

Civic Empowerment through Digitalisation: the Case of Greenlandic Women

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ABSTRACT

This paper explores the disruptive and transformative effects of digital technology on gendered security asymmetries in Greenland. Through ethnographic fieldwork conducted in Greenland and Denmark, research findings emerged through in-depth interviews, collaborative mappings and field observations with 51 participants. Employing a critical feminist lens, the paper identifies how Greenlandic women develop digital security practices to respond to Greenland's ecologically, politically and socially induced transformation processes. By connecting individual security concerns of Greenlandic women with the broader regional context, the findings highlight how digital technology has created transitory spaces in which collective security is cultivated, shaped and challenged. The contribution to HCI scholarship is therefore threefold: (1) identification and acknowledgement of gendered effects of increased usage of digital technology in remote and hard-to-reach communities, (2) a broader conceptualisation of digital security and (3) a recommendation for more contextualised, pluralistic digitalisation policies and design.

Author Keywords

digital security; Greenland, indigenous identity; women empowerment.

CCS Concepts

•Security and privacy → *Social aspects of security and privacy*; •Human-centered computing → *User studies*;

INTRODUCTION

Greenlandic society is undergoing fundamental transitions; from seeking greater independence from its former coloniser, Denmark, to restructuring its public sector and economy, moving towards more self-reliant, locally shaped and managed systems. Digital technology is central to these transitions as it holds the potential to digitally collapse vast geographic distances between the 78 Greenlandic settlements and towns that lie along the Western and part of the Eastern coastlines;

thereby offering access to basic, otherwise unavailable services including health care and education [52, 17]. The smallest settlements count four to 40 inhabitants while the capital of Nuuk has a population size of about 17,700 [52]. Given the limited mobility between the settlements, digitalisation further promises to diversify career and personal development opportunities as well as accessible information and essential services, especially in Greenland's most remote and hard-to-reach communities. In parallel, rising global temperatures significantly affect the livelihoods and everyday life practices of those inhabiting the Arctic region. Retracting sea-ice impedes, for instance, local hunting traditions while also attracting rising numbers of tourists and mining companies due to better accessibility [44]. This has a significant impact on the lived experiences and traditional societal structures in Greenland.

In this paper, we explore how rapidly expanding digitalisation processes and the widespread use of Facebook and other digital technologies are disrupting and transforming gender roles in a changing Greenlandic society. We do so by positioning research findings from an ethnographic study conducted in both Greenland and with members of the Greenlandic community in Denmark, within HCI's wider digital civics agenda, e.g. [56], and critical feminist security studies, e.g. [25]. The paper shows how digital technologies have enabled many Greenlandic women to affirm their place in civic participation through the cultivation of wider social support networks and economic independence. The findings underline the "varied and often invisible roles" that are connected to the underrepresented security needs of women in the wider process of modern Greenlandic nation-building [26, p.209]. These insights are of particular significance against the backdrop of Greenland's lingering post-colonial and gendered power imbalances, which have been associated with persistent societal challenges that continue to undermine the development of an equal and inclusive Greenlandic society [19, 13]. They further illustrate the unintended, yet, extensive effects of digital technology usage that surface in response to complex local contexts and social structures.

Outlined here and further elaborated in the Discussion and Research Findings sections, the paper highlights three key findings on the transformative agency of digital technology in Greenland:

- Facebook and other digital platforms have been functioning as an emancipatory agent for many Greenlandic women,

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who utilise the platforms (1) for alternative income generation, (2) as an image-based pan-Arctic networking tool and (3) to establish social support networks.

- A broader conceptualisation of security within digital civics work is required to better understand and design for the unintended social, cultural and gendered implications of increasing digital technology usage in remote areas.
- More contextualised, pluralistic digitalisation policies and corresponding digital design is needed to better account for women's specific security concerns and enable their contributions to Greenland's changing society.

This work further contributes to the literature on the centrality of digital technologies for connecting and supporting physically disconnected and marginalised communities, which has been identified in HCI4D and ICT4D scholarship as key to responding to precarity, e.g. [48, 39]. It also emphasises the variety of gendered effects of technology-induced disruptions. In light of the research findings, the paper further suggests the need for more inclusive and sustainable security policies and design solutions which better account for the contextualised security needs of women in remote communities. We argue that both CHI and HCI communities have a critical role to play in this context.

BACKGROUND AND RELATED WORK

The fundamental developments in the process of Greenland's formation as a state on the international stage have also left a mark on Greenlandic society more widely. Since the 1960s, the percentage of women in Greenland has been decreasing, partly because more women than men have emigrated from Greenland, especially to Denmark. Moreover, most members of the non-Greenlandic born workforce who started to arrive in Greenland in the 1950s are men [37, 58, 16, 43]. Accordingly, more than half of the population is male; in fact, only in the age-group 50 and above is there a small majority of women [50, 51].

The reasons why women in particular decide to leave their home towns are manifold and complex. Previous research indicates that the chances for a better life or education are among the main impetuses for migration among Greenlandic women to Denmark, along with personal relationships and flight from domestic violence and other social problems [18]. Social issues, including alcoholism, suicide, domestic violence and sexual abuse are often listed as the dominant societal and public health challenges facing Greenland, with domestic abuse affecting a significant number of Greenlandic women and children. This is also evidenced by the fact that 37% of women born between 1970 and 1979 have experienced sexual violence in their childhood [34]. Moreover, suicide is a leading cause of death among young men aged 15–29 in Greenland [47] and 21% of girls have reported to have had suicidal thoughts [41].

A growing number of initiatives have been set up to try to tackle such societal issues, including telephone helplines and online information sites, e.g. [42]. Despite partial improvements, researchers and politicians have stressed the persistence of cases related to, amongst others, child abuse and suicide that

continue to affect the Greenlandic society [41, 34, 29]. The lack of digital and physical infrastructures make up one element obstructing the effectiveness of the already implemented measures. Limited physical mobility between settlements as well as unstable Internet connectivity in parts of the country have often rendered the use of these support services, as well as basic health care or further education, difficult, ineffective and even impossible.

With an estimated 41,000 active social media users within Greenland, which equals around 72% of the country's total population [49], Facebook and other digital platforms have emerged as disruptive agents in the context of Greenlandic societal transformations. Past research on general Facebook-usage patterns has looked at how societal change and status [31], as well as notions of trust [35] and well-being [7] get reflected and formed through individual usage practices. However, many of these studies have been conducted in similar cultural settings, neglecting the role and impact of the broader political and socio-economic contexts within which such practices exist, as well as the underlying normative rules at play. These wider societal aspects, however, need to be taken into consideration to gain a better understanding of the role of digital technology in gender empowerment in remote communities. This is essential, as the social, cultural, economic, environmental and political factors cannot be separated from the technological and infrastructural; they also shape and are shaped by notions of security.

HCI and Gender Empowerment in Rural Areas

A growing body of HCI literature has engaged with feminist approaches aiming to support the development of more inclusive and accountable digital technologies. Several studies have advocated an increased level of awareness of the various ways in which technologies may contribute to both the maintenance and the emergence of marginalisation and gendered exclusion, e.g. [30, 15, 1]. Sultana et al. [53], for instance, note the complexity of issues that women in rural, low-income and patriarchal societies are facing; circumstances which entail that ill-conceived and maladjusted digital technology might not empower but rather endanger the agency of female members of isolated and marginalised communities.

The issues and consequences of technological design being primarily based on user experiences from places that are technologically high-developed has been addressed beyond feminist HCI scholarship, see [3, 38]. Such studies found that only a little inspiration with regard to the layout and functioning of many of the most prominent socio-technological systems is derived from rural communities or underprivileged and marginalised groups within societies. Bidwell and Browning [3, p.145] stress that rural communities "often encounter a disjuncture between technology and their lived experience that reflects incompatibilities between concepts about communication produced in urban places and rural life." Bidwell and Hardy [2, 32], moreover, criticise the heavily text-based, Western-centred communication approach which leaves little space for other cultures and modes of knowledge transfer. They refer to oral traditions in South Africa and Australia, which also play an important role in Inuit culture. The dis-

abling effect of weak (digital) infrastructures [55, 46, 54], along with the lack of relevant skills to employ digital services once connectivity is established, have been identified as factors impeding the emancipatory potential of digital technologies in remote areas [46].

HCI scholars have encouraged further research into both the study of unintended gendered consequences of increased technology-usage as well as the integration of feminist perspectives in design and research practices. They have called for HCI research that focuses on e.g. feminist participatory research methods and an augmented awareness of different cultural contexts and overlapping identities [5, 1, 10, 11].

Security and Emancipation: Feminist Security Theory

The notion of empowerment is closely related to the conceptualisation of security as emancipation. In some schools of security theory, security is discussed as a form of empowerment. Security can be conceptualised not only as protection from harm but also as the state of being free from fear [45]. The former is termed “negative security” and the latter “positive security”. The positive form of security is one that particularly features in theories of human and societal security. The positive form of security is driven by a different logic to the one that drives negative security. Negative security is a logic of dualisms [14] such as challenge-resistance, one that Hoogensen Gjørø and Rottem [21, p.155] describe as “attack, parry and riposte”. Security is defined by Hoogensen Gjørø [20, p.836] as “a concept we wish to avoid, one that should be invoked as little as possible. We value it negatively, or it is understood to represent a negative value.” By contrast, positive security is driven by a more outward looking logic, as “something that is positively valued, or as something that is good or desired. It is a good which provides the foundation to allow us to pursue our needs and interests and enjoy a full life” [20, p.836]. Coles-Kemp, Jensen and Talhouk employ the theoretical framework of positive (and negative) security to conceptualise the mobile phone as a device that enables the creation of “safe spaces” for newcomers in Sweden [12].

Related to this, feminist security theory is part of a tradition of security thinking that challenges the notion of the state as the site of security. It engages with inclusive and positive notions of security and often also presents security as a collective rather than as an individual endeavour. Feminist security theory is part of a wider tradition of feminist inquiry: “feminist inquiry is about understanding how things work, who is in the action, what might be possible, and how worldly actors might somehow be accountable to and love each other less violently” [24, p.7] and where a feminist conceptualisation of security is framed in the everyday [25].

The collective dimension of security can be seen in feminist theorising of peace-building. In her work on feminist perspectives of security theories and practices, Heidi Hudson [26, 27] discusses the role played by gender in peace-building processes taking place in previously conflict-ridden areas. Hudson argues that gendered subordination and violence are often not only a consequence but also a cause for internal conflicts and instabilities on state-level and thus require more consideration also in institutionalised processes such as peace-building [26].

She further points out how the liberal intervention design has been depriving women in the affected regions of their agency by reproducing gendered power asymmetries and “instrumentalist interpretations” of women’s roles [26, p.288]. Incorporating the specific experiences and security concerns of both men and women is thus important at all stages of the securitisation process to facilitate successful and sustainable peace-building measures. This increased contextualisation and broadening of the notion of security further enables us to “transcend the gap between private and public peace processes” which ensure that “women’s informal peace-building contributions [become] part of high politics” [26, p.316]. As an example, Hudson refers to different ground-up women’s movements in Africa that successfully contributed towards peace-building processes by promoting collective action including “networking to share common experiences and practical training for conflict resolution and trauma counseling” [26, p.299]. Such measures address these women’s “concerns and goals” collectively which allows them to be heard on a higher political level.

Within feminist security scholarship and practice equal emphasis is placed on listening and telling as a means of acknowledging, celebrating and exploring the tension between inclusion and exclusion. Practices of storytelling and story listening as well as the use of humour are collective practices that seek to build security through inclusion rather than exclusion. Storytelling and story listening highlight stories of discordance as well as concordance and the act of telling and re-telling is as transformative as listening [57]. Laughter and storytelling are also a means of de-legitimising acts of violence [57, p.97]. Looking at technology practices through the lens of positive security uncovers different forms of security and acts of securing. As the study below illustrates, such an understanding is important for the development of positive and supportive technology policies that are attentive to gendered understandings of security – to develop approaches that *listen* to the everyday experiences of women in remote communities.

METHODOLOGY

The ethnographically grounded research for this study was conducted with participants in Nuuk, Greenland, as well as with members of Greenlandic communities in Copenhagen and Aalborg, Denmark. The researcher spent one month in Greenland in May-June 2018 and two weeks in Denmark in November 2017 and May 2018. Participants were individuals above the age of 18 who identify as Greenlandic or have, through their work or family relations, very close and long-lasting connections with life in Greenland.

Semi-structured interviews, participatory focus groups as well as ethnographic observations were used in the data collection process [8], see Table 1. This research design was chosen with careful attention to the particular field-setting in Greenland and with a critical stance towards the researcher’s own positionality. As the fieldwork was designed and conducted by a white, female, junior researcher, without prior links to Greenland, it was deemed central to place the everyday experiences and concerns of the participants at the heart of the research design to avoid any kind of Euro-centrism. Accordingly, a

decolonising methodology based on collaboration, reciprocal trust and shared learning was adopted for the study. The participatory methods were chosen in light of these research principles as they allow for a more transparent, creative and inclusive data collection process. Being able to adapt each participant interaction to their respective needs and preferences helped to build trust relations over time. The combination of qualitative research methods was approved through the research ethics review process of the researchers' institution, prior to the commencement of the fieldwork.

Chronology	Place	Method	Composition
Nov' 17	DNK	EO	N/A
Nov' 17	DNK	SSI	one-on-one
May' 18	DNK	SSI	one-on-one
May-Jun' 18	GRL	EO	N/A
May-Jun' 18	GRL	SSI	one-on-one
May-Jun' 18	GRL	PFG	P15 P16 P17 P32 P36 P39 P41 P43 P5 P31 P35 P45 P40 P42 P44

Table 1. Chronology and Composition of Participant Engagements. Abbreviations: DNK=Denmark, GRL=Greenland, EO=Ethnographic Observations, SSI=Semi-Structured Interviews, PFG=Participatory Focus Groups.



Figure 1. Left: A participatory map depicting data flows. Upper Right: A 'force field' portraying the perceived (dis)empowerment through available digital media. Lower Right: A timeline of digital connectivity in Greenland interwoven with personal narratives. All three were created during focus groups in Nuuk.

The recruitment process mainly took place at public community centres in Copenhagen and Nuuk as well as at the Greenlandic university or through the support of local gatekeepers. Further participants were recruited using Instagram. By searching for specific hashtags including #Nuuk or #KalaallitNunaat, potential participants were identified and contacted with information on the project using Instagram's messaging service. The researcher's own public profile thus served as a 'personal business card'; a way for the participants to get

a first, more personal impression of the researcher. A wide range of participants with different professions as well as origins are represented in the sample, including women and men from all parts of the country and occupations including artists, politicians, students and shop assistants. Similarly, participant ages ranged from 18 to 70+ years of age. In Table 2, participants have been anonymised and given an *ID*, which is used to identify individual participants throughout Research Findings (P1, P2, P3 etc.).

Depending on the setting, interviews were audio-recorded or notes were taken while the documentation of the focus groups was mainly through the collectively created visual maps and diagrams (see Figure 1). All interactions with participants were conducted in English. English dominated the data collection process for various reasons. First, being non-native yet proficient English speakers, both the participants and the researcher were able to convey their questions, thoughts and opinions using English without placing anyone at a disadvantage. Second, English emerged as a more "neutral" choice, given the symbolic meaning attached to both Greenlandic and Danish with regard to questions of personal identity and political standing.

There were three different designs for the focus groups, inspired by [8] :

- Using the **Map**, participants were asked to sketch out how they envisage the flow of information as generated by their own use of the Internet, on a map. The collaborative design of the map was accompanied by discussions specifying the content, recipient and motivation of both information output (production/creation) as well as the content and origin of the information they consume.
- With the **Force Field** participants were asked to write on post-it notes what the Internet, and/or digital technologies, enabled them to do, and in what way they might constitute an obstacle or have a negative impact on their everyday lives. Having noted all ideas, participants were asked to sort their post-it notes collectively by ranking them according to importance and relevance along a horizontal line.
- The **Timeline** was used to encourage cross-generational debate. Using this method, participants marked and discussed how the use of and access to digital technology had changed over time, based on their own experiences.

The data was transcribed, annotated and digitalised upon return from the fieldwork. All data were then analysed based on Braun and Clarke's [4] approach to thematic analysis, using the qualitative analysis software NVivo, see e.g. [36]. In line with the study's underlying inductive approach, a number of themes emerged during the fieldwork, transcriptions, first engagement with the data and an initial coding run. The identified themes included, amongst others, individual and collective security concerns in relation to the use of and access to digital technologies and gender empowerment.

RESEARCH FINDINGS

To provide context, this Research Findings section will firstly lay out some of the digital security concerns which partici-

ID	Gender	Age Group	Sector	Site
P1	F	25-34	Social Work	CPH
P2	F	55-64	Public Sector	CPH
P3	F	35-44	Social Work/Art/Design	CPH
P4	F	35-44	Administration	CPH
P5	F	25-34	Student	CPH
P6	M	25-34	Unemployed	CPH
P7	F	25-34	Student	CPH
P8	F	55-64	Social Work	CPH
P9	M	35-44	Engineering	CPH
P10	M	65-74	Retired	CPH
P11	F	35-44	Public Sector	AAL
P12	M	25-34	Tourism/Art/ Design	NUK
P13	M	45-54	Public Sector/IT	NUK
P14	M	35-44	Social Work	NUK
P15	M	25-34	Media	NUK
P16	M	25-34	Media	NUK
P17	F	25-34	Health Care	NUK
P18	F	25-34	Art/Culture	NUK
P19	F	25-34	Art/Culture	NUK
P20	F	25-34	Art/Media	NUK
P21	F	25-34	Health Care	NUK
P22	M	35-44	IT	NUK
P23	F	25-34	Tourism	NUK
P24	M	45-54	IT	NUK
P25	F	18-24	Administration	NUK
P26	F	45-54	Art & Design	NUK
P27	M	35-44	Administration	NUK
P28	F	25-34	Tourism	NUK
P29	F	45-54	Health Care	SIM
P30	F	35-44	Public Sector	NUK
P31	M	25-34	Engineering	NUK
P32	F	25-34	Unknown	NUK
P33	F	25-34	Art/Culture	NUK
P34	F	25-34	Student	NUK
P35	F	45-54	Retail	NUK
P36	F	25-34	Unknown	NUK
P37	F	25-34	Art/Culture	NUK
P38	M	18-24	Leisure	NUK
P39	F	25-34	Unknown	NUK
P40	F	25-34	Student	NUK
P41	F	25-34	Retail	NUK
P42	F	25-34	Student	NUK
P43	F	25-34	Unknown	NUK
P44	F	25-34	Student	NUK
P45	F	55-64	Unknown	NUK
P46	F	35-44	Student	NUK
P47	F	55-64	Retired	CPH
P48	F	35-44	Art/Education	NUK
P49	M	35-44	Government	NUK
P50	F	25-34	Student	NUK
P51	M	25-34	Public Sector/Education	CPH

Table 2. Participant Demographics: abstracted to avoid risk of identification. Abbreviations for locations: NUK=Nuuk, SIM=Sisimiut (via Skype), CPH=Copenhagen, AAL=Aalborg. ‘Unknown’ in the sector-column refers to cases where a participant’s occupation did not naturally come up in discussions with the researcher.

pants, especially women, have experienced in their everyday lives. In this way, similarities and differences of the Greenlandic case study with other rural or hard-to-reach studies are clarified. Secondly, once this context has been provided, three digital, emancipatory usage patterns that became apparent through the data analysis and that respond to the theme of (in)securities are presented. The three examples are situated in one economic, one cultural as well as one social aspect of Greenlandic women’s involvement in the country’s digital reformation. These findings are then discussed, applying a critical feminist security lens.

Security Concerns

This section presents the security concerns that participants related to their felt experiences of living within and through a society in transition and their experiences with digital technology in this context.

The (In)Securities of the Biographical Public

The small size of both the general population and the individual settlements of Greenland was brought up by several participants as an aspect which affects (digital) security concerns in their everyday lives. The role of what has been described as a ‘biographical public’ in the literature [31] was central to participants. A biographical public refers to an (online) social network that includes a high percentage of people who collectively share parts of their individual biography. This phenomenon has been found to prompt people to act in line with their social environment’s respective normative expectations. The tightly-knit social networks of the Greenlandic society also affected participants’ perception of social privacy and security.

A female participant (P1) who grew up in one of Greenland’s bigger towns and who now lived in Copenhagen described how her sense of personal security had been affected ever since she had moved to Denmark:

“I do not feel safe when in Denmark, you don’t know the people. Everybody is anonymous. You see people you have never seen before and that you will probably never see again. People can do whatever they want and then just disappear again. In Greenland, you always see the people again, you understand who they are, what they want, where they come from and who their family is.”

Similar statements surfaced throughout the fieldwork and engagements with research participants. In general, Greenland was considered a “safe place” due to the lack of anonymity and the tight support networks of families and connections that spread across the country.

However, several participants also spoke about the downsides of living in a socially interwoven and geographically isolated society. Several women described how the sense of security gained through familiarity and close-knit community ties did not always translate to or manifest itself in digital contexts. Several female participants in Nuuk (P29, P46, P48, P50) talked about their experiences of having received a high number of unsolicited online friend-requests and messages from men who “*want more*”. They described this phenomenon to be causing them discomfort, affecting their everyday sense of

security and trust in their online connections. P46 explained that these experiences were common in Greenland and further indicated that she used to be “careless” when sharing information about herself and her family online. Today, she would no longer feel safe to post anything personal on Facebook, such as, for example: “*home alone with my children tonight*”. She related this directly to the unsolicited and repeated attention she had been receiving online.

These experiences were exclusively shared in one-on-one interviews. One participant also assumed she was the only person affected by this phenomenon. P7 further described how this combination of gendered insecurities and the previously described involuntary and ubiquitous transparency can become encumbering for individuals affected by domestic violence:

“I think that some of it, [the fact that Greenlandic women are moving to Denmark], has to do with relationships, bad relationships, violent relationships with their – husbands. When they don’t have any more possibilities, when they have nowhere to go, when they have to escape, they have to do it far away because everybody knows everybody and it’s a small country. So they have to move and that is why some of them are coming here to Denmark to get a new start.”

A young male participant from Nuuk (P31) further described in a focus group how the Internet had initially brought anonymity to Greenland until Facebook had grown in popularity. Now he felt that he was expected to only act under his real name online and that every post or activity on Facebook would likely have an impact on his offline interactions and life generally. P16 supported this and commented: “*You learn to appreciate to be private as people in Nuuk know each other so well*”. Several participants stated that they would refrain from expressing political views online, e.g. on Greenlandic independence or other perceived controversial topics, as they perceived that this could also affect their everyday offline interactions and relations. P13 reflected on how this would affect citizens’ views on the process of digitalising the Greenlandic public sector:

“I could imagine that people are, on the one hand, used to their neighbours knowing exactly what they are doing and what their relatives were doing in another town because everybody sort of knows each other [...] So if your next-door neighbours actually know what I am doing then who cares about what the government is doing about my data. But it could also be that [the government] will encounter resistance because people are fed up with the fact that in your private life everybody seems to know everything, it is difficult to keep a secret in Greenland.”

This narrative points to the risk of a growing disconnect between Greenlandic people and the Government of Greenland, which has implemented an accelerated digitalisation process in recent years [17]. As expressed here by P13, extended digital infrastructures within Greenland has led some Greenlanders to increasingly consider the protection of their online presence – precisely because of the effect that this might have on their offline relations in their local community.

Society in Transition

Coming to terms with the country’s colonial history and its current and future relationship with Denmark and elements of Danish culture has been a central element in the public debate over recent years. The debate around the political future of Greenland was also a contentious and unsettling topic for most participants. This debate thus also raises central questions around notions of Greenlandic identity, identity-building and senses of security in an ecologically and politically changing environment. Many participants expressed their reservations regarding the exclusionary dualism that had dominated many online discussions around these questions and advocated more inclusive approaches. In this context, language (Greenlandic/Danish) was named as one aspect affecting the frictions experienced and described by the participants. With only limited online translation services for the different Greenlandic dialects available online – i.e. no Google translate for Greenlandic exists – Danish-speaking participants described how they felt excluded from any online activities and conversations that were taking place in Greenlandic. P17 expressed her appreciation for the opportunity to be able to interact through likes, emojis or photos to circumvent language-barriers with friends and clients online. P11 underlined this barrier in a comment: “*I think, in many ways language divides people; Greenlandic and Danish. Because it is such a strong symbol of whether you are Greenlandic or whether you are Danish.*”

The origins of such frictions around Greenland’s cultural duality are manifold and complex. P33 traced the origin of these divisions back to education:

“We are very rooted in our own history – but not the recent history [...] People often have no idea what happened between our great ancestors and now, many people have forgotten what the 40s and 50s and 60s were all about which is quite critical because that is really when modern Greenland was founded. And a lot of really critical things happened that had a lot of side-effects, like when Greenland started to be modernised [...] I thought we need to get our own history out to ourselves, it’s so tremendously important.”

Several participants stressed the need to update and adapt curricula in both Greenlandic and Danish schools (e.g. P2, P11, P18). In a similar context, P18 argued that a more inclusive conceptualisation of Greenlandic identity required to “*constantly [separate] the traditional and the modern*”. She further reflected whether an exclusive focus on traditional Inuit culture and traditions would make people focus more on the differences rather than on the similarities between all members of modern Greenlandic society. One-sided outward representations of Greenlandic society would sustain this unrealistic and unsustainable image: “*In everyday life in Greenland, you don’t have to do drum-dancing [to survive]*”. One participant noted that this struggle between the conservation of traditional and the promotion of modern identities exerts pressure on parts of society. She adverted to the difficulties experienced by Greenlandic men in relation to these fast cultural changes and in having to accept that “*women are leading the country*”. She assumed that many of the previously described societal

problems could be traced back to these fast transitions. P11 brought this into conversation with the notion of resilience:

“I think resilience is quite interesting in a Greenlandic perspective. I know a lot of people from my generation or younger generations who have been sexually abused as children and who have experienced neglect in one way or another and they have the resilience and they are taking responsibility and they are moving on, of course it does not go for all the [younger] generation but I think I see much more resilience in the younger generation than in the older generation. And I think that the educational levels have been rising through the years. There is a bigger outlook in the younger generation and I think these are one of the things that gives a bigger resilience - that you are actually able to take responsibility for your life and that you are able to change the path that you'd been given as a child.”

It thus became apparent how the expansion of digital connectivity has brought previously segregated parts of the Greenlandic society closer together. This has not only unveiled unanswered questions regarding the Greenlandic identity and self-image but also instigated a comprehensive dialogue on possible pathways towards a more inclusive future.

Spaces of Collective Security

The following section outlines three situated examples of digital, women-led initiatives that emerged from the data and during fieldwork observations. These practices and activities had evolved over time in response to the frictions and challenges faced by Greenlandic society, presented in the previous section. They were seen to have a direct impact on many of the women's sense of security and, as a result, their empowerment and identity. Identified patterns of online engagements aspired to shaping digital spaces which did not reproduce unequal and silencing practices, but that positively contributed to the various societal issues in a creative and empowering way; thus, helping to sustain positive and emancipatory senses of security.

Income Generation

The role of digital platforms as facilitators for income generation has been discussed in the context of other HCI and HCI4D studies on digital women empowerment in rural or developing settings across the globe, e.g. [28, 9, 6]. Women in these case studies benefited, for instance, from the spatial and temporal flexibility provided through the use of mobile phones to access information and to become economically active online, irrespective of their location or status within the local community. Even though mobile phones also play an important role in Greenland's digitalisation process, this case study offers a different context than has been addressed in the HCI literature so far. Being listed a high-income country with considerable financial dependency on subsidies from its former coloniser, Denmark, the challenges for Greenland lie primarily in the development of a more sustainable and inclusive economic diversification.

As most products sold in Greenlandic shops and supermarkets are imported from Denmark by sea or air, prices for many

everyday products are relatively high and mainly of Danish origin. With Facebook having evolved to be the central digital communications platform in Greenland [49], it has also become a major site for local, small-scale businesses to advertise their products; it has thus become a means for income generation and for bypassing existing economies in place. The “Buy – Sell – Exchange Nuuk” Facebook group was generally mentioned as one of the greatest benefits enabled by better digital connectivity in Greenland. A group of young mothers stated for instance how this group had helped them to quickly and cheaply access the necessary equipment for their newborn babies. This economic isolation and lack of alternatives also affected young entrepreneurs as was discussed by P20 who works with social media: “*It is hard [here] to connect to industries!*” She said that she was often unable to develop the necessary collaborations and had to wait for relevant people to travel to Nuuk to engage in constructive networking activities.

Moreover, several female participants were engaged in the manufacturing of hand-crafted artefacts such as jewellery, clothing or pottery and further examples that were mentioned included, for instance, organic cosmetics. Participants reported how their products had gained initial attention on social media and were now successfully sold all over Greenland and abroad, using mainly Facebook and Instagram. What had started out as a hobby for these women developed into a profitable e-commerce business, over a relatively short period of time. The design of their products often had a link to the local culture and was seen to respond to a rising global demand for “authentic”, small-scale produced products: “*Because it is unique - very unique. Stuff sells if it has a story*” (P26). P34 and others also talked about their use of YouTube to acquire and develop their creative skills. P48 explained that she could have developed her business more comfortably in Denmark but had decided to stay in Greenland as she felt a responsibility and obligation towards the local community and, especially, towards the younger generation in Greenland. By teaching them her craft in classes offered on a regular basis and in various locations, she hoped to provide them with new skills and new perspectives and, as a result, a positive sense of security. This was explained to be particularly important given the relatively high number of traumatic experiences among young people and families in Greenland.

Pan-Arctic Networking Tool

Several participants working within the art and culture sector talked about digital technology as a source of inspiration, personal development and a way to get in touch with like-minded individuals and potential collaborative partners. Furthermore, digital technology helped them to spread their work beyond the resource limitations of their Greenland home. According to many of the participants, the small size of the local community rendered their search for suitable collaborative partners often difficult, hindering the development and implementation of cultural projects and initiatives. P37, a young artist who led the creation and publication of a product related to Inuit culture further explained how her collaborative work had been enabled through the Internet. Using Instagram, she had searched Inuit-specific hashtags to identify other artists who specialise in digital art across the Arctic and Europe and thus

beyond the geographical boundaries of Nuuk. Their professional interactions had then almost exclusively been carried out through digital communication channels for the duration of the project.



Figure 2. A woman's hands with traditional Inuit tattoos. The lines across the fingers are linked to the story of the Mother of the Sea, *Sassuma Arnaa*, whose fingers were chopped off and transformed into fish and sea mammals as they fell into the water. (Photo: study participant)

The idea of visualising and sharing old traditions through digital means can also be found in the recent return of (women's) Inuit face and hand tattoos across the Arctic region, see Figure 2. These have been shared by an increasing number of women (and men) across Instagram and Facebook using hashtags such as #inuittattoo or #inuk: “[the tattoo] tells a story, it brings people together as Inuit, as a community. It is more than just a tattoo, you feel a bond, a sisterhood” (P20). Another woman described the tattoos as “part of a whole new cultural regeneration of finding and going back to your roots and saying what were we and what are we.” She further stressed how this cross-regional emancipatory development had been facilitated through digitalisation: “And the digital age had everything to do with this because suddenly people can see what is going on in Canada and what is going on in Alaska and what is going on with Native Americans and they feel such big part of this and we would not hear about it, if it wasn't for social media and digital articles and everything” (P37).

Participants also voiced certain concerns regarding the inclusiveness associated with the tattoos. For instance, P37 discussed feelings of exclusion with regard to identity-formation in Greenland's broader historical and political context that might affect individual feelings of belonging:

“Take these tattoos for an example, people do double-check when they see me because I look so Danish. Some people feel this is only for true Greenlanders. This is the other side of the coin of defining and finding your own identity in this world.”

P33 further observed an idealisation of previous generations of Greenlandic women as role models associated with these tattoos which, however, might neglect some of the historic context:

“I think it's a wonderful idea but often I heard women, because it's a women's tradition, how these great foremothers, how they were a lot more independent [...] and the truth is that women back then and men were living in a very strict society and women were not treated very well back then, nor were men so to speak, because everybody sort of had to adhere to a certain set of taboo rules [to survive in the harsh environment].”

These narratives illustrate how digital networking tools, social media in particular, are used by Greenlandic women to secure their economic freedom and independence as well as state their cultural identity, bringing to life old traditions and historical points of references through growing digitalisation.

Social Support

Rural areas are often underserved with regard to health care services and other institutions that can help individuals who are struggling with different mental health issues and lack of general social support [40]. The needs of rural communities in this respect are, however, still less studied and understood than of their urban counterparts and will require further research. Yet, past studies have looked at the correlation between family and peer support and mental health conditions and underlined the importance of the latter, especially in a rural context where the professional equivalents might be lacking [23].

Most female participants, who had moved from smaller towns and settlements to Nuuk or Copenhagen, mentioned how they used Facebook to stay in contact with their friends and family in their respective hometowns. Other women also mentioned that they were using (closed) Facebook groups intended for Greenlandic women only. They explained how these worked as nation-wide support networks through which information and advice was shared on various topics. Participants reported how these groups helped them to cope with feelings of loneliness and how these groups were used to organise, for instance, offline meet-ups for young mothers (P50). P4 explained that the group she used is exclusively in Greenlandic which would seem to provide group members with an additional feeling of collective security, given that the language is hardly spoken beyond Greenland. She further emphasised that these groups allowed for secrets to be shared with the group administrators.

P48, who had previously lived abroad, noted that social media posts and digital conversations differed from “conversation cultures” she had experienced in other places. She linked this to the fact there was a stronger focus on personal well-being and private matters online:

“[During her time abroad], it was always about topics like seal hunt, sustainability, healthy food etc. but not here [...] for now it's more about private life, for example what we did yesterday, how we feel now, what's going on. People are more day-to-day living. People just tried to survive not that long ago, so there is no overflow of wealth here.”

This focus on inner reflections and the sharing of private matters through social media platforms was not embraced by everyone. P5 was critical of this development and pointed to

the effects of using online fora to vent otherwise unexpressed feelings and frustrations:

“Yes, it [Facebook] is [big in Greenland] and I think that’s the reason why I am not using it, because I think they are using it wrong, in the wrong way, in a negative way. They are just making their status about their problems [...] There is only 16.000 [in Nuuk] and if one person posts she got bad service in a shop and hundreds of people sharing it, it’s just very negative [...] It’s more like, making themselves victims [...] I don’t know why – maybe because we don’t talk about it [problems] and it’s easier to just post about it.”

As Facebook had evolved into one of the major sites of information sharing, P1 argued that a certain motivation had evolved in some Greenlandic communities, to be the first person to post if something had happened. She gave the example of someone passing away and a neighbour directly posting about it on Facebook. Consequently, an entire village might know about that person’s death before the respective family had been informed, on the one hand offering quick social support for those affected but on the other intruding into families’ privacy.

DISCUSSION

Increased access to affordable digital connectivity has been looked at as a potential tool for governments to secure democratic and human rights for marginalised population groups, e.g. in rural or hard-to-reach areas [46, 55, 56]. However, little attention has been paid to gendered asymmetries that may arise from the the disruptive and/or transformative influence of digital technologies in the specific cultural and socio-economic context of geographically remote communities. The present study thus offers valuable insights and contributions to this body of emerging work. It does so by focusing on identifying, acknowledging and discussing some of the everyday (in)securities Greenlandic women are facing and how these may link to the role of digital technologies in addressing societal power imbalances. Research findings from this study thus allow for a deeper understanding of the ways in which digitally facilitated spaces can function as sites of ground-up collective security practices; serving in particular women’s emancipatory practices while also catalysing debates on post-colonial identity formation across the Arctic. Whilst specific to the Greenlandic context, this grounded knowledge can further contribute to the development and implementation of digitalisation policies and designs that are more attuned to the everyday lived experiences of people living in remote communities.

Digital Technologies as Emancipatory Agents

The proportion of women in leadership positions in Greenland is relatively high by global comparison [33]. For example, Greenland has been represented in the Danish parliament exclusively by women since 2015 and there are more women enrolled in higher education programmes in Greenland than men, despite the documented out-flux of women [22, 37, 58]. Yet, studies and statistics on various forms of domestic abuse

also indicate a high exposure of children and women to (sexual) violence [41]. Such figures draw a contradictory image of women’s agency and general empowerment dynamics in Greenland and have been linked to the gradual, yet, relatively rapid loss and transformation of previously male-dominated societal traditions; a process that has challenged the values and ideas of local identities.

However, as this study shows, Greenlandic women have created digital “safe spaces”, also mentioned in [12] in relation to refugees in Sweden, which they proactively utilise to provide support for each other, as collective security practices. These “safe spaces” are used to both express and share individual insecurities as well as to secure certain basic and determining needs, including access to support networks or economic growth and self-realisation. These actions can be seen as direct responses to deficiencies and concerns experienced in their everyday lives, including for instance a lack of economic diversity or mental health support. As an example, the generation of income through self-developed, digital business models underlines the enabling effect of digital connectivity for women in geographically remote communities like Greenland. It also shows how economic security and emotional security are closely connected and not only provided through government incentives, but through digitally-enabled ground-up developments that nurture and support collective security practices, facilitating the pursuit of individual well-being [20].

In this process of circumventing the persisting shortcomings of their immediate physical environments, the female participants in this study showed how their activities extended beyond the advocacy and development of their individual or Greenlandic women’s civic engagement. By visualising and sharing visions for a modern Greenlandic/Inuit identity through their digitally-enabled, pan-Arctic or global networks, Greenlandic women are addressing questions of post-colonial representation that cut across a number of regional identity-related questions [25]. They thereby promote a mainly non-divisive yet emancipatory concept of positive security, enabled through digital means, that fosters both notions of gender equality as well as cultural re-appropriation [45]. Displaying everyday elements of traditional Inuit culture online, these “informal contributions” practically “[become] part of high politics”, shaping and advancing the debate around Greenland’s political and cultural future [26, p.316]. Inclusion in this process is, for instance, achieved through image-based communication in the case of the re-introduced Inuit tattoo tradition which facilitates and allows for a sense of collective belonging beyond linguistic and geopolitical boundaries.

Digital Security and Gendering in Remote Areas

Modern Greenland can be described more broadly as a country of change and contrasts. The historical coexistence of physical disconnect and tight social networks represents a further example of the complex dichotomies that determine the everyday lived experiences of the Greenlandic population. A lack of mobility and social privacy are widely relatable characteristics of rural communities. Yet, through the analysis of the data emerging from the present study it became clear, that the participants associated experiences of negative and positive

security with the social transparency of everyday life in Greenland [45]. While, for some participants, the lack of anonymity contributed to perceived security and ‘protection from harm’ in public settings, social transparency did not alleviate disempowering experiences for female participants in the private sphere, including private interactions online. Such experiences of insecurity were exclusively brought up in one-on-one interview settings, indicating a certain stigma associated with this kind of gendered insecurities as well as the reproduction of gendered power imbalances in digital spaces. The described closed Facebook groups which utilise language and administrators as gatekeepers are illustrative examples of how some Greenlandic women have responded to these unintended gendered consequences of the growing digital landscape in Greenland in particular and in remote areas in general.

Contributions to HCI: Policy and Design

This study, whilst specific to the Greenlandic context, demonstrates the central role of HCI research/ers in nurturing and supporting emancipatory and empowering digital designs and policies in remote and rural areas. This study thus not only contributes to existing HCI scholarship, outlined in the Related Work section, but it also expands it by proposing a design approach that considers collective security practices as an integral feature of technology and policy design. We thus propose the following for HCI:

- To contextualise and adopt a pluralistic outlook on policies and designs for remote and disconnected regions to better enable and account for women’s specific security concerns and their contributions to changing communities.
- To co-design interventions with communities to nurture emancipatory, ground-up security practices to counter gender imbalances and power structures.
- Through community-driven engagements, consider approaches that can enhance opportunities for identity-building and knowledge sharing across isolated and disconnected communities.

The insights drawn from this contextualised study highlight the importance of examining the role of the transformative and disruptive effects of technology in the setting of rural and geographically remote communities. These insights need to be taken into consideration when drafting digitalisation policies and digital design processes.

Limitations and Future Research

This study was based on data collected from fieldwork in both Nuuk, Greenland as well as Copenhagen and Aalborg, Denmark. The findings might have provided a more nuanced picture if further interviews and focus groups had been conducted in smaller settlements in Greenland. Even though many participants originated from one of the smaller Greenlandic towns or settlements, the views expressed in the study might still differ from the experiences of individuals currently living in these settlements. Nevertheless, the data show a clear set of themes as well as many and varied security experiences of Greenlandic women. While this paper focuses on the emancipation of female voices through digitalisation in Greenland,

future research should also engage more specifically with the experiences and struggles of broader groups in Greenland.

CONCLUSION

Looking at three different ways in which Greenlandic women use digital technology to bridge geographical distances and the resulting everyday security challenges, this study has revealed a close intertwining of Greenlandic women’s online civic engagement and their modern representation of Inuit culture in the context of Greenland’s identity-formation process. By working against misconceptions and misinformation that appear to linger on from colonial/post-colonial times, digitally enabled networks emerge as a central platform for inclusive Greenlandic nation-building, offering alternative approaches to some of the country’s most pressing issues. By creating digital “safe spaces” for collective security practices, Greenlandic women turn their everyday online (inter)actions into one main site of security provision. The paper consequently emphasises the need to better integrate the specific security needs of geographically or socially marginalised groups in the conceptualisation of the respective policy and design responses.

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