masika & Bailur, 2015:57). One female informant explained that accepting subordination by a husband gives a woman status in the eyes of other women (and men) in society: "However much money a woman has, without a man by her side, she earns no respect in society…" (Masika & Bailur, 2015:57). One of the Ugandan women interviewed by Kyomuhendo (2009/ N=8, in-depth interviews) who made money from her mobile payphone business was estranged from her husband due to tensions over her business. She complained that although she was "free" and could control her earnings, her success was "meaningless without my husband" and that financial autonomy did not automatically translate into "empowerment":

'How can you talk about [being] or feel empowered when you have been deserted? […] Empowerment starts with having a husband – someone to exercise your power over at least' (Kyomuhendo, 2009:157)

Some of the Ugandan women interviewed were reported to want their male partners to have better mobile phones than they themselves possessed:

'If a man has a phone the same price like the one I have and so the only difference between us is him putting on trousers. Both of us having the same phones means we are equal so I can't kneel before him when I meet him. It depends on his worth. If we are worth the same I can't respect him.' (Masika & Bailur, 2015:57).

In many societies the mobile phone represents a substantial investment vis-à-vis other possessions, and for this reason it has become an important symbol and vehicle of displayed social status (Porter et. al., 2012; Chib & Chen, 2011). Masika & Bailur, 2015:58 argue that the patriarchal bargains in which women adopt a submissive or subservient role are conditional upon a man's economic worth. This is understandable in contexts where women are economically dependent upon men and must choose their partners accordingly.

Although the Indonesian midwives studied by Chib and Chen (2011) struggled to be taken seriously by doctors when communicating through mobile phone, their use of mobile technology earned them respect within their communities. Some of the midwives in the study strove to minimize this new status by sharing, hiding or making excuses for their phones, so they could enjoy the autonomy of mobile telephony while still outwardly respecting gendered norms of humility. They also chose not to profit financially from the new knowledge they had gained through mobiles, opting instead to preserve the status quo of their husbands as the family's main provider (Chib & Chen, 2011). Chib and Chen (2011:497) conclude that access to mobiles does not give women the power to resist the gendered constraints in their society. Most of the women studied by Kyomuhendo (2009:163) similarly felt constrained by the social costs of "going beyond the limits", and did not use their new positions as financial contributors in the family to openly assert themselves as decision-makers or try to change gendered roles or identities. The few who did faced violence, separation, and/or divorce. Development interventions that promote mobile phones can create real social tensions within

households and communities, a risk that should be taken into account during program planning (Chib & Chen, 2011).

Limitations of the study

As I am primarily fluent in the English language, the present survey covers only research published in English. Constrained by the limits of space and the pace of change in the use of mobile technologies, coverage confines itself to the period 2007–2017. Most of the literature reviewed here deals with women rather than with *gender*, that is, the relations between men and women, therefore this has, of necessity, been my focus as well. Because I concentrated on lower-income and less educated groups, smartphones were still not used among the majority of persons studied in the research I am reviewing here.

My focus is on studies produced within academia, and I have excluded mobile or development industry-driven studies or reports, although these are a major form of research in mobile studies. This chapter does not provide statistics on mobile use by gender, since these numbers change quickly and are rarely disaggregated by education or socio-economic status. Space does not allow for a critical examination of the different methods used in the surveyed studies and how they have influenced the questions and outcomes of the research.

Implications and recommendations

Recent research has problematized more affluent, Western conceptions of *what exactly a mobile phone is*. Mobile phones are not always "mobile" in developing countries, since they can be kept at home under the scrutiny a family member. In-household surveillance and use by other family members also negates the privacy function of mobiles (Doron, 2012). Especially for girls and married women, the mobile phone is not necessarily a personal technology in the sense of enhancing individual capabilities or a private sense of entitlement. Further research needs to ask why mobiles facilitate more privacy for some but not for others.

To better enable theory-creation, research data on mobile access and use should be disaggregated according to gender, age, culture, and socio-economic status. Since research on gender is not synonymous with research on women, more studies are needed focusing on men's use of mobile communication in developing countries. More attention should be paid to the ways in which some women in more powerful positions (within the household or society) can exert power and control over others through mobile telephony.

Consideration should also be given to the problems inherent in the design of devices originally intended for affluent Western markets, as these may negatively amplify existing inequalities for low-income users in developing countries (Wyche et. al., 2016). Even for seemingly simple mobile services and applications, there may be design mismatches between what the poor are envisioned to need and what they actually need, given the relatively high cost of airtime, low literacy skills, multi-lingual environments, prevalence of poor eyesight, and the skills levels required to manipulate the wide variety of available interfaces, operating systems, menus and buttons.

Conclusions

The answer to the question posed at the start of the chapter, whether mobile telephony empowers women in so-called developing countries, is both yes and no. Mobile phone use empowers women in some situations and leaves them disempowered in others. Women can also use mobile phones to control or monitor others.

Mobile phones may not themselves be "mobile" in terms of being carried from place from place, but they have enabled vital communication with family, friends and spouses who are elsewhere. Mobile phones may reduce the physical travel that was earlier the only alternative for fulfilling responsibilities and maintaining social contacts, but whether this is seen as desirable or undesirable by women themselves and in what situations needs to be studied.

Although mobile phone use can challenge power relations, it can also upset gender relations in ways that do not always benefit women in patriarchal societies whose social status and continued economic survival depend on links to husbands and marital kin groups.

There has been optimism about the potential of ICTs and mobile phones to bypass traditional gender structures and gendered control of information. However, it is clear that mobile communication on its own cannot solve poverty, class hierarchy or social stigma. In fact, mobiles are used extensively for control of others, and this control is most commonly directed at women. Phones have also given more privacy and space for personal development to men than to women. Men, who generally possess more education than women, can make better use of the phone's features and services, and more easily access the Internet through smartphones. This has perpetuated the digital divide between the genders, a divide that may widen still further.

At the same time, the research surveyed here opens up the possibility that strategic mobile interventions could be beneficial if inserted into particular situations where they could bridge gaps in awareness and access. The need for such interventions would be specific to places and situations, and would thus require careful study on the ground, as well as the mobile industry's strengthened collaboration with NGOs and researchers. Financial investment in new mobile solutions would be feasible especially where similar needs are identified across a number of communities. An important aim of future research on gender and M4D would therefore be to identify these shared needs.

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